UPAYA PENCEGAHAN KETERLAMBATAN PROSES *LOADING* LPG DIKAPAL MT. GAS NURI ARIZONA

SKRIPSI

Diajukan guna memenuhi salah satu syarat untuk memperoleh gelar Sarjana Terapan Pelayaran

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PROGRAM STUDI NAUTIKA DIPLOMA IV
POLITEKNIK ILMU PELAYARAN
SEMARANG
2019

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MOTTO

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- Hidup itu bagaikan pena, pasti akan habis yang tertinggal hanya catatan baik atau buruk.

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Semarang, Juli 2019

Peneliti

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ABSTRAKSI

Nur Aji Rohman, 2019, NIT: 52155663N, "Upaya Pencegahan Keterlambatan Proses Loading LPG Dikapal MT. Gas Nuri Arizona". Program Studi Nautika, Program Diploma IV, Politeknik Ilmu Pelayaran Semarang, Pembimbing I: Capt. Ali Imran Ritonga, M.M., M.Mar. and Pembimbing II: Sarifuddin, M.Pd, M.Mar.E

LPG Carrier adalah jenis kapal niaga yang mengangkut muatan gas yang dicairkan. Setiap kapal gas memiliki karakteristik yang berbeda baik dalam penanganan muatan maupun sistem pengangkutanya. Kapal MT. Gas Nuri Arizona adalah kapal gas dengan tipe *fully Pressurerized* yang dirancang untuk mengangkut *LPG* dan gas cair lain dalam jumlah besar. Tujuan peneliti melakukan penelitian ini yaitu untuk mengetahui hambatan yang ditimbulkan ketika proses pemuatan dan upaya untuk pencegahannya.

Dari hasil penelitian yang dilakukan selama praktek berlayar di MT. Gas Nuri Arizona mengenai upaya pencegahan keterlambatan proses *loading LPG*, hambatan yang terjadi saat proses pemuatan adalah pelaksanaan prosedur pemuatan yang tidak baik, panasnya muatan dari kapal yang memberi muatan (*mother ship*) dan kurang optimalnya kinerja *cargo compressor*. Maka upaya untuk mengatasinya adalah melaksanakan pemuatan sesuai prosedur, mensyaratkan bagi anak buah kapal untuk mempunyai sertifikat *basic liquified for gas tanker*, melakukan koordinasi dengan perwira jaga dari kapal pemberi muatan, dan melaksanakan perawatan alat-alat bongkar muat sesuai *plan maitenace system*. Penelitian ini menggunakan metode deskriptif kualitatif, serta pengumpulan data secara observasi dengan cara mengamati langsung objek penelitian, melakukan wawancara dengan sejumlah responden dan didukung dengan metode dokumentasi.

Dari hasil penelitian diatas dapat disimpulkan bahwa proses pemuatan *LPG* di LPG/C Gas Nuri Arizona dapat berjalan lancar apabila proses pemuatan dilaksanakan sesuai prosedur, melakukan koordinasi dan komunikasi yang baik saat proses pemuatan dan alat pemuatan dalam kondisi bagus.

Kata kunci : pencegahan,pemuatan, *LPG.*

ABSTRACT

Nur Aji Rohman, 2019, NIT: 52155663N, "Upaya Pencegahan Keterlambatan Proses Loading LPG Dikapal MT. Gas Nuri Arizona". Nautical Departmen, Diploma IV Program, Semarang Merchant Marine Polytechnics, 1st Supervisor : Capt. Ali Imran Ritonga, M.M., M.Mar. and 2nd Supervisor : Sarifuddin, M.Pd, M.Mar.E

LPG Carrier is one of the vessels which carries gas that is being liquefied. Every gas tanker has different characteristic, both in handling the load and the carriage system. MT. Gas Nuri Arizona is a vessel with Fully Pressurized type which designed to load huge amount of LPG and Liquefied gas. The purpose of this research are, to know the problem caused during loading process and efforts to prevent it.

From the research that had been done in sea project on MT. Gas Nuri Arizona about the efforts to prevent delays LPG loading process, problem that occur when the loading process is implementation of procedures that are not good, heat transfer cargo from the ship which gave the charge (mother ship) and less optimal cargo compressor performance. Then the effort to overcome it is to carry out loading according to the procedure, requiring the crew to have a basic certificate for liquefied gas tankers, coordinate with duty officers from mother ship, and carry out maintenance tools appropriate loading plan maitenace system. This research use descriptive qualitative method, as well as data collection direct observation by observing the object of research , conducted interviews with a number of respondents and supported by documentation method.

From the research above, we can conclude that loading procces of LPG on LPG/C Gas Nuri Arizona can be smoothly if the loading process is carried out according to the procedure, good coordination and communication during the loading process, and the equipment in good condition.

Keyword : Prevention, loading, LPG.

BAB I

PENDAHULUAN

A. Latar Belakang

Majunya perkembangan transportasi diera modern saat ini dan pertumbuhan ekonomi yang terus meningkat dari negara-negara di dunia, menyebabkan kebutuhan dan pengangkutan barang-barang juga terus meningkat. Untuk mendukung semua itu, maka diperlukan sarana transportasi dari berbagai sektor guna memperlancar proses pengangkutan barang tersebut. Dari sektor pengangkutan barang melalui laut, udara, dan darat. Tingginya kebutuhan pendistribusian melalui sektor laut dengan kapal laut, membuat sector transportasi laut berkembang pesat. Dengan dibuktikan banyaknya jenis-jenis kapal yang dibuat dan digunakan sebagai transportasi laut sekarang ini. Kapal laut sebagai transportasi utama yang digunakan untuk mendistribusikan barang dari sector laut yang memiliki keuntungan lebih dibandingkan alat transportasi lainya. Dengan keuntungan daya ruang muat dan daya angkut relative besar, serta memiliki biaya operasional yang cukup kecil ini menyebabkan banyaknya distributor memilih untuk mendistribusikan barang melalui kapal laut. Pada dasarnya transportasi laut dalam hal ini kapal, bertugas sebagai salah satu sarana transportasi untuk memindahkan barang dari satu pelabuhan kepelabuhan lain atau dari satu daerah kedaerah lain melalui jalur laut, sungai, dll. Transportasi laut dinilai lebih efektif dan efisien karena dilakukan dengan penuh tanggung jawab dan perbandingan biaya yang lebih hemat.

Dalam perkembangannya, kapal mulai memiliki banyak jenis dan dapat dibedakan menurut jenis muatan yang diangkut. Salah satu jenisnya ialah kapal tanker, dikapal tanker sendiri masih dibedakan menjadi beberapa jenis yaitu tanker minyak, kapal tanker chemical, dan kapal tanker gas. Dalam sekripsi ini peneliti akan membahas tentang kapal tanker gas yaitu LPG/C Gas Nuri Arizona yang merupakan kapal tempat peneliti praktik laut. Kapal LPG termasuk dalam kategori kapal tanker pengangkut gas yang dirancang khusus (*special design ship*), jenis kapal ini digunakan untuk mengangkut muatan gas yang dicairkan secara curah yang disyaratkan oleh IMO (*Internasional Maritime Organization*). Di atas kapal LPG/C Gas Nuri Arizona kami memantau setiap perubahan temperatur dan tekanan muatan di cargo deck yang telah dilengkapi dengan indicator terhadap suhu dan tekanan muatan. Pada pemuatan *LPG fully pressurized* penting dalam memperhatikan kondisi tekanan dan suhu pada tangki. Karena *LPG* dimuat dalam keadaan tekanan udara luar dan pada suhu rendah. Maka tangki harus mampu menahan keadaan tersebut. Suhu yang tinggi pada muatan dalam proses loading dapat menaikkan tekanan dalam tangki sehingga melebihi batas tekanan yang telah ditentukan. Hal ini dapat membuat proses loading menjadi bermasalah (Nugroho, 2015). Berikut adalah fenomena yang pernah peneliti alami yang terjadi di atas kapal.

Tempat dan tanggal kejadian	Kejadian	Dampak
Kalbut, 25 April 2018	Saat proses loading,	Proses loading

	tekanan dalam tanki muatan terlalu tinggi sehingga rate turun	melambat
Kalbut, 25 April 2018	Ketika kapal selesai loading LPG, tekanan dalam tanki sangat tinggi. Pressure diturunkan dengan cargo compressor. Namun kondisi compressor tidak prima.	membutuhkan waktu berjam-jam untuk menurunkan pressure.
Kalbut, 25 April 2018	Terjadi kebocoran pada manifold saat hendak memuat dikarenakan bosun lupa memasang gasket pada reducer dan reducer harus dipasang ulang beserta gasket.	Menyita waktu dalam proses memuat

Tabel 1.1 Fenomena diatas kapal

Adanya kendala-kendala dalam proses pemuatan memberikan efek keterlambatan dalam proses *loading* . Keterlambatan proses *loading*

menimbulkan banyak kerugian bagi pihak kapal, mengakibatkan telatnya jadwal pembongkaran, kerugian ekonomi bagi perusahaan dan PT. Pertamina sebagai pemilik muatan serta penduduk sebagai konsumen LPG karena terjadi kelangkaan distribusi pengiriman LPG. Faktor yang menyebabkan kelambatan pemuatan adalah akibat adanya tekanan tangki yang sangat tinggi, dan tidak optimalnya *cargo compressor* untuk menurunkan tekanan pada tangki muatan, sehingga perlu untuk mengetahui bagaimana penanganan suhu dan tekanan pada tangki muatan dalam pemuatannya serta kendala yang mempengaruhinya dan upaya dalam mengatasi kendala tersebut. Sebab-sebab tersebut bersumber pada alat –alat mekanik dan lingkungan serta kepada manusianya sendiri. Solusi yang di berikan yaitu semua kru kapal wajib melaksanakan prosedur cargo operation yang telah dibuat dan melakukan perawatan teratur pada semua peralatan dikapal sesuai dengan plan maintenant system. Sebaiknya para officer harus mampu memberikan bimbingan, pelatihan dan pengetahuan yang cukup kepada anak buah kapal dalam hal cargo operation terutama pada saat proses pemuatan berlangsung (Nugroho, 2015). Pemuatan *LPG* dijalankan sesuai dengan prosedur pemuatan dan *cargo manual book* .Meningkatkan komunikasi dan koordinasi yang baik pada saat proses pemuatan *LPG*. Melaksanakan pengecekan peralatan pemuatan sebelum digunakan dan perawatan alat-alat pemuatan secara rutin sesuai *PMS* (Arrozaq,2018).

Penelitian Muhammad Ilham Fatah Arrozaq:2018 dikapal MT. Gas Attaka yang berjudul *"Upaya Peningkatan Proses Loading Liquefied Petroleum Gas*

Dikapal Shuttle Ship LPG/C Gas Attaka". Dalam penelitian ini penulis menjelaskan secara umum mengenai masalah yang terjadi saat proses loading dan upaya yang dilakukan untuk menciptakan proses loading yang optimal.

Penelitian Hari Laksono:2018 Dikapal MT. Eleanor yang berjudul *"Optimalisasi Penanganan Muatan Gas LPG Guna Kelancaran Proses Bongkar Muat Di MT. Eleanor".* Dalam penelitian ini penulis menerangkan pentingnya pemahaman awak kapal akan karakteristik muatan dan bagaimana penanganan muatan sesuai prosedur sehingga proses bongkar dan muat dapat berjalan lancar.

Dalam hal ini peneliti mengamati adanya kendala-kendala yang menimbulkan keterlambatan proses *loading* di kapal LPG/C Gas Nuri Arizona yang menimbulkan kerugian waktu. Menurut peneliti penanganan muatan sesuai prosedur dan perawatan alat-alat mekanik sesuai *PMS* sangat diperlukan untuk mencegah terjadinya kendala-kendala dalam proses loading. Permasalahan tersebut harus dicegah agar keterlambatan dalam proses loading dapat dihindari. Sehubungan kendala-kendala yang terjadi pada saat peneliti melakukan praktek laut di kapal LPG/C Gas Nuri Arizona milik perusahaan PP. Ekanuri Indra Pratama. Maka peniliti mengambil judul penelitian "**Upaya Pencegahan Keterlambatan Proses *Loading* Dikapal MT. Gas Nuri Arizona**".

B. Perumusan Masalah

Berdasarkan judul yang telah dipilih oleh peneliti, maka masalah yang akan dibahas dalam sekripsi ini ialah :

1. Apa saja hambatan yang ditimbulkan ketika proses *loading* dikapal MT. Gas Nuri Arizona?
2. Bagaimana upaya pencegahan keterlambatan proses *loading* LPG dikapal MT. Gas Nuri Arizona?

C. Tujuan Penelitian

Berdasarkan pengalaman dan pengamatan peneliti selama diatas kapal, maka tujuan dari penelitian ini ialah :

1. Mengetahui hambatan yang ditimbulkan ketika proses *loading* LPG di kapal LPG/C Gas Nuri Arizona.
2. Mengetahui upaya yang dilakukan untuk mencegah keterlambatan proses loading LPG di kapal LPG/C Gas Nuri Arizona.

D. Manfaat Penelitian

Pada penelitian ini diketengahkan beberapa bahasan yang diharapkan dapat bermanfaat bagi para pembaca, yaitu:

1. Manfaat Secara Teoritis
   a. Menambah pengetahuan bagi pembaca dalam proses memuat dengan baik khususnya pada kapal *LPG*.
   b. Mengetahui persiapan yang harus dilakukan ketika akan melaksanakan proses memuat.
2. Manfaat Secara Praktis
   a. Bagi *Crew*

1) Menghindari terjadinya kesalahan dan kecelakaan kerja, yang sering disebabkan kurangnya pemahaman terhadap pelaksanaan aturan-aturan yang telah dibuat pada proses bongkar muat diatas kapal, khususnya muatan berbahaya seperti *Liquified Petroleum Gas (LPG)*.

2) Mencegah terjadinya kelangkaan pasokan gas *LPG* karena tidak optimalnya pelaksanaan proses pemuatan *LPG* dan mencegah kerugian dalam segi ekonomi bagi Pertamina dan Perusahaan.

3) Menghindari hal-hal yang dapat menghambat proses pemuatan yang disebabkan kurangnya pemahaman terhadap prosedur-prosedur pelaksanaan proses pemuatan *LPG*.

b. Bagi perusahaan:

Diharapkan penelitian ini dapat menjadi semangat baru bagi pihak-pihak terkait, agar dapat lebih meningkatkan tenaga kerja yang lebih mandiri dan profesional.

E. Sistematika Penulisan

Untuk mempermudah sistematika penulisan skripsi ini, maka penyajian skripsi ini dibuat terdiri dari 5 (lima) bab, dimana tiap-tiap bab selalu berkesinambungan dan merupakan suatu rangkaian yang tidak dapat terpisahkan.

1. Bab I Pendahuluan

a. Latar Belakang Penelitian

b. Perumusan Masalah

c. Tujuan Penelitian

d. Manfaat Penelitian

e. Sistematika Penulisan

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3. Bab III Metode Penelitian

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b. Metode Penelitian

c. Sumber Data

d. Metode Pengumpulan Data

e. Teknik Keabsahan Data

f. Teknik Analisis Data

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a. Gambaran Umum Objek Penelitian

b. Analisis Masalah

c. Pembahasan Masalah

5. Bab V Penutup

a. Kesimpulan

b. Saran

BAB II

LANDASAN TEORI

A. Tinjauan Pustaka

1. Penanganan Muatan

Penanganan muatan merupakan suatu pengetahuan tentang memuat dan membongkar muatan dari dan ke atas kapal sedemikan rupa agar terwujud 5 prinsip pemuatan yang baik (Martopo dan Soegiyanto 2004: 07). Pengaturan dan teknik pemuatan diatas kapal merupakan salah satu kecakapan pelaut yang menyangkut berbagai macam aspek tentang bagaimana cara melakukan pemuatan diatas kapal, bagaimana cara melakukan perawatan muatan selama dalam pelayaran, dan bagaimana cara melakukan pembongkaran di pelabuhan tujuan (Martopo dan Soegiyanto 2004: 07). Lima prinsip pemuatan yang harus benar-benar diperhatikan dan dilaksanakan. Prinsip-prinsip utama pemuatan:

a. Melindungi ABK dan buruh

Melindungi ABK dan buruh adalah menyangkut atas keselamatan jiwa ABK dan buruh, bahwa selama ABK dan buruh melaksanakan kegiatannya senantiasa selalu terhindar dari segala bentuk-bentuk resiko-resiko yang mungkin atau dapat terjadi yang berasal atau akibat dari pelaksanaan bongkar muat. Agar mereka selamat dalam melaksanakan kegiatan dengan menggunakan alat keselamatan kerja secara benar.

b. Melindungi kapal

Agar kapal tetap selamat selama muat bongkar maupun dalam pelayaran, misalnya menjaga stabilitas kapal. Untuk melindungi kapal maka pembagian muatan diatur sebagai berikut : (1) Secara tegak (*vertical*) (2) Secara melintang (*tranversal*) (3) Secara membujur (*longitudinal*) (4) Secara khusus pada *tween deck.*

c. Melindungi muatan

Pada waktu muat atau bongkar selama dalam pelayaran muatan harus ditangani secara baik untuk mencegah kerusakan muatan.

d. Muat dan bongkar secara tepat dan sistematis

Adanya rencana pemuatan dan bongkar (*stowage plan*) menggunakan ruang muat semaksimal mungkin. Untuk mencapai hal yang maksimal dalam proses bongkar muat maka hal-hal yang harus dihindari/ dicegah adalah terjadinya *Long hatch, Over stowage, Over Carriage*. *Long hatch* adalah penumpukan suatu jenis muatan dengan jumlah banyak pada satu palka untuk satu pelabuhan tertentu. *Over stowage* adalah muatan yang seharusnya dibongkar di suatu pelabuhan tujuan terhalang oleh muatan lain yang berada di atasnya. Sedangkan *over carriage* adalah muatan yang seharusnya dibongkar suatu pelabuhan tujuan terbawa ke pelabuhan berikutnya.

e. Penggunaan ruang muat semaksimal mungkin

Dalam melakukan pemuatan harus diusahakan agar semua ruang terisi penuh oleh muatan atau kapal dapat muat sampai maksimal.

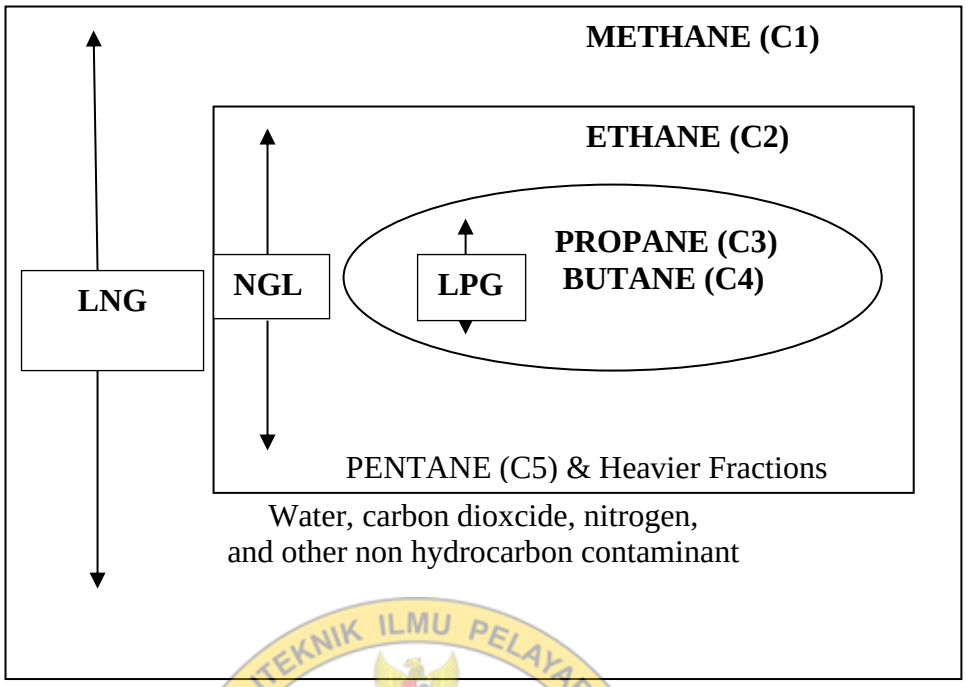
Pemanfaatan ruang muat dengan semaksimal mungkin berkaitan dengan penguasaan ruang rugi (*broken stowage*). *Broken stowage* adalah besarnya ruang yang tidak dapat dimanfaatkan untuk pengaturan muatan.

2. Muatan LPG dan Type kapal gas

Menurut *International Maritime Organisation* dalam IGC *Code Chapter* 3 (2007, p.6) menjelaskan bahwa : "*Liquefied gas is a liquid which has saturated vapour pressure exceeding 2.8 bar absolute at 37.8 ºC and certain other substance specified in the gas codes*", yang dapat diartikan sebagai berikut yaitu : Gas cair adalah cairan yang mempunyai tekanan vapour absolute melampaui 2.8 bar pada temperature 37.8 ºC dan zat-zat lain sebagaimana yang ditetapkan di dalam kode gas.

LPG merupakan bahan bakar berupa gas yang dicairkan (*Liquified Petroleum Gasses*) merupakan produk minyak bumi yang diperoleh dari proses distilasi bertekanan tinggi. Fraksi yang digunakan sebagai umpan dapat berasal dari beberapa sumber yaitu dari Gas alam maupun Gas hasil dari pengolahan minyak bumi (*Light End*). Komponen utama LPG terdiri dari *Hidrokarbon* ringan berupa *Propana (C3H8)* dan *Butana (C4H10)*, serta sejumlah kecil *Etana (C2H6)* dan *Pentana (C5H12*) (http://liguifiedpetroleumgas.blogspot.com/LPG,2013,para.1).

Pengelompokan antara Gas alam, NGL dan LPG dapat dilihat pada diagram di bawah ini :



Sumber : (*Liquified Gas Handling Principles LPG-LNG*, p.3)

Gambar 2.1 Pengelompokan antara Gas alam, NGL dan LPG

Jadi menurut uraian di atas peneliti mengambil kesimpulan bahwa *Liquefied Petroleum Gas* adalah salah satu hasil bumi yang terdiri dari *propane* dan *butane* atau campuran dari keduanya yang memiliki sifat tidak berbau dan tidak berwarna namun memiliki tingkat bahaya terhadap kebakaran yang sangat tinggi. STCW 2010 mensyaratkan setiap orang yang bekerja di atas kapal jenis *gas tanker* harus memiliki sertifikat keterampilan dibidang pengoperasian kapal jenis *gas tanker*.

Menurut SIGGTO (2008, p.10,11) yang menjelaskan bahwa kapal gas adalah kapal barang yang dibangun dan dirancang untuk dapat mengangkut muatan secara curah semua jenis gas yang dicairkan. Beikut kapal gas dibagi dalam beberapa jenis menurut muatannya antara lain :

a. *Fully pressurised ship*

Kapal *fully pressurised* merupakan tipe kapal yang paling sederhana dari semua tipe pengangkut gas, membawa muatan pada suhu *ambient* dengan tipe tangki muatan "C" yang mempunyai tekanan sekitar 18 bar, mempunyai kapasitas ruang muatan antara 4.000 m^3 sampai 6.000 m^3 kapal ini digunakan untuk membawa LPG dan amonia.

b. *Semi pressurized ship*

Kapal tipe *semi pressurised* ini merupakan jenis kapal yang dapat melakukan pemuatan dan pembongkaran secara *fully refrigrerated* dan *fully pressurised*, mempunyai volume muat antara 3.000 m^3 sampai 15.000 m^3 dengan suhu yang dingin antara 4˚C sampai 8˚C dan tekanan antara 3.5 Bar sampai 4.5 Bar, kapal ini dapat memuat muatan LPG dalam bentuk *fully refrigrated* dan *fully pressurised*.

c. *Ethylene and gas / chemical carriers*

Kapal ini mempunyai kelebihan dengan dapat memuat muatan selain muatan LPG, kapal ini dapat memuat *ethylene* yang mempunyai *boiling point* -104˚C, serta mempunyai kapasitas ruang muat antara 1.000 m^3 sampai 12.000 m^3, dengan *specific gravity* 1.8 pada temperatur minimum -104˚C sampai +80˚C, kapal tipe ini dapat melakukan pemuatan dan pembongkaran secara *pressurised* dan *refrigreated*.

d. *Fully refrigerated ship*

Kapal dengan kapasitas ruang muat besar yang berkisar antara 20.000 m^3 sampai 100.000 m^3 dapat memuat muatan dengan temperatur -48˚C, jenis muatan yang dapat dimuat oleh kapal tipe ini yaitu : LPG, *ammonia,* and *vinyl chloride.*

e. *Liquefied natural gas* (LNG) *carrier*

Kapal ini mempunyai kapasitas antara 125.000 m^3 sampai 135.000 m^3, Muatan LNG di angkut dalam temperatur -162 ºC, kapal ini hanya dapat memuat muatan jenis LNG, dan tidak ada yang lain.

3. Proses Loading LPG

Dalam proses pelaksanaan pemuatan ada banyak hal yang harus dilaksanakan dan diperhatikan supaya pemuatan berlangsung secara aman.

a. Persiapan memuat

Persiapan memuat adalah dengan mempersiapkan tangki kapal sebagai tempat pemuatan, jalur-jalur pemuatan, alat bongkar muat, alat bantu muat bongkar, dan alat keselamatan yang digunakan.

Berikut penjelasan lebih lanjut :

1) Persiapan tangki kapal (*Preparation Cargo Tank*)

Tanki kapal adalah ruangan kosong yang berfungsi sebagai tempat muatan, yang terbagi dalam beberapa bagian, yaitu tangki bagian tengah disebut dengan *Center tank*, sedangkan tangki yang berada dibagian kanan kapal disebut *starboard tank* dan tangki yang berada di bagian kiri disebut sebagai *port tank*. Tangki kanan

dan kiri disebut dengan *wings tank*. Prosedur sebelum melakukan pemuatan adalah dengan mempersiapkan tangki kapal. Persiapan tangki kapal disebut juga dengan istilah *tank prepare*. *Tank prepare* adalah menyiapkan tangki kapal dalam keadaan bersih dengan cara membersihkan tangki kapal sesuai dengan ketentuan yang berlaku beserta seluruh antaranya juga sesuai dengan permintaan penyewa kapal.

2) Alat muat bongkar

Alat muat bongkar yang paling utama menurut D. Rutherford (1980:19) alat yang paling penting dalam proses muat dan bongkar adalah *cargo pump*.

a) *Line cargo*
b) *Cargo hose*
c) *Reducer*
e) *Cargo Control Room*

3) Alat bantu bongkar muat

a) Alat komunikasi radio
b) *Gangway*
c) *Crane*

4) Alat keselamatan

Alat keselamatan menurut *ILO* (*International Labour organization*) bagian 5.4 tentang *PPE* (*Personal Protectif Equipment*) dan *ILO* bagian 6 tentang *emergencies* dan *emergency equipment* diantaranya :

a) *Wearpack* (pelindung badan)

b) *Safety helmet*

c) *Safety shoes*

d) *Safety glove*

e) *Safety glase*

f) *Earplug*

g) *Life buoy*

h) *SOPEP (Shipboard oil pollution emergency plan*)

i) *Fire fighting equipment*

j) *Fire extinguisher*

k) *Emergency stop pump*

ISM Code chapter 10 menyebutkan bahwa pemeriksaan dan perawatan terhadap peralatan harus dilaksanakan dengan selang waktu yang tepat.

5) *Safety Check list*

Safety checklist menurut *Tanker safety* sesuai rekomendasi IMO dalam pengangkutan, penyimpanan yang aman dari zat berbahaya di pelabuhan (*Assembly Resolution* A. 435 XI). Sedangkan untuk pelaksanaan itu sendiri digolongkan menjadi beberapa bagian yaitu :

a) Bagian A-*General* berlaku untuk semua kapal *tanker*.

b) Bagian B-*Additional* berlaku untuk kapal kimia.

c) Bagian C-*Additional* berlaku untuk kapal gas.

6) *Ship Dokumen*

Dokumen adalah syarat-syarat penting kapal yang harus dijaga dengan baik, karena tanpa surat-surat tersebutkapal atau armada tidak bisa melakukan suatu pelayaran, (Peter Salim: 1990).Contoh dokumen yang disiapkan saat akan memuat adalah *Notice of Readiness (NOR).*

b. Perencanaan Pemuatan

Perencanaan pemuatan di atas kapal disebut sebagai *Loading plan*. *Loading plan* menurut buku panduan *Gas Tanker Familirization* adalah perencanaan atau panduan untuk memuat suatu muatan. Perencanaan pemuatan ini diajukan oleh pihak kapal dalam hal ini diwakili perwira kapal yang bertanggung jawab atas muatan dan disetujui oleh pihak dermaga atau perwakilan dari terminal. Besarnya muatan yang dimuat sesuai dengan perjanjian *Charter*.

c. Pelaksanaan pemuatan

Adapun pelaksanaan pemuatan yang dilakukan diatas kapal dalam pelaksanaan muat bongkar diantaranya *continue loading*, *controlling*, *half loading*, dan *topping loading*.

d. Selesai pemuatan

1) *Sounding Cargo*.

2) *Calculation Cargo.*

3) *Clearance Cargo Document and Ship Documen*.

Menurut Istopo (1999:397) dokumen-dokumen yang digunakan dalam proses pengapalan barang antara lain:

a) *Mate's Receipt* (resi mualim).

b) *Bill of lading* (kontrak angkutan barang melalui laut).

c) *Cargo Manifest* (daftar muatan).

d) *Delivery Order* (D/O).

e) *Shipping instruction* (SI).

4. Factor-faktor yang Menyebabkan Terhambatnya Proses *Loading*

a. Prosedur pemuatan LPG tidak dilaksanakan dengan baik oleh kru kapal sehingga terjadi kelalaian dalam proses tes kebocoran (*leaking test*) pada *manifold* dan proses *line up*.

b. Terjadinya kenaikan tekanan / *pressure* yang cepat karena panasnya suhu muatan dari kapal pemberi muatan dan cuaca yang sangat panas sehingga menyebabkan menurunnya kecepatan *loading rate* dan terjadi *back pressure* ke *mother ship*.

Tidak optimalnya penggunaan *Cargo Compressor* untuk menurunkan tekanan pada tangki muatan karena kurangnya dukungan dalam perawatan mesin. Menurut SIGTTO dalam buku Germany Lyoid (2008, p.95) disebutkan:

"it is necessary to protect cargo vapour compressors against the possibility of liquid being drawn. Such a situation can seriously damage compressors since liquid is compressible."

Pengertian dari kalimat di atas adalah bahwa *cargo compressor* harus

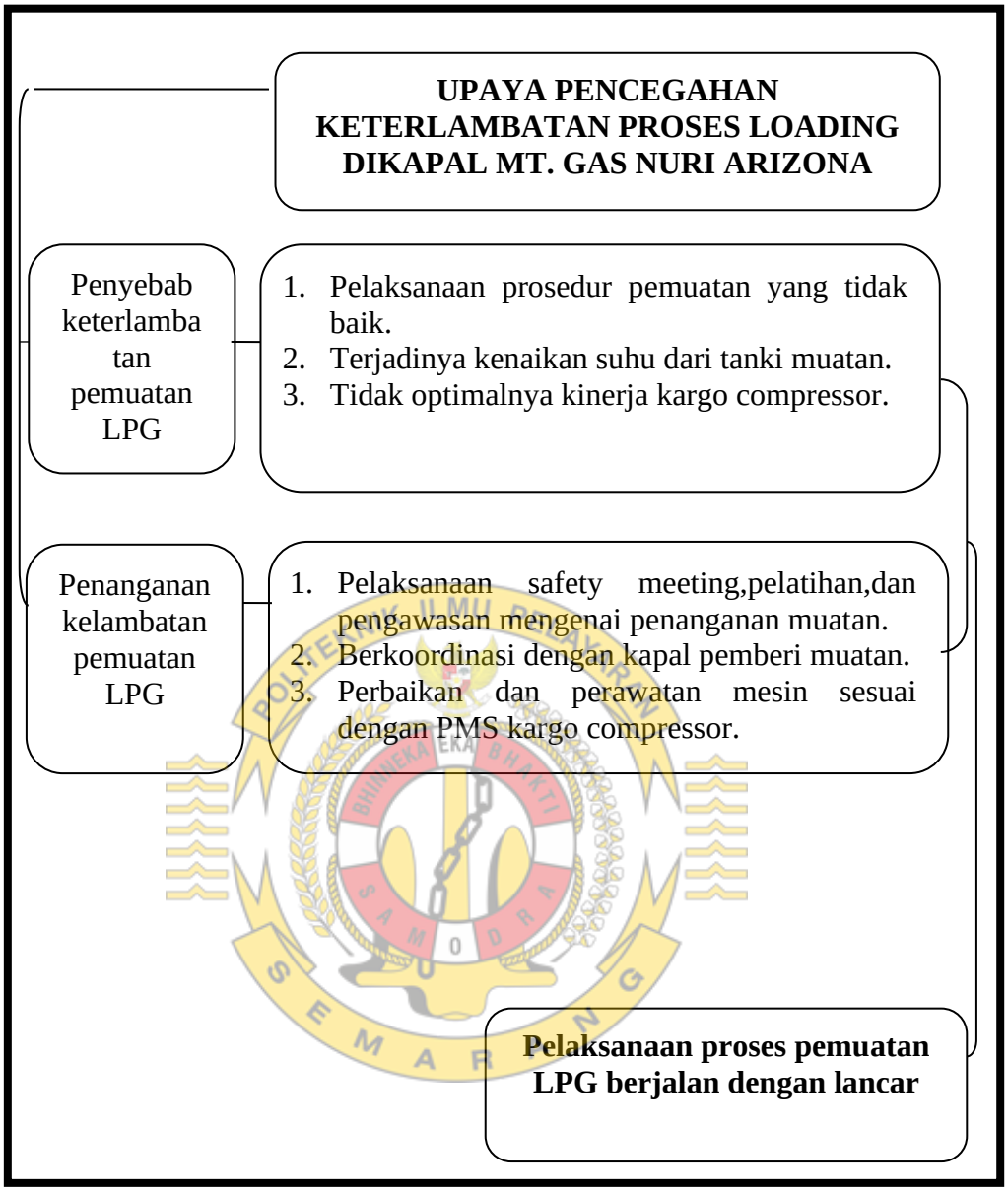
dicegah dari masuknya muatan *liquid*, karena hal tersebut dapat menyebabkan kerusakan serius pada *cargo compressor* itu sendiri. Dalam permasalahan ini berhubungan dengan masalah pertama tentang anak buah kapal tidak melaksanakan prosedur pemuatan dengan baik , pada waktu tes kebocoran selesai anak buah kapal lupa menutup *spray valve* sampai pemuatan dimulai, dan membuat aliran *liquid* masuk menuju pipa *vapour*, jika tidak diketahui dan banyak aliran *liquid* masuk menuju pipa *vapour* akan sangat berbahaya pada saat *cargo compressor* dijalankan dapat terjadi kerusakan atau ledakan.

B. Kerangka Pikir Penelitian

Dalam penulisan skripsi ini peneliti menggunakan kerangka berpikir untuk memaparkan secara kronologis dalam setiap penyelesaian pokok permasalahan penulisan yaitu kelancaran pelaksanaan memuat gas LPG yang dilaksanakan secara ship to ship. Untuk memenuhi kelancaran tersebut maka harus melaksanakan pemuatan sesuai prosedur, melaksanakan tanggung jawab dengan sebaik mungkin , melakukan perawatan peralatan bongkar-muat sesuai PMS di kapal, mengadakan pengawasan, selalu berkomunikasi kepada semua kru (perwira dan anak buah kapal) dan pihak *mother ship*.

Pada penanganan dan pengaturan muatan terutama pada saat pemuatan maka harus diperhatikan benar-benar prinsip-prinsip pemuatan agar kegiatan memuat tersebut berjalan dengan sistematis cepat dan aman. Pada kenyataan banyak terjadi kendala Adapun faktor-faktor penyebab terjadinya kelambatan proses pemuatan LPG di kapal LPG/C Gas Nuri Arizona pada saat sandar *STS Transfer* adalah sebagai berikut :

1. Prosedur pemuatan LPG tidak dilaksanakan dengan baik oleh kru kapal sehingga terjadi kelalaian dalam proses tes kebocoran (*leaking test*) pada *manifold* dan proses *line up*.
2. Terjadinya kenaikan tekanan / *pressure* yang cepat karena panasnya suhu muatan dari kapal pemberi muatan dan cuaca yang sangat panas sehingga menyebabkan menurunnya kecepatan *loading rate* dan terjadi *back pressure* ke *mother ship.*
3. Tidak optimalnya penggunaan *Cargo Compressor* untuk menurunkan tekanan / *pressure* pada tangki muatan karena kurannya dukungan dari *engine departement* dalam perawatan mesin, seperti tidak berfungsinya salah satu *generator* sebagai syarat menjalankan *cargo compressor* dan kerusakan kondesor pada pompa air laut LPG.



Gambar 2.2 Kerangka Pikir Penelitian

BAB V

PENUTUP

A. Kesimpulan

Berdasarkan uraian dari bab-bab sebelumnya, maka peneliti dapat menarik kesimpulan bahwa:

1. Penyebab terjadinya keterlambatan proses *loading* LPG di kapal MT.Gas Nuri Arizona:
   a. Prosedur pemuatan LPG tidak dilaksanakan dengan baik oleh kru kapal sehingga terjadi kelalaian dalam proses tes kebocoran (*leaking test*) pada *manifold.*
   b. Suhu muatan yang panas dari kapal pemberi muatan menyebabkan naiknya tekanan dan suhu pada tangki muatan dengan cepat.
   c. *Cargo compressor* yang tidak dapat berkerja secara optimal saat dibutuhkan untuk menurunkan tekanan dan suhu pada tanki muatan.
2. Pencegahan keterlambatan proses *loading* LPG di kapal MT.Gas Nuri Arizona:
   a. Belum ada upaya dari kapal atau kantor untuk melakukan pencegahan keterlambatan seperti melakukan *safety meeting* sebelum proses *loading* dan pelaksanaan prosedur memuat yang baik.
   b. Melakukan komunikasi kepada perwira jaga kapal pemberi muatan dalam hal penurunan *rate* sampai kondisi tangki muatan kembali stabil.
   c. Perbaikan dan perawatan alat permesinan Cargo dilaksanakan

seadanya karena tidak adanya pengiriman suku cadang.

B. Saran

Dari beberapa kesimpulan di atas, maka Peneliti memberikan saran sebagai berikut:

1. Untuk mengatasi hambatan yang terjadi saat proses loading LPG maka sebaiknya:
   a. Frekuensi sosialisasi lebih ditingkatkan, untuk itu dibuat jadwal-jadwal pelatihan tentang *cargo operation.*
   b. Segera melakukan koordinasi kepada perwira jaga kapal pemberi n muatan.
   c. Meningkatkan kegiatan pengecekan dan perawatan alat-alat pemuatan sesuai dengan PMS.
2. Untuk melakukan pencegahan keterlambatan proses loading LPG sebaiknya:
   a. Dilaksanakan *safety meeting* sebelum proses *loading* dan mensyaratkan anak buah kapal untuk memiliki sertifikat *BLGT*, serta menjaga komunikasi dan pengawasan antara perwira dan anak buah kapal.
   b. Perwira jaga dek harus meningkatkan kewaspadaan terhadap kondisi tekanan dan suhu tanki muatan, kondisi cuaca dan peralatan bongkar muat yang lain.
   c. Pihak perusahaan mengadakan *internal audit* secara rutin guna meningkatkan kedisiplinan perwira kapal dalam melakukan perawatan peralatan permesinan diatas kapal serta mengirim suku cadang yang dibutuhkan.

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http://liguifiedpetroleumgas.blogspot.com/LPG,2013,para.1

LAMPIRAN

DAFTAR WAWANCARA

A. Nama-nama Kru Kapal yang Diwawancara

1. Chief Officer : Basuki Rahmat
2. Third Officer : Hary Suratin
3. Bosun : Sucipto
4. Second Enginer : Kriswanto

B. Hasil Wawancara

1. Chief Officer

   a. Dalam melaksanakan operasi muatan, mualim satu dibantu oleh mualim jaga.Bagaimana perwira jaga harus bertindak agar operasi muatan berjalan denganlancar dan aman?

   Jawab :

   “Sebelum melaksanakan operasi muatan, saya selalu membuat cargostowage plan dan safety checklist yang harus diisi tiap jaga, maksud saya memberikan itu kepada mualim jaga agar dalam penanganan muatan, mualim jaga dapat mengetahui apa saja yang harus dilakukan dan memeriksa semuayang berkaitan dengan muatan dan mengisi kedalam check list.”

   a. Apa yang menjadi hambatan dalam kegiatan loading sehingga terjadi keterlambatan?

   Jawab :

   “keterlambatan saat proses loading terjadi karena tingginya suhu muatan yang diberikan oleh kapal pemberi muatan sehingga berdampak pada turunnya loading rate serta pelaksanaan proses loading yang tidak sesuai dengan prosedur yang ada.”

b. Apa yang seharusnya dilakukan untuk mencegah keterlambatan yang terjadi saat proses loading?

Jawab :

" lambatnya proses loading dapat dicegah atau ditangani. Yaitu semua kru kapal wajib melaksanakan prosedur cargo operation yang telah dibuat dan melakukan perawatan teratur pada semua peralatan dikapal."

c. Mengapa Cargo compressor perlu dilakukan saat pemuatan berlangsung ?

Jawab :

Cargo compressor dijalankan untuk menurunkan tekanan tanki muatan yang tinggi agar rate muatan kembali normal sesuai dengan discharging aggrement cargo, dan tidak terjadi lambatnya proses pemuatan. Vapour dari tanki muatan dihisap oleh cargo compressor melalui vapour line dan dialirkan kembali melalui liquid line. Dengan proses ini yang terus-menerus maka tekanan tanki muatan dapat diturunkan untuk mengurangi back pressure.

2. Third Officer

a. Apa yang menjadi hambatan dalam kegiatan loading sehingga terjadi keterlambatan?

" Proses loading melambat disebabkan oleh peralatan bengkar muat yang bekerja tidak optimal karena kurangnya perawatan. Berdampak saat pressure tank tinggi dan loading rate turun, sedangkan cargo compressor yang seharusnya dapat digunakan untuk menurunkan tekanan pada tanki namun tidak dapat bekerja secara optimal sehingga tekanan pada tanki tetap tinggi dan loading rate tetap lambat."

b. Apa yang seharusnya dilakukan untuk mencegah keterlambatan yang terjadi saat proses loading?

“ Untuk mencegah terjadinya keterlambatan dalam proses loading, hal yang harus diperhatiakan adalah pengetahuan dan pemahaman mengenai proses pemuatan LPG harus dimiliki oleh semua pihak yang bersangkutan, dari bagian pengoperasian di dek dan juga dibagian mesin juga harus selalu berkomunikasi. Hal ini juga bertujuan agar apabila ada hal – hal yang harus dibenahi sesuai prosedur pemuatan LPG dapat segera dilakukan”

3. Bosun

a. Apa tugas bosun sewaktu kegiatan bongkar muat berlangsung ?

Jawab :

“Tugas saya sewaktu bongkar muat adalah menyiapkan reducer untuk dipasang pada manifold, membuka valve pada manifold saat akan memuat atau bongkar muatan, memastikan keadaan kapal saat proses bongkar maupunmemuat dalam keadaan lancar, mengoperasikan kompresor muatan untuk mendorong vapour kedalam tangki maupun menurunkan tekanan dalam tangki.”

c. Apa yang menjadi hambatan dalam kegiatan loading sehingga terjadi keterlambatan?

“Saat proses loading terjadi keterlambatan dikarenakan pelaksanakaan proses loading yang tidak sesuai dengan presedur yang sudah ditentukan. Dan juga karena kurang familiarnya ABK dalam pelaksanaan persiapan proses loading. Sehingga terjadi kelalaian dalam persiapan proses loading.”

b. Apa yang seharusnya dilakukan untuk mencegah keterlambatan yang terjadi saat proses loading?

”Agar proses loading tidak terhambat maka sebaiknya para anak buah kapal harus memperhatikan prosedur pemuatan yang telah dibuat dan para officer harus mampu memberikan pengetahuan dan pelatihan yang baik kepada anak buah kapal.”

4. Masinis 2

   a. Apa yang menjadi hambatan dalam kegiatan loading?

      “ Cargo compressor dikapal ini sudah tidak dapat bekerja secara optimal lagi. Dan akan berpengaruh pada proses loading. Sebenarnya cargo compressor ini dapat diperbaiki dengan mengganti bebrapa suku cadang. Namun membutuhkan waktu yang lama, mungkin dapat dilakukan saat docking.”

   b. Apa yang dilakukan untuk mencegah keterlambatan yang terjadi saat proses loading?

      “untuk masalah kurang optimalnya kerja cargo compressor akan lebih baik jika melakasanakan perbaikan generator pada saat itu juga agar cargo compressor dapat dijalankan kembali, serta melakukan perawatan permesinan dengan teratur. Tetapi untuk perbaikan pada pompa air laut LPG membutuhkan waktu yang cukup lama dan dapat dilaksanakan ketika kapal sudah mengalami off hire contract”

PT. Samudera Indonesia Ship Management

SHIP'S PARTICULAR

NAME OF VESSEL	: GAS NURI ARIZONA
PORT OF REGISTRY	: JAKARTA
CALL SIGN	: P N K R
IMO NUMBER	: 9 1 1 3 9 2 7
OFFICIAL NUMBER	: 2010 Ba. No. 1842/L
TYPE OF VESSEL	: LPG CARRIER (Pressurized)
Class	: ABS
OWNER	: PP.EKANURI INDRA PRATAMA
OPERATOR	: PT. SAMUDERA INDONESIA SHIP MANAGEMENT
TECHNICAL MANAGER	: PT. SAMUDERA INDONESIA SHIP MANAGEMENT
BUILDER	: KITANIHON SHIPBLDG
KEEL LAID	: NOVEMBER 01,1994
LENGTH OVER ALL	: 105 m
LENGTH BETWEEN PERPENDICULAR	: 98 m
BREADTH	: 19.8 m
MAXIMUM HEIGHT FROM KEEL	: 32 m
DEPTH	: 8.6 m
GROSS TONNAGE	: 5,176
NETT TONNAGE	: 1,512
DEADWEIGHT	: 5,589.79 MT
LIGHT SHIP	: 2,924.32 MT
DISPLACEMENT	: 8,514.11 MT
PROPELLER	: 4 BLADE SOLID SHP TYPE NICKLE-ALUMINIUM BRONZE DIA 3,500mm x PITCH 2,350mm
PROPELLER SHAFT	: O.DIA 320mm x LENGTH 4,740mm
MAXIMUM DRAUGHT (Summer)	: 6.014m//6.147m (fw)
FRESH WATER ALLOWANCE	: 133 mm
T.P.C	: 15 MT
CARGO TANK CAPACITY	: TK.1 = 2,505.562 m3 : TK.2 = 2,507.765 m3
TOTAL CAPACITY	: 5,013.327 m3
CARGO PUMP CAPACITY	: 300CBM/hr X 2 Sets
MAIN ENGINE	: AKASAKA DIESEL 6UEC 37 LA : 4,200 PS X 210 RPM / CYL.BORE 370mm STROKE 880mm
TURBO CHARGER	: MHI NAGASAKI SHIPYARD & ENGINE WORKS TYPE : MET – 42SC
DYNAMO ENGINE	: YANMAR DIESEL ENGINE CO.LTD S165L – UN 480 PS x 1,200 RPM x 2 SETS
SERVICE SPEED	: 13 KNOTS
NUMBER OF CREW	: 19 PERSONS (INCLUDING MASTER)
NAVIGATION AREA	: LOCAL AREA

CREW LIST
MT. GAS NURI ARIZONA / PNKR

SHIP'S NAME/CALL SIGN : GAS NURI ARIZONA /PNKR
FLAG/ PORT OF REGISTER : INDONESIA /JAKARTA
GRT /NRT : 5176 / 1512
AGENT : PERTAMINA

PORT : KALBUT
LAST PORT : MAKASSAR
DATE : 03 Februari 2018

NO	NAME	RANK	QUALIFICATION												DATE SIGN ON
			P.K.L	SEAMAN BOOK		CERTIFICATE OF COMPETENCY			ENDORSMENT			BASIC SAFETY TRAINING			
			NUMBER	NUMBER	EXP. DATE	CERT	NO CERTIFICATE	ISSUED	NO of ENSDM	ISSUED	EXPIRE	NUMBER	ISSUED	PLC	
1	ISKRO MUJI WIBOWO	MASTER	PK.308/657/SYB/TPK	E 116582	31.08.19	ANT I	6200082167N10217	21.03.17	6200082167NA0217	21.03.17	21.03.22	6200082167010716	28.10.16	JKT	23.04.17
2	BASUKI RAHMAD	C/OFF	PK. 308/749/SYB/TPK	Y 035850	25.04.18	ANT II	6200406236N20216	03.05.16	6200406236NB0216	04.05.16	04.05.21	6200406236010315	17.02.15	SMG	01.06.17
3	RIZKI DWI ATMOKO	2/OFF	PK.308/952/SYB.TPK	E 059501	03.02.19	ANT II	6200268011N20114	17.12.14	6200268011NB0114	19.12.14	19.12.19	6200268011010116	06.10.16	JKT	25.09.17
4	HARY SURATIN	3/OFF	PK.308/84/SYB.TPK/	A 045990	02.09.19	ANT III	6201329167M30216	03.10.16	6201329167MC0216	04.10.16	04.10.21	6201329167010117	08.03.17	JKT	03.11.17
5	TARIP SARIPUDIN	C/ENG	PK.308/1942/SYB.TPK	F 043458	02.08.20	ATT I	6200062548T10114	30.12.14	6200062548TA0114	05.01.15	05.01.21	6200062548010110	25.01.16	JKT	08.09.17
6	KRISWANTO	2/ENG	PK.308/713/SYB.TPK/	E 04338	22.12.18	ATT III	6200102166S30217	05.05.17	6200102166SC0217	22.05.17	22.05.22	6200102166010714	22.12.14	JKT	16.07.17
7	RUSMANTO	3/ENG	PK.308/1297/SYB/TPK	E 149343	08.02.20	ATT II	6201294544T20115	16.11.15	6201294544TB0115	17.11.15	17.11.20	6201294544010317	24.01.17	SMG	23.04.17
8	ARI SETIAWAN	4/ENG	PK.308/404/SYB/TPK	B 030811	07.01.18	ATT III	6200426103T30216	17.03.16	6200426103T30216	17.03.16	17.03.21	6200426103010116	20.01.16	JKT	03.04.17
9	SUCIPTO	BOSUN	PK.308/752/SYB/TPK	Y 084275	28.10.18	ANT D	6200061411340716	27.06.16				6200061411010116	13.06.16	JKT	27.07.16
10	M. ARFAN	A/B 1	PK.308/1622/SYB.TPK	Y 057568	01.07.18	ANT D	6201311655340710	18.06.16				6201311655010116	27.06.16	JKT	08.09.17
11	NURSAN EFENDI	A/B 2	PK.308/1429/SYB/TPK	E 158737	24.02.18	ANT D	6200036213340716	03.06.16				6200036213010517	16.10.17	SBY	03.11.17
12	HERWAN NARU	A/B	PK.308/1529/SYB.TPK	A 058791	18.07.19	ANT D	6200016631340710	02.06.17				6200016631010117	21.06.17	JKT	31.07.17
13	WAHYU ABDILLAH	OILER 1	PK.308/1430/SYB/TPK	E 097919	11.07.19	ATT D	6200144642420717	13.07.17				6200144642010717	10.07.17	JKT	03.11.17
14	AGUS SUSILO	OILER 2	PK.308/867/SYB/TPK	F 003164	09.03.20	ATT D	6200065735420717	13.05.17				6200065735010717	15.03.17	JKT	18.06.17
15	HERI	OILER 3	PK.308/866/SBY/TPK	C 000918	27.08.18	ATT D	6201026086420217	12.04.17				6201026086010117	16.05.17	JKT	18.06.17
16	BAMBANG TRIYONO	COOK	PK.308/504/SBY/TPK	C 030929	08.12.18	ANTD	6201003273010717	02.08.17				6200269374010116	08.07.16	JKT	15.09.17
17	BANI BENYAMIN SIHITE	APP/D		E 070205	20.03.19	APP/D						6211553040010515	12.08.15	SBY	01.06.17
18	NUR AJI ROHMAN	APP/D		E 018830	22.09.18	APP/D						6211703473010317	31.01.17	SMG	03.11.17
19	KEVIN GEOVANO OROPA	APP/E		E 102580	27.09.19	APP/E						6211561274010116	07.03.16	JKT	07.06.17

NUMBER OF CREW = 19 PERSONS INCLUDING MASTER

Capt. ISKRO MUJI WIBOWO
Master

PT. SAMUDERA INDONESIA SHIP MANAGEMENT
JAKARTA

LIST OF CREW CERTIFICATE
MT.GAS NURI ARIZONA / PNKR

Month of : DECEMBER 2015

NO	NAME	RANK	C.O.C		ENDORS	PASPORT	SEAMAN BOOK	B.S.T	S.C.R.B	A.F.F	M.F.A	MC	RADAR	ARPA	T.F	L.G.T	G.M.D.S.S
			Issued Date	EXP. DATE	Exp. Date	Exp. Date	Exp. Date	Exp. Date	Exp. Date	Exp. Date	Exp. Date	Exp. Date	Exp. Date	Exp. Date	Exp. Date	Exp. Date	Exp. Date
1	MUHYIDIN	MASTER	26/APL/2010	-	31/DEC/2016		27/JAN/2019										
2	VANY OCTORA	CH/OFF	15/JLY/2015	-	15/JLY/2020	12/APL/2019	15/JUN/2017	04/APL/2019	04/APL/2019	25/JAN/2021	25/JAN/2021	25/JAN/2021		25/JAN/2021			
3	MUHARDI	2ND/OFF	23/APL/2012	-	23/APL/2017	26/MRT/2017	03/DEC/2018	13/JNR/2017	14/JNR/2017	18/JNR/2017	10/JNR/2017	20/JNR/2017	19/JNR/2017	21/JNR/2017			
4	SLAMET WAHYUDI AJI	3RD/OFF	03/DEC/2014	-	27/FBR/2020	24/APL/2017	23/APL/2017	12/MRT/2020	12/MRT/2020	12/MRT/2020	12/MRT/2020	12/MRT/2020	12/MRT/2020	12/MRT/2020	12/MRT/2020	-	25/JNI/2020
5	DJONY ROMAINOR	CH/ENG	21/JLY/2005	-	12/DEC/2019	25/JNR/2017	02/APL/2019	01/JNI/2020	01/JNI/2020	01/JNI/2020	01/JNI/2020	01/JNI/2020	-	-	-	-	-
6	USMAN	2ND/ENG	15/JLY/2015	-	15/JLY/2020	12/MRT/2019	26/JNY/2017	03/APL/2019	03/APL/2019	03/APL/2019	20/JNY/2019	03/APL/2019	-	-	REV	27/FBR/2017	-
7	DEDI SETIAWAN	3RD/ENG	21/SPT/2005	-	20/JNR/2020	01/AGT/2017	13/JLY/2017	24/JNI/2018	24/JNI/2018	24/JNI/2018	03/JLY/2018	04/JLY/2018	-	-	18/JNI/2018	15/JLY/2016	-
8	RUSMANTO	4TH/ENG	06/NOV/2013	-	06/NOV/2018	18/AGT/2019	21/APL/2017	08/APL/2018	08/APL/2018	08/APL/2018	08/APL/2018	08/APL/2018	-	-	08/APL/2018	08/JNI/2018	-
9	SUCIPTO	BOATSWAIN	16/JLY/2001	-	-	20/OCT/2016	28/OCT/2016	10/MRT/2019	10/MRT/2019	18/MRT/2019	17/MRT/2019	-	-	-	10/MRT/2019	-	-
10	ROBERT PANJAITAN	A/B	29/AGT/2007	-	-	11/JNR/2018	10-Oct-16	02/JNI/2019	05/SPT/2016	05/SPT/2016	03/MRT/2019	-	-	-	05/SPT/2016	-	-
11	HERWAN NARU	A/B	03/NOV/2001	-	-	12/JAN/2017	18/JLY/2017	14-Jan-18	09/FBR/2020	26/AGT/2018	29/AGT/2018	-	-	-	14/JAN/2018	-	-
12	NAZARUDIN	A/B	29/AGT/2007	-		11/OCT/2017	05/JAN/2019	07/DEC/2020	07/DEC/2020	07/DEC/2020	08/MAY/2019	-	-	-		-	-
13	ADE ADHITIA	E/FOREMAN	28/MAY/2001	-	-	20/JNR/2020	05/FBR/2016	04/MRT/2018	REV	REV	18/SPT/2018	-	-	-	REV	-	-
14	IRNIUS NGNGOTU	OILER	24/JNR/2002	-	-	07/JNR/2018	10/FBR/2017	21/JNR/2016	20/SPT/2018	30/SPT/2018	24/SPT/2018	-	-	-	-	-	-
15	JARKANI LUBIS	OILER	03/NOV/2015	-	-	16-Oct-20	28-Oct-18	10-Nov-20	16-Nov-20	10/SPT/2018	11/SPT/2018	-	-	-	REV	-	-
16	SONY HARSONO	COOK	14/SPT/2003	-	-	23-Oct-20	12/FBR/2017	21/JNI/2018	29/APL/2018	20-May-18	11/AGT/2019	-	-	-	07/APL/2019	-	-
17	GALANG RIDHLO PRAKOSO	STEWARD		-	-	08/DEC/2019	8-Oct-17	02/OCT/017	24/JNR/2019	20/MRT/2019	11/DEC/2018	-	-	-	17/SPT/2018	-	-
18	SATRIA YOGA PRATAMA	D. CADET		-	-	19-May-20	31-Dec-18	28/AGT/2019	-	17-Nov-19	11/JLY/2019	-	15/NOV/2019	14/NOV/2019	-	-	-
19	ARIF KHURNIAWAN	E.CADET		-	-	7-May-20	22/APL/2018	02/FBR/2020	-	02/FBR/2020	02/FBR/2020	01/JLY/2020	-	-	-	-	-

NO	NAME	RANK	S.S.O	B.R.M/E.R.M	E.C.D.I.S	G.O.C	C.T	O.T	SAT	SDSD	BOCT	BLGT	ALGT	YELLOW BOOK	IMDG CODE	E/R SIM	AOT
			Exp. Date	Exp. Date	Exp. Date	Exp. Date	Issued Date	Exp. Date	Exp. Date	Exp. Date	Exp. Date	Exp. Date	Exp. Date	Exp. Date	Exp. Date	Exp. Date	Exp. Date
1	MUHYIDIN	MASTER					-										
2	VANY OCTORA	CH/OFF	01/APL/2019	19-Jun-20	25-Jun-20				-	-	25-Jan-21	25-Jan-21	25-Jan-21	29-Oct-18			25/JAN/2021
3	MUHARDI	2ND/OFF	28/JNR/2017	11/FBR/2017	22/FBR/2018	1-Oct-20			12-May-20	-	24-Oct-20	27-Oct-20	5-Nov-20	03/FBR/2025	22-May-20		04/NOV/2020
4	SLAMET WAHYUDI AJI	3RD/OFF	12/MRT/2020	12/MRT/2020	12/MRT/2020	10/APL/220	-	-	12/MRT/2020	12/MRT/2020	08/APL/2020	08/APL/2020	07/DEC/2020	20-Dec-25	12/MRT/2020		19/JAN/2020
5	DJONY ROMAINOR	CH/ENG	12/SPT/2019	19/DEC/2019	-	-	-	-		-	30/MRT/2020	01/JNI/2020		5-May-24			
6	USMAN	2ND/ENG	24/DEC/2019	08/JNY/2020	-	-	27/FBR/2017	27/FBR/2017		-	19/JAN/2020	26/JNY/2020		22/SPT/2018			
7	DEDI SETIAWAN	3RD/ENG	25/SPT/2019	02/APL/2019	-	-	18/JNI/2018	18/JNI/2018	01/MAY/2018	-	-			24/JNI/2019			
8	RUSMANTO	4TH/ENG	04/FBR/2018	08/FBR/2018	-	-	01/JNI/2018	30/JLY/2017	15/JLY/2018	16/DEC/2018	-			29-Oct-20		31/JNR/2018	
9	SUCIPTO	BOATSWAIN	-	-	-	-	-	-	15/NOV/2018	-	-			iss27/JNR/2006			
10	ROBERT PANJAITAN	A/B	-	-	-	-	-	-	27/SPT/2018	16/JNI/2019	-			iss18/MRT/2006			
11	HERWAN NARU	A/B	-	-	-	-	-	-	22-May-19	12-May-19	-			iss 03/NOV/2008			
12	NAZARUDIN	A/B	-	-	-	-	-	-	2-May-19	12-Jan-20	7-Dec-20						
13	ADE ADHITIA	E/FOREMAN	-	-	-	-	-	-	01/OCT/2018	18/DEC/019	REV			08/SPT/2018			
14	IRNIUS NGNGOTU	OILER	-	-	-	-	-	-	02/MRT/2020	11/FBR/2020	02/MRT/2020			03/MRT/2023			
15	JARKANI LUBIS	OILER	-	-	-	-	-		21-Nov-19	21-Nov-19	30-Oct-20			25-Apr-23			
16	SONY HARSONO	COOK	-	-	-	-	-	-	11/FBR/2019	13/FBR/2020	-						
17	GALANG RIDHLO PRAKOSO	STEWARD	-	-	-	-	-	-	19/SPT/2018	-	-			02/JLY/2025			
18	SATRIA YOGA PRATAMA	D. CADET	04/DEC/2019	-	-	-	-	-	27/NOV/2019	27/NOV/2019	17-Nov-19			20-Dec-25			
19	ARIF KHURNIAWAN	E.CADET	-	-	-	-	-	-	01/JLY/2020	04/MRT/2020	02/FBR/2020	26/JNR/2020		02/JLY/2025			

NO	ACT
	Exp. Date
2	25/JAN2021
6	19/JAN/2020


POLITEKNIK ILMU PELAYARAN
BHINNEKA
EKA
BHAKTI
SAMUDRA
SEMARANG

CREW LIST MT. GAS NURI ARIZONA / PNKR

SHIP'S NAME/CALL SIGN : GAS NURI ARIZONA /PNKR
FLAG/ PORT OF REGISTER : INDONESIA /JAKARTA
GRT /NRT : 5176 / 1512
AGENT : PERTAMINA

PORT : MAKASSAR
LAST PORT : KALBUT
DATE : 09 OKTOBER 2017

No	Nama Asli (Tanpa Disingkat)	Jabatan	No Ijazah (10 Digit Pertama)
1	ISKRO MUJI WIBOWO	Master	6200082167
2	BASUKI RAHMAD	C/OFF	6200406236
3	RIZKI DWI ATMOKO	2/OFF	6200268011
4	CAESAR IRIANO DONA NUGRAHA	3/OFF	6202006417
5	TARIP SARIPUDIN	C/ENG	6200062548
6	KRISWANTO	2/ENG	6200102166
7	RUSMANTO	3/ENG	6201294544
8	ARI SETIAWAN	4/ENG	6200426103
9	SUCIPTO	BOSUN	6200061411
10	MICHAEL ARFAN	A/B 1	6201311655
11	ILHAM	A/B 2	6200060624
12	HERWAN NARU	A/B	6200016631
13	ADE ADHITIA	EF/MAN	6200065750
14	AGUS SUSILO	OILER 1	6200065735
15	HERI	OILER 2	6201026086
16	BAMBANG TRIYONO	COOK	6201003273
17	BANI BENYAMIN SIHITE	APP/D	
18	TOMMY RIZKY WIBOWO	APP/D	
19	KEVIN GEOVANO OROPA	APP/E	

NUMBER OF CREW : 19 PERSONS INCLUDING MASTER

PT. SAMUDERA INDONESIA
LPGC GAS NURI ARIZONA
SHIP MANAGEMENT

Capt. ISKRO MUJI WIBOWO
Master


POLITEKNIK ILMU PELAYARAN
BHINNEKA
EKA
BHAKTI
SAMUDRA
SEMARANG

LAMPIRAN

GAMBAR GAMBAR

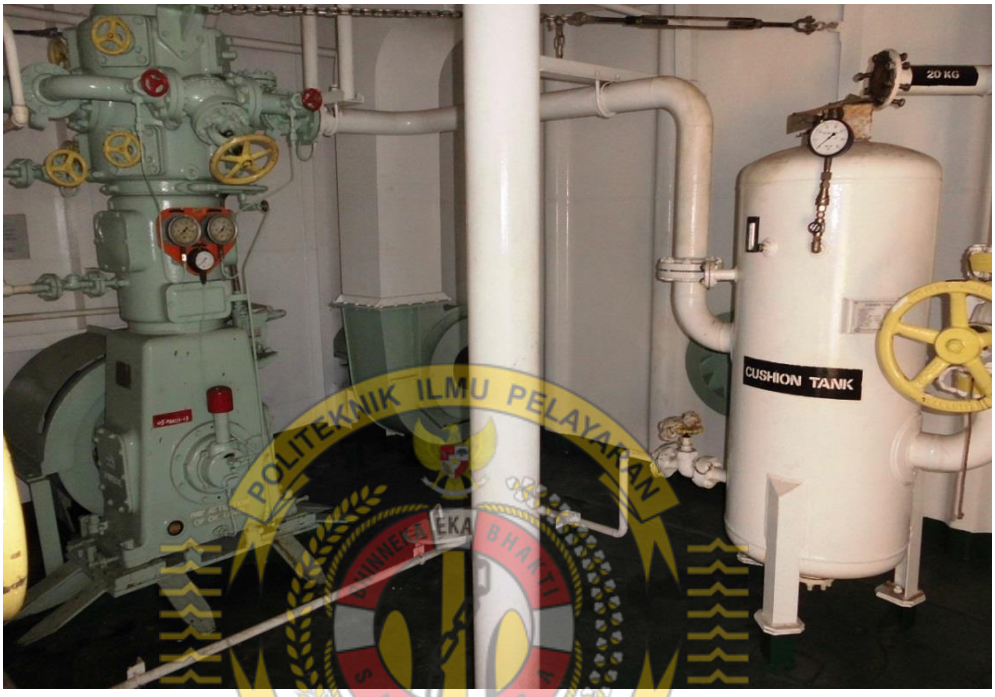
1. Gambar kapal MT. Gas Nuri Arizona

2. Gambar MT. Gas Nuri Arizona Ship to Ship dengan Pertamina Gas 1

3. Gambar *slibtube* pada tanki muatan di MT. Gas Nuri Arizona

4. *Temperature dan Pressure Gauge di MT. Gas Nuri Arizona*

5. Gambar *Cargo Compressor* MT. Gas Nuri Arizona



6. Gambar *Cargo Pump* MT. Gas Nuri Arizonz

7. Gambar Indicator pada *Emergency Shut Down*

8. Gambar *Manifold*

LPG /C GAS NURI ARIZONA

PORT : KALBUT/JATIM
STS VLGC GAS KOMODO
DATE : 25 - April - 2018
VOY : 15/L/2018

CHIEF OFFICER LOADING ORDER

1. We will load LPG Mix with total nomination +/- 2500 MT
2. LPG Mix loaded into Tank no.1 AND Tank NO 2
3. Supervise deck crew on Cargo Hose Connection and Disconnection.
4. Sequence loading liquid to be as follows :
   Start to load liquid into COT No 1 and COT No.2 simultaneously.
5. Commenced Loading with initial rate 100 MT/hr for 1 HRS, and then request to increase till max rate +/- 200 Mt/hr.
6. Sounding / Level both tanks to be equal at all the times
7. Maintained E.S.D pressure 30-40 kg/cm^2 at all the times
8. Give notice to terminal/Loading master 1 hrs, 30 minutes and 15 minutes before completion of loading
9. Cooling down cargo tanks once vapor temp. reach 2º- 45^{0}C or tank pressure 17.5 kg/cm^2
10. Confirm that all safety equipments are ready on deck for immediate use
11. Never leave the deck unattended and keep the ship/shore access clean
12. Always monitor and escort visitors coming onboard (note in visitor log book) following ISPS regulation and also those who are going ashore including crew
13. Fire round and checking mooring lines regularly.
14. Record all activities at port log and hourly log to be maintained
15. Please call C/O one hour before completion and at any times if you are need
16. Think safety work safely

Loading Plan :

COT.NO 1 (Max 93.81 %)			**COT.NO 2** (Max 93.86 %)		
LPG MIX			**LPG MIX**		
Final	:	10.190 Mtr	Final	:	10.205 Mtr
Total Weight	:	1286 MT	Total Weight	:	1280 MT

Follow as with discussed Chief Officer and Loading Master :
- Total load : 2500 MT ROB : 58.818 MT
- Density at 15 C : LPG MIX : 0.5406
- Molecular weight : : 51.10
- Max rate : 230 MT/HRS

Prepared by :

BASUKI RAHMAD	RIZKI DWI ATMOKO	HARY SURATIN
C/Officer	2nd/Off	3rd/Off

LPG/C GAS NURI ARIZONA

HOURLY LOADING RECORD

BUTANE	Initial	To Load	
Dens. 15°C :	0.5408	**0.5751**	
M. W. :	51.11	**58.11**	

PORT : KALBUT
DATE : 25 APRL 2018
STS TO : VLGC GAS KOMODO
Voy : 04/L/2018

TIME			TANK NO. 1						TANK NO. 2								RATE	TO LOAD	E.T.C	MANIFOLD	
		Density M.W	LEVEL (MTR)	TEMP (°C)	PRES (KG/CM2)	VOLUME (K/L)	WEIGHT (M/T)	TOTAL (MT)	LEVEL (MTR)	TEMP (°C)	PRES (KG/CM2)	VOLUME (K/L)	WEIGHT (M/T)	TOTAL (MT)	TOTAL 1 + 2	TOTAL ON BOARD	(M/T)			Press	Temp
INITIAL	L	0.5408	0.00	0.0	5.0	0.000	0.000	*30.415*	0.00	0.0	5.0	0.000	0.000	*30.432*	*0.000*	**60.847**		1250		5.9	6.0
	V	51.11		26.1		2505.562	30.415			26.2		2507.765	30.432		*60.847*						
25/04/18 10:00	L	0.5651	1.60	7.8	5.1	184.381	105.582	*137.077*	1.60	9.0	5.0	183.135	104.931	*135.809*	*210.513*	**272.886**	212.039	1037.961	**25/04/18 14:53**	7.0	4.2
	V	56.07		25.4		2321.181	31.495			26.9		2324.630	30.878		*62.373*						
25/04/18 11:00	L	0.5585	2.42	6.0	5.2	348.784	196.946	*225.639*	2.43	6.3	5.2	349.557	197.188	*225.843*	*394.134*	**451.482**	178.596	859.365	**25/04/18 15:48**	7.0	4.5
	V	54.75		29.0		2156.778	28.693			29.6		2158.208	28.655		*57.348*						
25/04/18 12:00	L	0.5536	3.20	5.3	5.3	532.522	297.063	*323.163*	3.20	5.9	5.3	531.020	297.009	*323.077*	*594.072*	**646.240**	194.758	664.607	**25/04/18 15:24**	7.0	4.1
	V	53.76		30.0		1973.040	26.100			31.0		1976.745	26.068		*52.168*						
25/04/18 13:00	L	0.5494	3.90	5.0	5.4	714.080	395.223	*418.732*	3.90	5.5	5.4	712.582	395.781	*419.296*	*791.004*	**838.028**	191.788	472.819	**25/04/18 15:27**	7.5	4.2
	V	52.89		32.3		1791.482	23.509			32.9		1795.183	23.515		*47.024*						
25/04/18 02:00	L	0.5451	4.50	4.9	5.5	878.667	482.992	*504.198*	4.50	5.3	5.5	877.218	483.446	*504.661*	*966.438*	**1008.859**	170.831	301.988	**25/04/18 03:46**	7.2	4.1
	V	52.03		34.1		1626.895	21.206			34.6		1630.547	21.215		*42.421*						
25/04/18 03:00	L	0.5417	5.25	4.8	5.5	1091.802	594.765	*612.891*	5.26	5.0	5.5	1090.467	594.273	*612.415*	*1189.038*	**1225.306**	216.447	85.541	**25/04/18 03:23**	7.0	5.0
	V	51.34		35.0		1413.760	18.126			35.5		1417.298	18.142		*36.268*						
	L																			7.0	5.0
	V																				
	L																				
	V																				
	L																				
	V																				
	L																				
	V																				
	L																				
	V																				
	L																				
	V																				

Total Load :

Remarks : 09.06lt/02nd Commenced Loading BUTANE
14.54lt/02nd Completed Loading BUTANE

DUTY OFFICER CHIEF OFFICER LOADING MASTER

LPG/C GAS NURI ARIZONA

PROPANE Initial To Load
Dens. 15^{O}C : 0.5751 **0.5060**
M. W. : 58.11 **44.09**

HOURLY LOADING RECORD

Voy : 04/L/2018

PORT : KALBUT
DATE : 25 APRL 2018
STS TO : VLGC GAS KOMODO

TIME			TANK NO. 1						TANK NO. 2								RATE	TO LOAD	E.T.C	MANIFOLD	
		Density M.W	LEVEL (MTR)	TEMP (^{0}C)	PRES (KG/CM2)	VOLUME (K/L)	WEIGHT (M/T)	TOTAL (MT)	LEVEL (MTR)	TEMP (^{0}C)	PRES (KG/CM2)	VOLUME (K/L)	WEIGHT (M/T)	TOTAL (MT)	TOTAL 1 + 2	TOTAL ON BOARD	(M/T)			Press	Temp
INITIAL	L	0.5751	5.25	4.8	5.5	1091.802	639.466	*659.985*	5.26	5.0	5.5	1090.467	638.434	*658.971*	*1277.900*	**1318.956**		1250		6.5	7.0
	V	58.11		35.0		1413.760	20.519			35.5		1417.298	20.537		*41.056*						
02/02/18 16:00	L	0.5651	6.05	7.8	5.7	1323.000	757.590	*775.406*	6.04	7.5	5.7	1318.952	755.718	*773.537*	*1513.308*	**1548.943**	229.987	1020.013	**02/02/18 20:26**	7.2	3.8
	V	56.07		22.1		1182.562	17.816			23.6		1188.813	17.819		*35.635*						
02/02/18 17:00	L	0.5585	6.75	9.0	4.4	1524.022	860.563	*872.741*	6.75	9.0	4.4	1523.074	859.178	*871.404*	*1719.741*	**1744.145**	195.202	824.811	**02/02/18 21:13**	7.0	4.0
	V	54.75		9.3		981.540	12.178			9.1		984.691	12.226		*24.404*						
02/02/18 18:00	L	0.5536	7.40	10.7	4.1	1705.971	951.663	*961.144*	7.40	9.4	4.1	1705.253	953.778	*963.190*	*1905.441*	**1924.334**	180.189	644.622	**02/02/18 21:34**	7.2	4.2
	V	53.76		1.0		799.591	9.481			4.0		802.512	9.412		*18.893*						
02/02/18 19:00	L	0.5494	8.10	10.8	4.3	1892.978	1047.709	*1055.153*	8.10	9.4	4.3	1892.548	1051.155	*1058.547*	*2098.864*	**2113.700**	189.366	455.256	**02/02/18 21:24**	7.2	4.2
	V	52.89		0.3		612.584	7.444			3.4		615.217	7.392		*14.836*						
02/02/18 20:00	L	0.5451	9.04	10.7	4.8	2121.994	1166.433	*1171.387*	9.02	9.2	4.8	2117.468	1166.963	*1171.926*	*2333.396*	**2343.313**	229.613	225.643	**02/02/18 20:58**	7.0	4.0
	V	52.03		3.7		383.568	4.954			8.0		390.297	4.963		*9.917*						
02/02/18 21:00	L	0.5417	10.18	11.7	6.0	2349.458	1279.879	*1282.175*	10.19	11.5	6.0	2351.843	1281.687	*1283.957*	*2561.566*	**2566.132**	222.819	2.824	**02/02/18 21:00**	7.0	5.5
	V	51.34		16.0		156.104	2.296			19.0		155.922	2.270		*4.566*						
	L																				
	V																				
	L																				
	V																				
	L																				
	V																				
	L																				
	V																				
	L																				
	V																				
	L																				
	V																				
	L																				
	V																				

Total Load :

Remarks : 15.06lt/02nd Commenced Loading PROPANE
21.06lt/02nd Completed Loading PROPANE

DUTY OFFICER CHIEF OFFICER LOADING MASTER

POLITEKNIK ILMU PELAYARAN SEMARANG

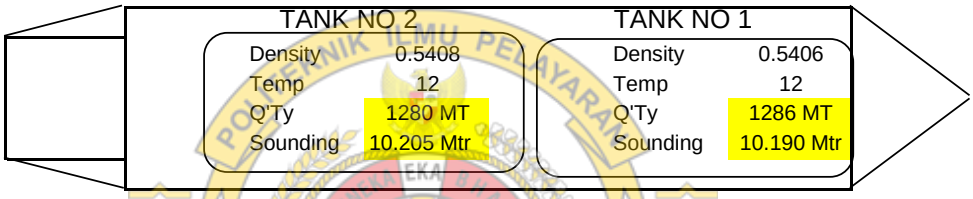
Cargo Loading Plan

NAME OF SHIP : GAS NURI ARIZONA **DATE:** *25 APRIL 2018*

1 . **VOY.NO.** *15/L/2018* 2. LOAD PORT : KALBUT/ JATIM

3 .	**BERTH NAME**	VLGC GAS KOMODO	**8. Bunkering**	**N**
4 .	**CARGO NAME**	**LPG MIX** See stowage plan	**9. Special Requirement**	**N**
			10. Supply	**N**
	QUANTITY	**+/- 2500 MT**		
	S.G. and Temp.	See stowage plan	**11. Inspection**	**N**
5 .	**CARGO TANK**	See stowage plan	**12. Visitor**	**N**
6 .	**ETA /ETD**	25 APRIL 2018 / 26 APRIL 2018		

7 . STOWAGE PROFILE



Arr.Draft A:	*4.60 Mtr*	Arr. Draft F:	*2.00 Mtr*
Dep.Draft A:	*5.80 Mtr*	Dep.Draft F:	*4.20 Mtr*
Stability/Visiblit	***Complied with IMO resolution***	Stability/Visiblity	

13 . CARGO TOPPING/ OPERATION SEQUENCE

- Start loading into both tanks with minimum rate 100 mt/hrs , confirm everthing running well then infor shore to increase loading rate until agreed rate 200 Mt/hrs
- First Load **Butane** into both cargo tanks until stoping level by VLGC GAS KOMODO
- Second load **Propane** into both cargo tanks until level 10.190 mtr stop bay Ship.
- Keep open all vapour return valve (SUCTION)
- Maintain hyd. Press for ESDV : 30 - 40 Kg/cm2
- Always adhere to company and terminal regulation
- Record tank condition and rate on Hourly Loading Rate record, make estimate time for completion.
- Final gauge, see Cargo stop level (separate sheet).

14 . BALLAST OPERATION SEQUENCE/ REMARKS

NO BALLAST OPERATIONS

15 . C/O's special instructions (for : Officer on Duty)

(Cargo reliquefaction procedure/Cargo Tank environmental control/effects of sloshin/Precaution for reactive and self reactive cargos)

- Please inform C/O if tank press reach 17.0 Kg/cm2 or Temp.Min 1º C and max 45º C
- Regularly check F & A mooring lines and fire wire.
- Confirm with Loading master/Mother ship 1 hours before complete loading on VHF Ch. 09 or Ch. 10 & Call me.
- Record any visitor's on board and made regularly safety & security patrol
- Any doubt, call me in advance, have a good watch.

16 . Cargo Information see attached MSDS

Flammability

17 . Protective equipment requirement

stand by at safety store

19. GAS DETECTORS AND TUBE

AT TALLY OFFICE

20 . Action to be taken in event requirement(SPILL)

SEE CARGO DATA SHEET

21 . 1st Aid and Antidot(Onboard Medicine)

YES

22 . Emergency Stop procedure including which system are affected by ESD activation.

EMERGENCY STOP VALVE LOCATED AT NO.1 ,NO 2, TANK DOME,MANIFOLD AND AT BRIDGE

23 . Attachmen (A.To be attached/ C.To be confirmed)

A	Loading Plan with attachment.	Y	C.	SMPEP/ISPS Contact Sheet	Y
A	Stowage Plan	Y	C.	Vistor Information	Y
A	MSDS/ Cargo Information	Y	C.	Passage Plan for Next Port.	Y
A	UKC and Berth regulation	Y	C.	Vetting Information	Y
C	Cleaning Plan	N/A	C.	Drager Tube List	Y
A	Line Diagam	Y	C.	other information	Y
A	Bunkering Plan	N/A	C.	SIGTTO/ICS	Y

24 . Test and Caliblation (LAST DONE)

23.07.2017	LINE PRESSURE TEST(CARGO LINE)					
23.07.2017	CARGO LINE	*23.07.2017*	VAP LINE	N/A	CARGO HOSE	
27.08.2017	PORTABLE GAS DETECTOR	*27.08.2017*	LEVEL	*23.07.2017*	BUNKER	
27.08.2017	FIXED GAS DETECTOR	*27.08.2017*	ESDS	*27.08.2017*	BILGE	
N/A	ACURACY TEST FOR LOADCOM	*27.08.2017*	ALARM TEST			
27.08.2017	PRESSURE GAUGE	*27.08.2017*	PRESSURE			

25 . Aknowledged Signature

2/O, RIZKI DWI ATMOKO

3/O, HARY SURATIN

BSN, SUWANDI SUKARTO

AB A, NURSAN EFENDI

AB B, H NARU

AB C, M. ARFAN

D/CADET, NAUROTUL MUFIDAL HASNA

D/CADET, NUR AJI ROHMAN

Prepared

C/O, BASUKI RAHMAD

Approved

CPT. ISKRO MUJI WIBOWO

				PK	
SHIP/SHORE SAFETY CHECKLIST LOADING				SET	-089
Vessel	:	MT.GAS NURI ARIZONA	Date of Arrival	:	01 FEBRUARY 2018
Berth	:	**STS VLGC GAS KOMODO**	Time of Arrival	:	12.00 LT
Port	:	KALBUT, SITUBONDO	All Fast	:	08.18 LT/02st

INSTRUCTIONS FOR COMPLETION:

The safety of operations requires that all questions should answered affirmatively by clearly ticking (√) the appropriate box. If an affirmatively answer is not possible, the reason should be given and agreement reached upon appropriate precautions to be taken between the ship and the terminal. Where any question is considered to be not applicable, then a note that effect should be inserted in the remarks column.

A box in the column 'ship' and 'terminal' indicates that the party concerned should carry out checks.

The presence of the letters **A**, **P** or **R** in the column 'Code' indicates the following:

A - ('Agreement'). This Indicates an agreement or procedure that should be identified in the 'Remarks' column of the checklist or communicated in some other mutually acceptable form.

P - ('Permission'). In the case of negative answer to the statement coded, 'P', operations should not be conducted without the written permission from the appropriate authority.

R - ('Re-Check'). This indicated items to be re-checked at appropriate intervals, as agreed between both parties, at periods stated in the declaration.

The joint agreement should not be signed until both parties have checked and accepted their assigned responsibilities, at periods stated in the declaration.

PART 'A' – BULK LIQUID GENERAL-PHISYCAL CHECKS

No.	Bulk Liquid - General	Ship	Terminal	Code	Remarks
1.	There is safe access between ship and shore.			R	
2.	The ship is securely moored.			R	
3.	The agreed ship/shore communication system is operative.			A R	System: VHF Ch. 09 Back up
4.	Emergency towing-off pennants are correctly rigged and			R	
5.	The ship's fire hoses and fire fighting equipment is positioned and ready for immediate use.			R	
6.	The terminal's fire fighting equipment is positioned and ready for immediate use.			R	
7.	The ship's cargo and bunker hoses, pipelines and manifolds are in good condition, properly rigged and appropriate for the service intended.				
8.	The terminal's cargo and bunker hoses or arms are in good condition properly rigged and appropriate for				

No.	Bulk Liquid - General	Ship	Terminal	Code	Remarks
	the service intended.				
9.	The cargo transfer system is sufficiently isolated and drained to allow safe removal of blank flanges prior to connection.				
10.	Scuppers and save-alls on board are effectively plugged and drip trays are in positioned and empty.			R	
11.	Temporary removed scupper plugs will be constantly monitored.			R	
12.	Shore spill containment and sumps are correctly managed.			R	
13.	The ship unused cargo and bunker connections are properly secured with blank flanges fully bolted.				
14.	The terminal unused cargo and bunker connections are properly secured with blank flanges fully bolted.				
15.	All cargo, ballast and bunker tank lids are closed.				
16.	Sea and overboard discharges valves, when not in use, are closed and visibly secured.				
17.	All external doors, ports and windows in the accommodations, stores and machinery spaces are closed. Engine room vents may be open.			R	
18.	The ship's emergency fire control plans are located externally.				Location: Poop deck (Port & Stbd)

If the ships is fitted or is required to be fitted with an inert gas system (IGS), the following points should be physically checked.

No.	Inert Gas System	Ship	Terminal	Code	Remarks
19.	Fixed IGS pressure and oxygen content recorders are working.			R	
20.	All cargo tank atmospheres are at positive pressure with oxygen content of 8% or less by volume.			P R	

PART 'B' – BULK LIQUID GENERAL- *Verbal Verification*

No.	Bulk Liquid - General	Ship	Terminal	Code	Remarks
21.	The ship is ready to move under its own power			P R	
22.	There is an effective deck watch in attendance on board and adequate supervision of operations on the ship and in the terminal.			R	
23.	There are sufficient personnel on board and ashore to deal with an emergency.			R	
24.	The procedures of cargo, ballast and bunker handling have been agreed.			A R	

No.	Bulk Liquid - General	Ship	Terminal	Code	Remarks
25.	The emergency signal and shutdown procedure to be used by the ship and shore have been explained and understood.			A	
26.	Material Safety Data Sheet (MSDS) for the cargo transfer have been exchanged where requested.			P R	
27.	The hazards associated with toxic substances in the cargo being handled have been identified and understood.	N/A			H2S Contens : Nil… Benzene Contens : Nil..
28.	An international shore fire connection has been provided.				
29.	The agreed tank venting system will be used.	N/A		A R	
30.	The requirements for closed operations have been agreed.			R	
31.	The operation of the P/V system has been verified.				
32.	Where a vapor return line is connected, operating parameters have been agreed	N/A		A R	
33.	Independent high level alarms, if fitted are operational and have been tested.			A R	
34.	Adequate electrical insulating means are in place in the ship/shore connection.			A R	
35.	Shore lines are fitted with a non return valve, or procedures to avoid back filling have been discussed.			P R	
36.	Smoking rooms have been identified and smoking requirements are being observed.			A R	Mess Room & Office
37.	Naked light regulations are being observed.			A R	
38.	Ship/shore telephones, mobile phones and pager requirements are being observed.			A R	
39.	Hand torches (flashlights) are of an approved.				
40.	Fixed UHF/VHF Transceivers and AIS equipment are on the correct power mode or switched off.			A R	
41.	Portable UHF/VHF transceivers are of an approved type.				
42.	The ship's main radio transmitter aerials are earthed and radars are switched off.				
43.	Electric cables to portable electrical equipment within the hazardous area are disconnected from the power.				
44.	Window type air conditioning units are disconnected.	N/A			
45.	Positive pressure is being maintained inside the accommodation and air conditioning intakes, which may permit to entry of cargo vapors, are closed.				
46.	Measures have been taken to ensure sufficient mechanical ventilation in e pump room.	N/A		R	
47.	There is provision for an emergency escape.				

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No.	Bulk Liquid - General	Ship	Terminal	Code	Remarks
48.	The maximum wind and swell criteria for operations have been agreed.			A	Stop cargo at : 25 Knots Disconnected at : 35 Ks Unberth at : To be agree
49.	Security protocols have been agreed between the Ship Security Officer and Port Facility Security Officer, if appropriate.			A	Present security level: 1 (ONE)
50.	Where appropriate, procedures have been agreed for receiving nitrogen supplied from shore, either for inerting or purging ship's tanks, or for line clearing into the ship.	N/A		A P	

If the ships is fitted or is required to be fitted with an inert gas system (IGS), the following statements should be addressed:

No	Inert Gas System	Ship	Terminal	Code	Remarks
51.	The IGS is fully operational and in good working order			P	
52.	Deck seals, or equivalent, are in good working order			R	
53.	Liquid levels in pressure/vacuum breakers are correct			R	
54.	The fixed are portable oxygen analyzers have been calibrated and are working properly.			R	
55.	All the individual tank IG valves (if fitted) are correctly set and locked.			R	
56.	All personnel in charge of cargo operations are aware that, in case of failure of the inert gas plant, discharge operations should cease and the terminal be advised.				

If the ship is fitted with, or is required to be fitted, with a Crude Oil Washing (COW) system, and intends to crude oil wash, the following statements should be addressed.

No	Crude Oil Washing	Ship	Terminal	Code	Remarks
57.	The pre-arrival COW check-list, as contained in the approved COW manual, has been satisfactorily completed.				
58.	The COW check list for use before, during and after COW, as contained in the approved COW manual, are available and being used.			R	

If the ship is planning to tank clean alongside, the following statements should be addressed.

No	Inert Gas System	Ship	Terminal	Code	Remarks
59.	Tank cleaning operations are planned during the ship's stay alongside the shore installation.	*Yes/No**	*Yes/No**		
60.	If yes, the procedures and approvals for tank cleaning have been agreed.				
61.	Permission has been granted for gas freeing operations.	*Yes/No**	*Yes/No**		

**Delete yes or no as appropriate*

'D' – BULK LIQUID GASES – *Verbal Verification*

No.	Bulk Liquefied Gases	Ship	Terminal	Code	Remarks
1.	Material Safety Data Sheets are available giving the necessary data for the safe handling of the cargo.				Posted at Office
2.	A manufacturer's inhibition certification, where applicable, has been provided.	N/A		P	
3.	The water spray system is ready for immediate use.				
4.	There is sufficient suitable protective equipment (including self-contained breathing apparatus) and protective clothing ready for immediate use.				Safety store
5.	Hold and inter-barrier spaces are properly inerted or filled with dry air, as required.				
6.	All remote control valves are in working order.				
7.	The required cargo pumps and compressors are in good order, and the maximum working pressures have been agreed between ship and shore.			A	Maximum working Pressue : 17 Kg/Cm2
8.	Re-liquefaction or boil-off control equipment is in good order.	N/A			
9.	The gas detection equipment has been properly set for the cargo, is calibrated, has been tested and inspected and in good order.				
10.	Cargo system gauges and alarms are correctly set in and good order.				
11.	Emergency shut down systems have been tested and are working properly.				
12.	Ship and shore have informed each of the closing rate of ESD valves			A	Ship : 25 sec Shore :_____
13	Information has been exchanged between ship and shore on the maximum / minimum temperatures/ pressures of the cargo to be handled.			A	Max Temp : 45 º C Min Temp : 0 º C MARV : 18 Kg / Cm 2
14.	Cargo tanks are protected against inadvertent overfilling at all times while any cargo operations are in progress.				
15.	The compressor room is properly ventilated, the electrical motor room is properly pressurized and the alarm system is working.				
16.	Cargo tank relief valves are set correctly and actual relief valve settings are clearly and visibly displayed. (record setting below) Tank No. 1 : 18 Kg/Cm2 Tank No. 2 : 18 Kg/Cm2 Pipe line : 20 Kg/Cm2				

Declaration:

We the undersigned, have checked the above items in parts A and B, and where appropriate Part C or D, in accordance with the instructions, and have satisfied ourselves that the entries w have made are correct to the best of our knowledge.

We have also make arrangements to carry out repetitive checks as necessary and agreed that those items with code 'R' in the check list should be re-checked at intervals not exceeding _____4_____ hours.

For ship	For shore / DISCH. SHIP
Name : BASUKI RAHMAD	Name:
Rank : Chief Officer	Position:
Signature :	Signature:
Date : 02 FEBRUARY 2018	Date: 02 FEBRUARY 2018
Time : LT	Time:

Record of repetitive checks:

Date:	Time:	Initials for ship:	Initial for shore:

PT. SAMUDERA INDONESIA SHIP MANAGEMENT

SHIP MANAGEMENT – CREW MANAGEMENT – PURCHASING SERVICES – ACCOUNT SERVICES
INSURANCE SERVICES – SHIP INSPECTIONS – MARINE RELATED SERVICES – CONSULTANCY

SHIP to SHIP TRANSFER CHECK LIST

CHECKLIST 1 – PRE FIXTURE INFORMATION (FOR EACH SHIP)
(BETWEEN SHIP OPERATION/CHARTERER AND ORGANISER)

Ship's Operator :	Ship Charterer :	STS Organiser :
PT. SAMUDERA AMANAH TANKER	**PT. PERTAMINA (PERSERO)**	**PERTAMINA REGION - V Kalbut - Situbondo**
Ship's Name : **LPG/C GAS NURI ARIZONA**	Company : **PT SAMUDERA AMANAH TANKER**	
Call Sign/ Inmarsat No : **PNKR / 452503041**	Proposed Date of Transfer : **Dec 26th, 2017**	
IMO Number : **9113927**	Proposed Location : **Kalbut-Situbondo Anchorage**	

	Receiving Ship	Ship Operator's Confirmation	Remarks
1	Current vessel particulars questionnaire (VPQ) data has been exchanged		
2	State the anticipated maximum berthing displacement of the ship		
3	State the anticipated arrival draught and freeboard		F : 2.7 M, A : 5.1 M
4	If the berthing operation is to be conducted underway, confirm that the ship can maintain about five knots for a minimum of two hours		Gas Nuri Arizona as approaching vessel
5	The ship is able to conduct operation in accordance with latest edition of the *Ship to Ship Transfer Guide*		
6	Sufficient manpower will be provided to ensure the safe conduct of operations while minimizing the potential for fatigue		
7	Key vessel personnel can communicate in English, If not, state working language used		Yes, English / Bahasa
8	The ship's manifold arrangement and lifting gear is in accordance with OCIMF or SIGTTO recommendations for the ship type/size		
9	State the maximum and minimum expected height of the cargo manifold from the waterline during the transfer		MAX : 4,23 mtr MIN : 2,58 mtr
10	The SWL and outreach of the ship's lifting equipment is sufficient for intended operation		Port SWL : 3.0 Tons Stbd SWL: 0.9 Tons
11	Where applicable, a copy of the STS operations plan has been exchanged		
12	If not included within the STS operations plan, a general arrangements plan or other similar mooring diagram has been exchanged		
13	The Location and number of enclosed fairleads and mooring bitts fitted on the ship is in accordance with the *Mooring Equipment Guidelines (reference 6)*		
14	The ship is able to deploy all lines or winch drums		
15	Messenger lines of suitable strength will be available at each mooring location		Mooring line From Gas Nuri Arizona, messenger line from mother ship
16	MSDS information has been exchanged for the cargo being transferred and, where applicable, the previous cargo of the receiving ship		
17	Both sides of the ship are clear of any overhanging projections, including bridge wings		
19	State the arrangements of liquid and vapour manifold connections		Liquid connection only

FOR SHIP OPERATOR	
Name : CAPT. ISKRO MUJI WIBOWO	
Rank : MASTER	
Signature : 	Date : 26 December 2017

PT. SAMUDERA INDONESIA SHIP MANAGEMENT

SHIP MANAGEMENT – CREW MANAGEMENT – PURCHASING SERVICES – ACCOUNT SERVICES
INSURANCE SERVICES – SHIP INSPECTIONS – MARINE RELATED SERVICES – CONSULTANCY

SHIP to SHIP TRANSFER CHECK LIST

CHECKLIST 2 – BEFORE OPERATIONS COMMENCE

Discharging Ship's Name : **VLGC PERTAMINA GAS 2**

Receiving Ship's Name : **LPG/C GAS NURI ARIZONA**

Date and Location of Transfer : **December 26th, 2017 / Kalbut - Situbondo STS Anchorage**

		Receiving Ship Checked	Discharging Ship Checked	Remarks
1	A copy of the completed checklist 1 has been received			
2	Personnel will comply with the hours of work and rest requirements of IMO and national regulations as appropriate			
3	Radio communications, including back-up system have been agreed and tested and clocks have been syncronised between the ships			
4	The language of operations has been agreed			Bahasa / English
5	The rendezvous position of the transfer area has been agreed			STS Kalbut - Situbono
6	Information on ship handling characteristics has been exchanged, including details of any critical main engine revolutions and corresponding speed			
7	Approach, maneuvering and mooring plans are understood and confirmed			
8	Mooring procedures have been agreed, including fender positions and number/type of ropes to be provide by each ship			
9	The system and method of electrical isolation between the ship has been agreed			
10	The ship is upright and at suitable trim, without any overhanging projections			
11	Manouvering, Mooring and navigational equipment has been tested and found in good order			
12	Cargo transfer system safety device, including IG and emergency shutdown (ESD) system, share applicable, have been proven operational not more that 48 hours prior the operation			
13	The ship's boilers and tubes have been cleared of soot and it is understood that during STS operations, tubes must not be down			
14	Engineers have been briefed on engine speed (and speed adjustment) requirements		N/A	Vessel at Anchored
15	Weather forecast have been revied for the transfer area and arrangements have been made for their continued receipt throughout the operation			
16	The hose lifting equipment is suitable and ready for use			
17	The cargo transfer hoses/arms have been tested and certified and they are in apparent good condition			
18	The fenders and associated equipment are visually in good order			
19	The crew has been briefed on the mooring procedure			
20	The contingency plan is agreed and appropriate emergency drill has been conducted			
21	Local authorities have been advise of the STS operation			
22	A navigational warning has been broadcast			
23	Monitoring is in place for accommodation, void spaces, pumproom, compressor and motor room as applicable, to detect possible flammables atmospheres			
24	The other ship has been advised that checklist 2 is satisfactory completed			LT

RECEIVING SHIP	DISCHARGING SHIP
Name : **BASUKI RAHMAD**	Name :
Rank : **Chief Officer**	Rank :
Signature : Date : 26 December 2017	Signature : Date : 26 December 2017

PT. SAMUDERA INDONESIA SHIP MANAGEMENT

SHIP MANAGEMENT – CREW MANAGEMENT – PURCHASING SERVICES – ACCOUNT SERVICES
INSURANCE SERVICES – SHIP INSPECTIONS – MARINE RELATED SERVICES – CONSULTANCY

SHIP to SHIP TRANSFER CHECK LIST

CHECKLIST 3 – BEFORE RUN-IN AND MOORING

Discharging Ship's Name : **VLGC PERTAMINA GAS 2**

Receiving Ship's Name : **LPG/C GAS NURI ARIZONA**

Date and Location of Transfer : December 26th, 2017 / Kalbut - Situbondo STS Anchorage

		Receiving Ship Checked	Discharging Ship Checked	Remarks
1	Checklist 2 has been satisfactory completed			
2	Primary tenders are correctly positioned and fender rigging is in order			
3	If required, Secondary fenders are correctly positioned and secured	N/A	N/A	
4	There are no overhanging projections on the side of berthing			
5	A proficient helmsman is at the wheel			
6	Cargo manifold connections are prepared, blanked and marked			
7	Course and speed information has been exchanged and agreed			
8	The method of controlling the ship's adjustment, e.g by changes to revolutions, propeller pitch or by telegraph has been agreed	N/A	N/A	
9	Navigational signal are displayed			
10	Adequate lighting is available for winches and they nare in good order			
11	Power is available for winches and they are in good order			
12	Rope messengers, rope stoppers and heaving lines are ready for use			
13	All mooring lines are ready			
14	Fire axes, or suitable cutting equipment, are in position at the fore and aft mooring stations			
15	Crew are standing by at their mooring stations			
16	Communications are established with mooring personnel and with the other ship			VHF Ch. 09
17	Fire-Fighting and anti-polution equipment is ready for use			
18	Shipping traffic in the area is being monitored			
19	The vessel status has been appropriately set on the authomatic identification system (AIS)			
20	The other has been advised that checklist 3 satisfactory completed			LT

RECEIVING SHIP	DISCHARGING SHIP
Name **: BASUKI RAHMAD**	Name :
Rank **: Chief Officer**	Rank :
Signature : Date : 26 December 2017	Signature : Date : 26 December 2017

PT. SAMUDERA INDONESIA SHIP MANAGEMENT

SHIP MANAGEMENT – CREW MANAGEMENT – PURCHASING SERVICES – ACCOUNT SERVICES
INSURANCE SERVICES – SHIP INSPECTIONS – MARINE RELATED SERVICES – CONSULTANCY

SHIP to SHIP TRANSFER CHECK LIST

CHECKLIST 4 – BEFORE CARGO TRANSFER

Discharging Ship's Name : **VLGC PERTAMINA GAS 2**

Receiving Ship's Name : **LPG/C GAS NURI ARIZONA**

Date and Location of Transfer : December 26th, 2017 / Kalbut - Situbondo STS Anchorage

		Receiving Ship Checked	Discharging Ship Checked	Remarks
1	Checklist 3 has been satisfactory completed			
2	A standard pre-transfer checklist, such as the ISGOTT shp/shore checklist are satisfactory completed			
3	Required regional checklist have been completed			
4	Procedures for the transfer of personnel have been agreed			By personal basket
5	If used, the gangway correctly positioned and well secured			
6	Intership communication system, including back-up, are agreed and tested			VHF Ch : 09
7	Emergency signals and shutdown procedures are agreed			Stop 3X on VHF 09
8	The engine room will be manned as required throughout the transfer and maintened on standby or on short notice of readiness			
9	A bridge watch and / or an anchor watch is established			
10	Officers in charge of the cargo transfer on both ships are identified and etails have been exchanged and posted			
11	A deck watch has been established to pay particular attention to moorings, fenders, hoses, manifold area and overside			Double watch
12	The initial cargo transfer rate has been agreed with the othership			+/- 100 mt/hr
13	The maximum cargo transfer rate is agreed with the othership			+/- 200 mt/hr
14	Arrangements have been made for the regular exchange of information on quantities of cargo transferred			
15	The topping-off rate has been agreed and recorded			+/- 100 mt/hr
16	The procedure for stopping transfer is agrred			1 Hr/30 Min/15 Min/Standby
17	Ballasting and deballasting arrangements are agreed			
18	Cargo hoses are well supported and proctected from chafing and the hose release are is clear of obstructions			
19	Tools required for rapid disconnection are located at the cargo manifold			
20	Messengers are prepared and positioned ready for unmooring in accordance with the unmooring plan			
21	Details of the previous cargo of the receiving ship, including any hazardous or toxic properties. Have been given to the discharging ship			
22	Security information has been exchanged and if required, a Declaration of Security has been completed			
23	The other ship has been advised that checklist 4 is satisfactorily completed			
	Additional for LNG and LPG transfers :			
24	Cool down procedures have been agreed			
25	Vapor differentials and maximum preasure have been agreed			
26	Procedures for increasing / reducing transfer rates have been agreed			
27	Procedures for the control of vapor pressure have agreed			
28	The potential for cargo roll-over has been considered			
29	Where fitted , ESD link or pendant arrangements are in place and tested			
30	The deck watch is aware of the location and activation method of ESD system on deck			
31	Cargo safety and monitoring system are operational			

RECEIVING SHIP	DISCHARGING SHIP
Name : **BASUKI RAHMAD**	Name :
Rank : **Chief Officer**	Rank :
Signature : Date : 26 December 2017	Signature : Date : 26 December 2017

PT. SAMUDERA INDONESIA SHIP MANAGEMENT

SHIP MANAGEMENT – CREW MANAGEMENT – PURCHASING SERVICES – ACCOUNT SERVICES

INSURANCE SERVICES – SHIP INSPECTIONS – MARINE RELATED SERVICES – CONSULTANCY

SHIP to SHIP TRANSFER CHECK LIST

CHECKLIST 5 – BEFORE UNMOORING

Discharging Ship's Name : **VLGC PERTAMINA GAS 2**

Receiving Ship's Name : **LPG/C GAS NURI ARIZONA**

Date and Location of Transfer : December 26th, 2017 / Kalbut - Situbondo STS Anchorage

		Receiving Ship Checked	Discharging Ship Checked	Remarks
1	Cargo hoses are propertly drained prior to hose disconnection			
2	Cargo hoses or manifolds are securely blanked			
3	The transfer side of the ship nis clear or obstructions (including hose lifting equipment)			
4	The method of letting go moorings and separation of ships has been agreed and crew have been briefed on procedures			
5	The fenders , are correctly positioned and secured for departure			
6	Secondary fenders are correctly positioned ad secured for departure	N/A	N/A	
7	Power is available for mooring winches			
8	Rope messengers and rope stoppers are available at all mooring station			
9	Crew are standing by at their stations			
10	Communications are established with mooring personnel and with the other ship			VHF Ch. 09
11	Shipping traffic in the areas is being monitored and very high frequency (VHF) alert has been transmitted			
12	Maneuvering , mooring and navigational equipment has been tested and is ready for departure			
13	Mooring personnel have been instructed to let go only as directed by the Master			
14	Agreement has been reached that Navigational warnings will be cancelled and AIS status update when clear of the other ship			
15	The other ship has been advised that checklist 5 is satisfactorily completed			LT

RECEIVING SHIP	DISCHARGING SHIP
Name **: BASUKI RAHMAD**	Name :
Rank **: Chief Officer**	Rank :
Signature : Date : 26 December 2017	Signature : Date : 26 December 2017

PT. SAMUDERA INDONESIA SHIP MANAGEMENT

SHIP MANAGEMENT – CREW MANAGEMENT – PURCHASING SERVICES – ACCOUNT SERVICES
INSURANCE SERVICES – SHIP INSPECTIONS – MARINE RELATED SERVICES – CONSULTANCY

SHIP to SHIP TRANSFER CHECK LIST

CHECKLIST 6 – PRE TRANSFER CARGO

Discharging Ship's Name : **VLGC PERTAMINA GAS 2**

Receiving Ship's Name : **LPG/C GAS NURI ARIZONA**

Date and Location of Transfer : December 26th, 2017 / Kalbut - Situbondo STS Anchorage

		Receiving Ship Checked	Discharging Ship Checked	Terminal Checked
1	A standard pre-transfer checklist , such as the ISGOTT ship/shore safety checklist or equivalent, has been satisfactorily completed and arrangements have been made for respective check during the transfer			
2	Required regional checklist have been completed			
3	Written permission for cargo operations to take place are available to all responsible persons			
4	The formal risk assement has been communicated by the transfer organiser and reviewed by involved parties			
5	The general contingency plan for the cargo transfer operation has been communicated by the transfer organiser and reviewed by involved parties			
6	Security information has been exchanged and , if required , a Declaration of Security has been completed			
7	Suitable fenders are rigged correctly to prevent contact of the vessels			
8	Fire axes or suitable cutting equipment are in place at the fore and aft mooring stations			
9	Present and forecast weather and sea conditions have been considered			
10	A means of access in place to allow personnel to safetly transit between the vessels			
11	Cargo specifications and any requirements for inerting , heating, reactivity and inhibitors have been exchanged	N/A	N/A	N/A
12	The cargo transfer operation is to be completed under closed conditions			
13	Where applicable , procedures for vapour control/balancing have been agreed			
14	All cargo monitoring systems, including level gauges and alarms, have been tested and are operational			
15	Where necessary , permission for thank cleaning have been obtaibned and procedures are in place	N/A	N/A	N/A
16	Access to the cargo deck is restricted and controlled during cargo transfer operations			
17	All personnel enganged in the cargo operations are provided with appropriate PPE including , where necessary , personal gas detectors/monitors			
18	Cargo hoses have been pressure tested within prescribed period and documentation is available on board			
19	The construction and material of the cargo hoses is suitable for the temperature and nature of the product(s)			
20	Where electrically continous hoses are used ,the hoses are connected into the vessel with the insulated flange before being passee to the other vessel for			
21	The cargo hose string is of adequate length and properly supported			
22	The cargo hose string is of accordance with the cargo operation plan			
23	Spill response equipment is on station and ready for immediate development			
24	Where applicable , fire-fighting provision has been made for unmanned barges			
25	Spaces to be routinely monitored for any build-up of flammable and/or toxic vapor have been identified			

	Signature	Name
Officer in Charge Receiving Ship		BASUKI RAHMAD
Officer in Charge Discharging Ship		
Terminal / LOADING MASTER		

STS Superintendent		

PT. SAMUDERA INDONESIA SHIP MANAGEMENT

SHIP MANAGEMENT – CREW MANAGEMENT – PURCHASING SERVICES – ACCOUNT SERVICES
INSURANCE SERVICES – SHIP INSPECTIONS – MARINE RELATED SERVICES – CONSULTANCY

SHIP to SHIP TRANSFER CHECK LIST

CHECKLIST 6A – DURING TRANSFER CARGO

Discharging Ship's Name : **VLGC PERTTAMINA GAS 2**

Receiving Ship's Name : **LPG/C GAS NURI ARIZONA**

Date and Location of Transfer : December 26th, 2017 / Kalbut - Situbondo STS Anchorage

		Repetitive Check 1	Repetitive Check 2	Repetitive Check 3
1	Present weather and sea conditions are within the agreed limits			
2	Personnel engaged in the cargo transfer operation are wearing appropriate PPE			
3	Cargo hose strings manifold connections and cargo systems are free of any leakage			
4	Cargo hoses are properly supported, taking into account changing freeboards and any movement between the vessels			
5	All cargo monitoring system, including level gauges, high level alarms, pressure gauges and alarm, are functioning correctly			
6	The cargo transfer operation is continuing under closed conditions			
7	The sea surface around the vessel is periodically visually checked for any sign of pollution			
8	All identified spaces are being routinely monitored for any build-up of flammable and for toxic vapour			
9	All mooring lines are correctly tensioned and managed during the cargo transfer operation			
10	Where rigged in accordance with local requirements, emergency towing-off pennants are adjusted throughout the cargo transfer operation	N/A	N/A	N/A
11	On completion of cargo transfer to or from a tank, the tank is secured			
12	Level in all cargo and ballast tanks, including those not being worked are routinely monitored			
Checked by Ch. Officer : BASUKI RAHMAD				
Date and time : 26 December 2017				

POLITEKNIK ILMU PELAYARAN SEMARANG

PT. SAMUDERA INDONESIA SHIP MANAGEMENT

SHIP MANAGEMENT – CREW MANAGEMENT – PURCHASING SERVICES – ACCOUNT SERVICES
INSURANCE SERVICES – SHIP INSPECTIONS – MARINE RELATED SERVICES – CONSULTANCY

SHIP to SHIP TRANSFER CHECK LIST

CHECKLIST 1 – PRE FIXTURE INFORMATION (FOR EACH SHIP)
(BETWEEN SHIP OPERATION/CHARTERER AND ORGANISER)

Ship's Operator : **PT. SAMUDERA AMANAH TANKER**	Ship Charterer : **PT. PERTAMINA (PERSERO)**	STS Organiser **PERTAMINA - Situbondo**
Ship's Name : **LPG/C GAS NURI ARIZONA**	Company : **PT SAMUDERA AMANAH**	
Call Sign/ Inmarsat No : **PNKR / 452503041**	Proposed Date of Transfer :**February**	
IMO Number : **9113927**	Proposed Location : **Kalbut-Situbondo A**	

	Receiving Ship	**Ship Operator's Confirmation**	**Re**
1	Current vessel particulars questionnaire (VPQ) data has been exchanged		
2	State the anticipated maximum berthing displacement of the ship		
3	State the anticipated arrival draught and freeboard		F : 2.6
4	If the berthing operation is to be conducted underway, confirm that the ship can maintain about five knots for a minimum of two hours		Gas Nuri Ariz
5	The ship is able to conduct operation in accordance with latest edition of the *Ship to Ship Transfer Guide*		
6	Sufficient manpower will be provided to ensure the safe conduct of operations while minimizing the potential for fatigue		
7	Key vessel personnel can communicate in English, If not, state working language used		Yes, En
8	The ship's manifold arrangement and lifting gear is in accordance with OCIMF or SIGTTO recommendations for the ship type/size		
9	State the maximum and minimum expected height of the cargo manifold from the waterline during the transfer		MAX : 4,23 mt 2
10	The SWL and outreach of the ship's lifting equipment is sufficient for intended operation		Port SWL : 3.0 SWL
11	Where applicable, a copy of the STS operations plan has been exchanged		
12	If not included within the STS operations plan, a general arrangements plan or other similar mooring diagram has been exchanged		
13	The Location and number of enclosed fairleads and mooring bitts fitted on the ship is in accordance with the *Mooring Equipment Guidelines (reference 6)*		
14	The ship is able to deploy all lines or winch drums		
15	Messenger lines of suitable strength will be available at each mooring location		Mooring lir Arizona, me mo
16	MSDS information has been exchanged for the cargo being transferred and, where applicable, the previous cargo of the receiving ship		
17	Both sides of the ship are clear of any overhanging projections, including bridge wings		
19	State the arrangements of liquid and vapour manifold connections		Liquid c

FOR SHIP OPERATOR	
Name : CAPT. ISKRO MUJI WIBOWO	
Rank : MASTER	
Signature : 	Date : 02 February 2018

PT. SAMUDERA INDONESIA SHIP MANAGEMENT

SHIP MANAGEMENT – CREW MANAGEMENT – PURCHASING SERVICES – ACCOUNT SERVICES
INSURANCE SERVICES – SHIP INSPECTIONS – MARINE RELATED SERVICES – CONSULTANCY

SHIP to SHIP TRANSFER CHECK LIST

CHECKLIST 2 – BEFORE OPERATIONS COMMENCE

Discharging Ship's Name : **VLGC GAS KOMODO**

Receiving Ship's Name : **LPG/C GAS NURI ARIZONA**

Date and Location of Transfer : **February 02nd, 2018 / Kalbut - Situbondo STS Anchorage**

		Receiving Ship Checked	Discharging Ship Checked
1	A copy of the completed checklist 1 has been received		
2	Personnel will comply with the hours of work and rest requirements of IMO and national regulations as appropriate		
3	Radio communications, including back-up system have been agreed and tested and clocks have been syncronised between the ships		
4	The language of operations has been agreed		
5	The rendezvous position of the transfer area has been agreed		
6	Information on ship handling characteristics has been exchanged, including details of any critical main engine revolutions and corresponding speed		
7	Approach, maneuvering and mooring plans are understood and confirmed		
8	Mooring procedures have been agreed, including fender positions and number/type of ropes to be provide by each ship		
9	The system and method of electrical isolation between the ship has been agreed		
10	The ship is upright and at suitable trim, without any overhanging projections		
11	Manouvering, Mooring and navigational equipment has been tested and found in good order		
12	Cargo transfer system safety device, including IG and emergency shutdown (ESD) system, share applicable, have been proven operational not more that 48 hours prior the operation		
13	The ship's boilers and tubes have been cleared of soot and it is understood that during STS operations, tubes must not be down		
14	Engineers have been briefed on engine speed (and speed adjustment) requirements		N/A
15	Weather forecast have been revied for the transfer area and arrangements have been made for their continued receipt throughout the operation		
16	The hose lifting equipment is suitable and ready for use		
17	The cargo transfer hoses/arms have been tested and certified and they are in apparent good condition		
18	The fenders and associated equipment are visually in good order		
19	The crew has been briefed on the mooring procedure		
20	The contingency plan is agreed and appropriate emergency drill has been conducted		
21	Local authorities have been advise of the STS operation		
22	A navigational warning has been broadcast		
23	Monitoring is in place for accommodation, void spaces, pumproom, compressor and motor room as applicable, to detect possible flammables atmospheres		
24	The other ship has been advised that checklist 2 is satisfactory completed		

RECEIVING SHIP	DISCHARGING SHIP
Name : **BASUKI RAHMAD**	Name :
Rank : **Chief Officer**	Rank :
Signature : Date : 02 February 2018	Signature : Date : 02 Febr

PT. SAMUDERA INDONESIA SHIP MANAGEMENT

SHIP MANAGEMENT – CREW MANAGEMENT – PURCHASING SERVICES – ACCOUNT SERVICES
INSURANCE SERVICES – SHIP INSPECTIONS – MARINE RELATED SERVICES – CONSULTANCY

SHIP to SHIP TRANSFER CHECK LIST

CHECKLIST 3 – BEFORE RUN-IN AND MOORING

Discharging Ship's Name : **VLGC GAS KOMODO**

Receiving Ship's Name : **LPG/C GAS NURI ARIZONA**

Date and Location of Transfer : February 02nd, 2018 / Kalbut - Situbondo STS Anchorage

		Receiving Ship Checked	Discharging Ship Checked
1	Checklist 2 has been satisfactory completed		
2	Primary tenders are correctly positioned and fender rigging is in order		
3	If required, Secondary fenders are correctly positioned and secured	N/A	N/A
4	There are no overhanging projections on the side of berthing		
5	A proficient helmsman is at the wheel		
6	Cargo manifold connections are prepared, blanked and marked		
7	Course and speed information has been exchanged and agreed		
8	The method of controlling the ship's adjustment, e.g by changes to revolutions, propeller pitch or by telegraph has been agreed	N/A	N/A
9	Navigational signal are displayed		
10	Adequate lighting is available for winches and they nare in good order		
11	Power is available for winches and they are in good order		
12	Rope messengers, rope stoppers and heaving lines are ready for use		
13	All mooring lines are ready		
14	Fire axes, or suitable cutting equipment, are in position at the fore and aft mooring stations		
15	Crew are standing by at their mooring stations		
16	Communications are established with mooring personnel and with the other ship		
17	Fire-Fighting and anti-polution equipment is ready for use		
18	Shipping traffic in the area is being monitored		
19	The vessel status has been appropriately set on the authomatic identification system (AIS)		
20	The other has been advised that checklist 3 satisfactory completed		

RECEIVING SHIP	DISCHARGING SHIP
Name : **BASUKI RAHMAD**	Name :
Rank : **Chief Officer**	Rank :
Signature : Date : 02 February 2018	Signature : Date : 02 Febr

PT. SAMUDERA INDONESIA SHIP MANAGEMENT

SHIP MANAGEMENT – CREW MANAGEMENT – PURCHASING SERVICES – ACCOUNT SERVICES
INSURANCE SERVICES – SHIP INSPECTIONS – MARINE RELATED SERVICES – CONSULTANCY

SHIP to SHIP TRANSFER CHECK LIST

CHECKLIST 4 – BEFORE CARGO TRANSFER

Discharging Ship's Name : **VLGC GAS KOMODO**

Receiving Ship's Name : **LPG/C GAS NURI ARIZONA**

Date and Location of Transfer : February 02nd, 2018 / Kalbut - Situbondo STS Anchorage

		Receiving Ship Checked	Discharging Ship Checked
1	Checklist 3 has been satisfactory completed		
2	A standard pre-transfer checklist, such as the ISGOTT shp/shore checklist are satisfactory completed		
3	Required regional checklist have been completed		
4	Procedures for the transfer of personnel have been agreed		
5	If used, the gangway correctly positioned and well secured		
6	Intership communication system, including back-up, are agreed and tested		
7	Emergency signals and shutdown procedures are agreed		
8	The engine room will be manned as required throughout the transfer and maintened on standby or on short notice of readiness		
9	A bridge watch and / or an anchor watch is established		
10	Officers in charge of the cargo transfer on both ships are identified and etails have been exchanged and posted		
11	A deck watch has been established to pay particular attention to moorings, fenders, hoses, manifold area and overside		
12	The initial cargo transfer rate has been agreed with the othership		
13	The maximum cargo transfer rate is agreed with the othership		
14	Arrangements have been made for the regular exchange of information on quantities of cargo transferred		
15	The topping-off rate has been agreed and recorded		
16	The procedure for stopping transfer is agrred		
17	Ballasting and deballasting arrangements are agreed		
18	Cargo hoses are well supported and proctected from chafing and the hose release are is clear of obstructions		
19	Tools required for rapid disconnection are located at the cargo manifold		
20	Messengers are prepared and positioned ready for unmooring in accordance with the unmooring plan		
21	Details of the previous cargo of the receiving ship, including any hazardous or toxic properties. Have been given to the discharging ship		
22	Security information has been exchanged and if required, a Declaration of Security has been completed		
23	The other ship has been advised that checklist 4 is satisfactorily completed		
	Additional for LNG and LPG transfers :		
24	Cool down procedures have been agreed		
25	Vapor differentials and maximum preasure have been agreed		
26	Procedures for increasing / reducing transfer rates have been agreed		
27	Procedures for the control of vapor pressure have agreed		
28	The potential for cargo roll-over has been considered		
29	Where fitted , ESD link or pendant arrangements are in place and tested		
30	The deck watch is aware of the location and activation method of ESD system on deck		
31	Cargo safety and monitoring system are operational		

RECEIVING SHIP	DISCHARGING SHIP
Name : **BASUKI RAHMAD**	Name :
Rank : **Chief Officer**	Rank :
Signature : Date : 02 February 2018	Signature : Date : 02 Febr

PT. SAMUDERA INDONESIA SHIP MANAGEMENT

SHIP MANAGEMENT – CREW MANAGEMENT – PURCHASING SERVICES – ACCOUNT SERVICES

INSURANCE SERVICES – SHIP INSPECTIONS – MARINE RELATED SERVICES – CONSULTANCY

SHIP to SHIP TRANSFER CHECK LIST

CHECKLIST 5 – BEFORE UNMOORING

Discharging Ship's Name : **VLGC GAS KOMODO**

Receiving Ship's Name : **LPG/C GAS NURI ARIZONA**

Date and Location of Transfer : February 02nd, 2018 / Kalbut - Situbondo STS Anchorage

		Receiving Ship Checked	Discharging Ship Checked
1	Cargo hoses are propertly drained prior to hose disconnection		
2	Cargo hoses or manifolds are securely blanked		
3	The transfer side of the ship nis clear or obstructions (including hose lifting equipment)		
4	The method of letting go moorings and separation of ships has been agreed and crew have been briefed on procedures		
5	The fenders , are correctly positioned and secured for departure		
6	Secondary fenders are correctly positioned ad secured for departure	N/A	N/A
7	Power is available for mooring winches		
8	Rope messengers and rope stoppers are available at all mooring station		
9	Crew are standing by at their stations		
10	Communications are established with mooring personnel and with the other ship		
11	Shipping traffic in the areas is being monitored and very high frequency (VHF) alert has been transmitted		
12	Maneuvering , mooring and navigational equipment has been tested and is ready for departure		
13	Mooring personnel have been instructed to let go only as directed by the Master		
14	Agreement has been reached that Navigational warnings will be cancelled and AIS status update when clear of the other ship		
15	The other ship has been advised that checklist 5 is satisfactorily completed		

RECEIVING SHIP	DISCHARGING SHIP
Name **: BASUKI RAHMAD**	Name :
Rank **: Chief Officer**	Rank :
Signature : Date : 02 February 2018	Signature : Date : 02 Febr

PT. SAMUDERA INDONESIA SHIP MANAGEMENT

SHIP MANAGEMENT – CREW MANAGEMENT – PURCHASING SERVICES – ACCOUNT SERVICES
INSURANCE SERVICES – SHIP INSPECTIONS – MARINE RELATED SERVICES – CONSULTANCY

SHIP to SHIP TRANSFER CHECK LIST

CHECKLIST 6 – PRE TRANSFER CARGO

Discharging Ship's Name : **VLGC GAS KOMODO**

Receiving Ship's Name : **LPG/C GAS NURI ARIZONA**

Date and Location of Transfer : February 02nd, 2018 / Kalbut - Situbondo STS Anchorage

		Receiving Ship Checked	Discharging Ship Checked
1	A standard pre-transfer checklist , such as the ISGOTT ship/shore safety checklist or equivalent, has been satisfactorily completed and arrangements have been made for respective check during the transfer		
2	Required regional checklist have been completed		
3	Written permission for cargo operations to take place are available to all responsible persons		
4	The formal risk assement has been communicated by the transfer organiser and reviewed by involved parties		
5	The general contingency plan for the cargo transfer operation has been communicated by the transfer organiser and reviewed by involved parties		
6	Security information has been exchanged and , if required , a Declaration of Security has been completed		
7	Suitable fenders are rigged correctly to prevent contact of the vessels		
8	Fire axes or suitable cutting equipment are in place at the fore and aft mooring stations		
9	Present and forecast weather and sea conditions have been considered		
10	A means of access in place to allow personnel to safetly transit between the vessels		
11	Cargo specifications and any requirements for inerting , heating, reactivity and inhibitors have been exchanged	N/A	N/A
12	The cargo transfer operation is to be completed under closed conditions		
13	Where applicable , procedures for vapour control/balancing have been agreed		
14	All cargo monitoring systems, including level gauges and alarms, have been tested and are operational		
15	Where necessary , permission for thank cleaning have been obtaibned and procedures are in place	N/A	N/A
16	Access to the cargo deck is restricted and controlled during cargo transfer operations		
17	All personnel enganged in the cargo operations are provided with appropriate PPE including , where necessary , personal gas detectors/monitors		
18	Cargo hoses have been pressure tested within prescribed period and documentation is available on board		
19	The construction and material of the cargo hoses is suitable for the temperature and nature of the product(s)		
20	Where electrically continous hoses are used ,the hoses are connected into the vessel with the insulated flange before being passee to the other vessel for		
21	The cargo hose string is of adequate length and properly supported		
22	The cargo hose string is of accordance with the cargo operation plan		
23	Spill response equipment is on station and ready for immediate development		
24	Where applicable , fire-fighting provision has been made for unmanned barges		
25	Spaces to be routinely monitored for any build-up of flammable and/or toxic vapor have been identified		

	Signature	
Officer in Charge Receiving Ship		BASU
Officer in Charge Discharging Ship		
Terminal		

STS Superintendent		

PT. SAMUDERA INDONESIA SHIP MANAGEMENT

SHIP MANAGEMENT – CREW MANAGEMENT – PURCHASING SERVICES – ACCOUNT SERVICES
INSURANCE SERVICES – SHIP INSPECTIONS – MARINE RELATED SERVICES – CONSULTANCY

SHIP to SHIP TRANSFER CHECK LIST

CHECKLIST 6A – DURING TRANSFER CARGO

Discharging Ship's Name : **VLGC GAS KOMODO**

Receiving Ship's Name : **LPG/C GAS NURI ARIZONA**

Date and Location of Transfer : February 02nd, 2018 / Kalbut - Situbondo STS Anchorage

		Repetitive Check 1	Repetitive Check 2
1	Present weather and sea conditions are within the agreed limits		
2	Personnel engaged in the cargo transfer operation are wearing appropriate PPE		
3	Cargo hose strings manifold connections and cargo systems are free of any leakage		
4	Cargo hoses are properly supported, taking into account changing freeboards and any movement between the vessels		
5	All cargo monitoring system, including level gauges, high level alarms, pressure gauges and alarm, are functioning correctly		
6	The cargo transfer operation is continuing under closed conditions		
7	The sea surface around the vessel is periodically visually checked for any sign of pollution		
8	All identified spaces are being routinely monitored for any build-up of flammable and for toxic vapour		
9	All mooring lines are correctly tensioned and managed during the cargo transfer operation		
10	Where rigged in accordance with local requirements, emergency towing-off pennants are adjusted throughout the cargo transfer operation	N/A	N/A
11	On completion of cargo transfer to or from a tank, the tank is secured		
12	Level in all cargo and ballast tanks, including those not being worked are routinely monitored		
Checked by Ch. Officer : BASUKI RAHMAD			
Date and time : 02 FEBRUARY 2018			

POLITEKNIK ILMU PELAYARAN SEMARANG

:
REGION - V Kalbut
l TANKER
02nd, 2018
nchorage

emarks
M, A : 5.0 M
ona as approaching vessel
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r MIN : ,58 mtr
) Tons Stbd .: 0.9 Tons
ne From Gas Nuri ssenger line from other ship
onnection only

Remarks
Bahasa / English
STS Kalbut - Situbono
Vessel at Anchored
07.24 LT

uary 2018

Remarks
VHF Ch. 09
07.30 LT

uary 2018

Remarks
By personal basket
VHF Ch : 09
Stop 3X on VHF 09 ,
Double watch
+/- 100 mt/hr
+/- 200 mt/hr
+/- 100 mt/hr
1 Hr/30 Min/15 Min/Standby
08.54 LT

uary 2018

Remarks
VHF Ch. 09
LT

uary 2018

Terminal Checked
N/A
N/A

Name
KI RAHMAD

Repetitive Check 3
N/A

PT. SAMUDERA INDONESIA SHIP MANAGEMENT

SHIP MANAGEMENT – CREW MANAGEMENT – PURCHASING SERVICES – ACCOUNT SERVICES
INSURANCE SERVICES – SHIP INSPECTIONS – MARINE RELATED SERVICES – CONSULTANCY

SHIP to SHIP TRANSFER CHECK LIST

CHECKLIST 1 – PRE FIXTURE INFORMATION (FOR EACH SHIP)
(BETWEEN SHIP OPERATION/CHARTERER AND ORGANISER)

Ship's Operator :	Ship Charterer :	STS Organiser :
PT. SAMUDERA AMANAH TANKER	**PT. PERTAMINA (PERSERO)**	**PERTAMINA REGION - V Kalbut - Situbondo**
Ship's Name : **LPG/C GAS NURI ARIZONA**	Company : **PT SAMUDERA AMANAH TANKER**	
Call Sign/ Inmarsat No : **PNKR / 452503041**	Proposed Date of Transfer : **October 06th, 2017**	
IMO Number : **9113927**	Proposed Location : **Kalbut-Situbondo Anchorage**	

	Receiving Ship	Ship Operator's Confirmation	Remarks
1	Current vessel particulars questionnaire (VPQ) data has been exchanged		
2	State the anticipated maximum berthing displacement of the ship		
3	State the anticipated arrival draught and freeboard		F : 3.0 M, A : 4.9 M
4	If the berthing operation is to be conducted underway, confirm that the ship can maintain about five knots for a minimum of two hours		Gas Nuri Arizona as approaching vessel
5	The ship is able to conduct operation in accordance with latest edition of the *Ship to Ship Transfer Guide*		
6	Sufficient manpower will be provided to ensure the safe conduct of operations while minimizing the potential for fatigue		
7	Key vessel personnel can communicate in English, If not, state working language used		Yes, English / Bahasa
8	The ship's manifold arrangement and lifting gear is in accordance with OCIMF or SIGTTO recommendations for the ship type/size		
9	State the maximum and minimum expected height of the cargo manifold from the waterline during the transfer		MAX : 4,23 mtr MIN : 2,58 mtr
10	The SWL and outreach of the ship's lifting equipment is sufficient for intended operation		Port SWL : 3.0 Tons Stbd SWL: 0.9 Tons
11	Where applicable, a copy of the STS operations plan has been exchanged		
12	If not included within the STS operations plan, a general arrangements plan or other similar mooring diagram has been exchanged		
13	The Location and number of enclosed fairleads and mooring bitts fitted on the ship is in accordance with the *Mooring Equipment Guidelines (reference 6)*		
14	The ship is able to deploy all lines or winch drums		
15	Messenger lines of suitable strength will be available at each mooring location		Mooring line From Gas Nuri Arizona, messenger line from mother ship
16	MSDS information has been exchanged for the cargo being transferred and, where applicable, the previous cargo of the receiving ship		
17	Both sides of the ship are clear of any overhanging projections, including bridge wings		
19	State the arrangements of liquid and vapour manifold connections		Liquid connection only

FOR SHIP OPERATOR	
Name : CAPT. ISKRO MUJI WIBOWO	
Rank : MASTER	
Signature : 	Date : 05 October 2017

PT. SAMUDERA INDONESIA SHIP MANAGEMENT

SHIP MANAGEMENT – CREW MANAGEMENT – PURCHASING SERVICES – ACCOUNT SERVICES
INSURANCE SERVICES – SHIP INSPECTIONS – MARINE RELATED SERVICES – CONSULTANCY

SHIP to SHIP TRANSFER CHECK LIST

CHECKLIST 2 – BEFORE OPERATIONS COMMENCE

Discharging Ship's Name : **VLGC PERTAMINA GAS 1**

Receiving Ship's Name : **LPG/C GAS NURI ARIZONA**

Date and Location of Transfer : **October 06th, 2017 / Kalbut - Situbondo STS Anchorage**

		Receiving Ship Checked	Discharging Ship Checked	Remarks
1	A copy of the completed checklist 1 has been received			
2	Personnel will comply with the hours of work and rest requirements of IMO and national regulations as appropriate			
3	Radio communications, including back-up system have been agreed and tested and clocks have been syncronised between the ships			
4	The language of operations has been agreed			Bahasa / English
5	The rendezvous position of the transfer area has been agreed			STS Kalbut - Situbono
6	Information on ship handling characteristics has been exchanged, including details of any critical main engine revolutions and corresponding speed			
7	Approach, maneuvering and mooring plans are understood and confirmed			
8	Mooring procedures have been agreed, including fender positions and number/type of ropes to be provide by each ship			
9	The system and method of electrical isolation between the ship has been agreed			
10	The ship is upright and at suitable trim, without any overhanging projections			
11	Manouvering, Mooring and navigational equipment has been tested and found in good order			
12	Cargo transfer system safety device, including IG and emergency shutdown (ESD) system, share applicable, have been proven operational not more that 48 hours prior the operation			
13	The ship's boilers and tubes have been cleared of soot and it is understood that during STS operations, tubes must not be down			
14	Engineers have been briefed on engine speed (and speed adjustment) requirements		N/A	Vessel at Anchored
15	Weather forecast have been revied for the transfer area and arrangements have been made for their continued receipt throughout the operation			
16	The hose lifting equipment is suitable and ready for use			
17	The cargo transfer hoses/arms have been tested and certified and they are in apparent good condition			
18	The fenders and associated equipment are visually in good order			
19	The crew has been briefed on the mooring procedure			
20	The contingency plan is agreed and appropriate emergency drill has been conducted			
21	Local authorities have been advise of the STS operation			
22	A navigational warning has been broadcast			
23	Monitoring is in place for accommodation, void spaces, pumproom, compressor and motor room as applicable, to detect possible flammables atmospheres			
24	The other ship has been advised that checklist 2 is satisfactory completed			LT

RECEIVING SHIP	DISCHARGING SHIP
Name : **BASUKI RAHMAD**	Name :
Rank : **Chief Officer**	Rank :
Signature : Date : 06 October 2017	Signature : Date : 06 October 2017

PT. SAMUDERA INDONESIA SHIP MANAGEMENT

SHIP MANAGEMENT – CREW MANAGEMENT – PURCHASING SERVICES – ACCOUNT SERVICES
INSURANCE SERVICES – SHIP INSPECTIONS – MARINE RELATED SERVICES – CONSULTANCY

SHIP to SHIP TRANSFER CHECK LIST

CHECKLIST 3 – BEFORE RUN-IN AND MOORING

Discharging Ship's Name : **VLGC PERTAMINA GAS 1**

Receiving Ship's Name : **LPG/C GAS NURI ARIZONA**

Date and Location of Transfer : October 06th, 2017 / Kalbut - Situbondo STS Anchorage

		Receiving Ship Checked	Discharging Ship Checked	Remarks
1	Checklist 2 has been satisfactory completed			
2	Primary tenders are correctly positioned and fender rigging is in order			
3	If required, Secondary fenders are correctly positioned and secured	N/A	N/A	
4	There are no overhanging projections on the side of berthing			
5	A proficient helmsman is at the wheel			
6	Cargo manifold connections are prepared, blanked and marked			
7	Course and speed information has been exchanged and agreed			
8	The method of controlling the ship's adjustment, e.g by changes to revolutions, propeller pitch or by telegraph has been agreed	N/A	N/A	
9	Navigational signal are displayed			
10	Adequate lighting is available for winches and they nare in good order			
11	Power is available for winches and they are in good order			
12	Rope messengers, rope stoppers and heaving lines are ready for use			
13	All mooring lines are ready			
14	Fire axes, or suitable cutting equipment, are in position at the fore and aft mooring stations			
15	Crew are standing by at their mooring stations			
16	Communications are established with mooring personnel and with the other ship			VHF Ch. 09
17	Fire-Fighting and anti-polution equipment is ready for use			
18	Shipping traffic in the area is being monitored			
19	The vessel status has been appropriately set on the authomatic identification system (AIS)			
20	The other has been advised that checklist 3 satisfactory completed			LT

RECEIVING SHIP	DISCHARGING SHIP
Name **: BASUKI RAHMAD**	Name :
Rank **: Chief Officer**	Rank :
Signature : Date : 06 October 2017	Signature : Date : 06 October 2017

PT. SAMUDERA INDONESIA SHIP MANAGEMENT

SHIP MANAGEMENT – CREW MANAGEMENT – PURCHASING SERVICES – ACCOUNT SERVICES
INSURANCE SERVICES – SHIP INSPECTIONS – MARINE RELATED SERVICES – CONSULTANCY

SHIP to SHIP TRANSFER CHECK LIST

CHECKLIST 4 – BEFORE CARGO TRANSFER

Discharging Ship's Name : **VLGC PERTAMINA GAS 1**

Receiving Ship's Name : **LPG/C GAS NURI ARIZONA**

Date and Location of Transfer : October 06th, 2017 / Kalbut - Situbondo STS Anchorage

		Receiving Ship Checked	Discharging Ship Checked	Remarks
1	Checklist 3 has been satisfactory completed			
2	A standard pre-transfer checklist, such as the ISGOTT shp/shore checklist are satisfactory completed			
3	Required regional checklist have been completed			
4	Procedures for the transfer of personnel have been agreed			By personal basket
5	If used, the gangway correctly positioned and well secured			
6	Intership communication system, including back-up, are agreed and tested			VHF Ch : 09
7	Emergency signals and shutdown procedures are agreed			Stop 3X on VHF 09
8	The engine room will be manned as required throughout the transfer and maintened on standby or on short notice of readiness			
9	A bridge watch and / or an anchor watch is established			
10	Officers in charge of the cargo transfer on both ships are identified and etails have been exchanged and posted			
11	A deck watch has been established to pay particular attention to moorings, fenders, hoses, manifold area and overside			Double watch
12	The initial cargo transfer rate has been agreed with the othership			+/- 100 mt/hr
13	The maximum cargo transfer rate is agreed with the othership			+/- 200 mt/hr
14	Arrangements have been made for the regular exchange of information on quantities of cargo transferred			
15	The topping-off rate has been agreed and recorded			+/- 100 mt/hr
16	The procedure for stopping transfer is agrred			1 Hr/30 Min/15 Min/Standby
17	Ballasting and deballasting arrangements are agreed			
18	Cargo hoses are well supported and proctected from chafing and the hose release are is clear of obstructions			
19	Tools required for rapid disconnection are located at the cargo manifold			
20	Messengers are prepared and positioned ready for unmooring in accordance with the unmooring plan			
21	Details of the previous cargo of the receiving ship, including any hazardous or toxic properties. Have been given to the discharging ship			
22	Security information has been exchanged and if required, a Declaration of Security has been completed			
23	The other ship has been advised that checklist 4 is satisfactorily completed			
	Additional for LNG and LPG transfers :			
24	Cool down procedures have been agreed			
25	Vapor differentials and maximum preasure have been agreed			
26	Procedures for increasing / reducing transfer rates have been agreed			
27	Procedures for the control of vapor pressure have agreed			
28	The potential for cargo roll-over has been considered			
29	Where fitted , ESD link or pendant arrangements are in place and tested			
30	The deck watch is aware of the location and activation method of ESD system on deck			
31	Cargo safety and monitoring system are operational			

RECEIVING SHIP	DISCHARGING SHIP
Name : **BASUKI RAHMAD**	Name :
Rank : **Chief Officer**	Rank :
Signature : Date : 06 October 2017	Signature : Date : 06 October 2017

PT. SAMUDERA INDONESIA SHIP MANAGEMENT

SHIP MANAGEMENT – CREW MANAGEMENT – PURCHASING SERVICES – ACCOUNT SERVICES

INSURANCE SERVICES – SHIP INSPECTIONS – MARINE RELATED SERVICES – CONSULTANCY

SHIP to SHIP TRANSFER CHECK LIST

CHECKLIST 5 – BEFORE UNMOORING

Discharging Ship's Name : **VLGC PERTAMINA GAS 1**

Receiving Ship's Name : **LPG/C GAS NURI ARIZONA**

Date and Location of Transfer : October 06th, 2017 / Kalbut - Situbondo STS Anchorage

		Receiving Ship Checked	Discharging Ship Checked	Remarks
1	Cargo hoses are propertly drained prior to hose disconnection			
2	Cargo hoses or manifolds are securely blanked			
3	The transfer side of the ship nis clear or obstructions (including hose lifting equipment)			
4	The method of letting go moorings and separation of ships has been agreed and crew have been briefed on procedures			
5	The fenders , are correctly positioned and secured for departure			
6	Secondary fenders are correctly positioned ad secured for departure	N/A	N/A	
7	Power is available for mooring winches			
8	Rope messengers and rope stoppers are available at all mooring station			
9	Crew are standing by at their stations			
10	Communications are established with mooring personnel and with the other ship			VHF Ch. 09
11	Shipping traffic in the areas is being monitored and very high frequency (VHF) alert has been transmitted			
12	Maneuvering , mooring and navigational equipment has been tested and is ready for departure			
13	Mooring personnel have been instructed to let go only as directed by the Master			
14	Agreement has been reached that Navigational warnings will be cancelled and AIS status update when clear of the other ship			
15	The other ship has been advised that checklist 5 is satisfactorily completed			LT

RECEIVING SHIP	DISCHARGING SHIP
Name **: BASUKI RAHMAD**	Name :
Rank **: Chief Officer**	Rank :
Signature : Date : 07 October 2017	Signature : Date : 07 October 2017

PT. SAMUDERA INDONESIA SHIP MANAGEMENT

SHIP MANAGEMENT – CREW MANAGEMENT – PURCHASING SERVICES – ACCOUNT SERVICES
INSURANCE SERVICES – SHIP INSPECTIONS – MARINE RELATED SERVICES – CONSULTANCY

SHIP to SHIP TRANSFER CHECK LIST

CHECKLIST 6 – PRE TRANSFER CARGO

Discharging Ship's Name : **VLGC PERTAMINA GAS 1**

Receiving Ship's Name : **LPG/C GAS NURI ARIZONA**

Date and Location of Transfer : October 06th, 2017 / Kalbut - Situbondo STS Anchorage

		Receiving Ship Checked	Discharging Ship Checked	Terminal Checked
1	A standard pre-transfer checklist , such as the ISGOTT ship/shore safety checklist or equivalent, has been satisfactorily completed and arrangements have been made for respective check during the transfer			
2	Required regional checklist have been completed			
3	Written permission for cargo operations to take place are available to all responsible persons			
4	The formal risk assement has been communicated by the transfer organiser and reviewed by involved parties			
5	The general contingency plan for the cargo transfer operation has been communicated by the transfer organiser and reviewed by involved parties			
6	Security information has been exchanged and , if required , a Declaration of Security has been completed			
7	Suitable fenders are rigged correctly to prevent contact of the vessels			
8	Fire axes or suitable cutting equipment are in place at the fore and aft mooring stations			
9	Present and forecast weather and sea conditions have been considered			
10	A means of access in place to allow personnel to safetly transit between the vessels			
11	Cargo specifications and any requirements for inerting , heating, reactivity and inhibitors have been exchanged	N/A	N/A	N/A
12	The cargo transfer operation is to be completed under closed conditions			
13	Where applicable , procedures for vapour control/balancing have been agreed			
14	All cargo monitoring systems, including level gauges and alarms, have been tested and are operational			
15	Where necessary , permission for thank cleaning have been obtaibned and procedures are in place	N/A	N/A	N/A
16	Access to the cargo deck is restricted and controlled during cargo transfer operations			
17	All personnel enganged in the cargo operations are provided with appropriate PPE including , where necessary , personal gas detectors/monitors			
18	Cargo hoses have been pressure tested within prescribed period and documentation is available on board			
19	The construction and material of the cargo hoses is suitable for the temperature and nature of the product(s)			
20	Where electrically continous hoses are used ,the hoses are connected into the vessel with the insulated flange before being passee to the other vessel for			
21	The cargo hose string is of adequate length and properly supported			
22	The cargo hose string is of accordance with the cargo operation plan			
23	Spill response equipment is on station and ready for immediate development			
24	Where applicable , fire-fighting provision has been made for unmanned barges			
25	Spaces to be routinely monitored for any build-up of flammable and/or toxic vapor have been identified			

	Signature	Name
Officer in Charge Receiving Ship		BASUKI RAHMAD
Officer in Charge Discharging Ship		
Terminal		

STS Superintendent		

PT. SAMUDERA INDONESIA SHIP MANAGEMENT

SHIP MANAGEMENT – CREW MANAGEMENT – PURCHASING SERVICES – ACCOUNT SERVICES
INSURANCE SERVICES – SHIP INSPECTIONS – MARINE RELATED SERVICES – CONSULTANCY

SHIP to SHIP TRANSFER CHECK LIST

CHECKLIST 6A – DURING TRANSFER CARGO

Discharging Ship's Name : **VLGC PERTTAMINA GAS 1**

Receiving Ship's Name : **LPG/C GAS NURI ARIZONA**

Date and Location of Transfer : October 06th, 2017 / Kalbut - Situbondo STS Anchorage

		Repetitive Check 1	Repetitive Check 2	Repetitive Check 3
1	Present weather and sea conditions are within the agreed limits			
2	Personnel engaged in the cargo transfer operation are wearing appropriate PPE			
3	Cargo hose strings manifold connections and cargo systems are free of any leakage			
4	Cargo hoses are properly supported, taking into account changing freeboards and any movement between the vessels			
5	All cargo monitoring system, including level gauges, high level alarms, pressure gauges and alarm, are functioning correctly			
6	The cargo transfer operation is continuing under closed conditions			
7	The sea surface around the vessel is periodically visually checked for any sign of pollution			
8	All identified spaces are being routinely monitored for any build-up of flammable and for toxic vapour			
9	All mooring lines are correctly tensioned and managed during the cargo transfer operation			
10	Where rigged in accordance with local requirements, emergency towing-off pennants are adjusted throughout the cargo transfer operation	N/A	N/A	N/A
11	On completion of cargo transfer to or from a tank, the tank is secured			
12	Level in all cargo and ballast tanks, including those not being worked are routinely monitored			
Checked by Ch. Officer : BASUKI RAHMAD				
Date and time : 06 OCTOBER 2017				

POLITEKNIK ILMU PELAYARAN SEMARANG

PT. SAMUDERA ENERGY TANGGUH	STANDARD OPERASIONAL PROCEDURE (S O P)
	PEMUATAN KAPAL

1. TUJUAN

Sebagai pedoman untuk pelaksanaan operasi pemuatan / pembongkaran kapal tanker LPG.

2. RUANG LINGKUP APLIKASI

Prosedur ini hanya berlaku untuk setiap kegiatan pemuatan / pembongkaran di atas kapal tanker LPG.

3. DEFINISI

LPG	Liquefied Petroleum Gas. Dalam Bahasa Indonesia berarti Gas Petrolium yang dicairkan. Dimana dicairkan dengan cara pemberian tekanan (Pressurised). Dimana jenis LPG ini merupakan campuran antara Propane dan Butane (LPG Mix).
Liquid Line	Pipa yang digunakan untuk mentransfer muatan (cair) dari kapal ke truk.
Vapour Line	Atau sering juga disebut dengan "Return Line" adalah pipa yang digunakan untuk mentransfer vapour (gas) dari truck kembali ke tanker. Vapour line juga digunakan sebagai equalizing pressure antara tangki tanker dengan tangki truck.
Liquid Valve	Keran yang menghubungkan antar liquid line.
Vapour Valve	Keran yang menghubungkan antar vapour line.
Cross over Valve	Keran yang menghubungkan antara liquid dan vapour line.
Bypass valve	Keran yang berfungsi untuk mengatur kecepatan / tekanan pemompaan.

Safety Valve	yaitu keran pengaman yang di atur pada tekanan tertentu dan di pasang di tiap-tiap tangki muatan, liquid line dan vapour line dengan tujuan untuk mencegah tekanan tangki ataupun pipa tidak melebihi dari tekanan yang diijinkan.
ESDV	Emergency Shut Down Valve.
Intrinsically Safe	Intrinsically Safe (IS) adalah salah satu bentuk protection (banyak dipakai dan berasal dari Eropa) dari intrumen elektronik untuk aplikasi di hazardous area, dengan cara membatasi energy yang di supply ke instrumen, sehingga jika terjadi spark, energi yang timbul tidak cukup kuat untuk menyalakan gas mixture (yang secara normal maupun tidak normal berada disekitar instrument tersebut).
MSDS	Material Safety Data Sheet yaitu Detail tentang data dari muatan yang dimuat.
Cargo Hose	Selang khusus yang berfungsi untuk menghubungkan manifold kapal dengan manifold darat / storage tanker.
Reducer	Pipa penyambung yang memiliki ukuran yang berbeda di kedua sisinya, berfungsi untuk menyambungkan 2 pipa yang berbeda ukurannya.
NOR	Notice of Readiness yaitu pemberitahuan dari Nakhoda bahwa kapal sudah siap untuk menerima / membongkar muatan.
STS	Ship to ship adalah proses bongkar – muat antara 2 (dua) kapal tanker yang saling terikat satu sama lainnya. Kapal yang satu sebagai discharging vessel

	dan kapal lainnya sebagai receiving tanker.
Storage Tanker	Kapal yang membongkar muatan LPG.
Receiving Tanker	Kapal yang menerima muatan LPG.
SIGTTO	Society of International Gas Tanker and Terminal Operators.
ICS	International Chamber of Shipping.

4. REFERENSI :

- Liquefied Gas Handling Principles on Ship and Terminal, Third Edition-2000, SGTTO.
- Tanker Safety Guide Liquefied Gases, Second Edition-1995, ICS.

5. KESELAMATAN

5.1 TANGGUNG JAWAB

Nakhoda bertanggung jawab untuk meyakinkan bahwa perwira dan anak buah kapal benar-benar mengerti akan tugas dan tanggung jawabnya. Nakhoda atau Perwira yang ditunjuk oleh Nakhoda bertanggung jawab untuk keselamatan kapal dan selama kegiatan bongkar muat. Mualim I harus selalu berada di kapal saat bongkar muat dan yakinkan bahwa semua alat-alat bongkar muat dalam keadaan yang baik.

5.2 KOMUNIKASI

Sistem komunikasi yang di gunakan adalah portable radio yang telah disetujui (intrinsically safe). Sebelum kegiatan loading/unloading di mulai, sistim komunikasi harus dicoba di beberapa tempat dengan jarak yang berbeda-beda untuk memastikan apabila ada daerah yang tidak terjangkau (blind spot) sehingga bisa diantisipasi sedini mungkin.
Komunikasi internal di atas kapal menggunakan portable UHF radio Channel sedangkan untuk komunikasi antar

kapal menggunakan VHF radio baik yang fixed maupun portable pada channel. Yakinkan bahwa battery cadangan untuk portable radio selalu tersedia untuk back up power.

5.3 ALAT-ALAT PEMADAM KEBAKARAN

Alat-alat pemadam kebakaran harus tersedia dalam jumlah yang cukup dan dalam keadaan baik serta siap digunakan sewaktu-waktu. Paling sedikit 2 (dua) botol portable dry chemical extinguisher harus di siapkan di daerah sekitar manifold kapal. Fire Hose harus tersambung ke hydrant dan diarahkan ke daerah manifold, siap digunakan sewaktu-waktu.

5.4 PERALATAN YANG DI GUNAKAN

Peralatan yang digunakan untuk kegiatan proses penyambungan dan pelepasan cargo hose harus dari material yang tidak menimbulkan percikan api (Non Spark Material)

5.5 ALAT BANTU PERNAPASAN (BREATHING APPARATUS) DAN BAJU KIMIA (CHEMICAL SUITS)

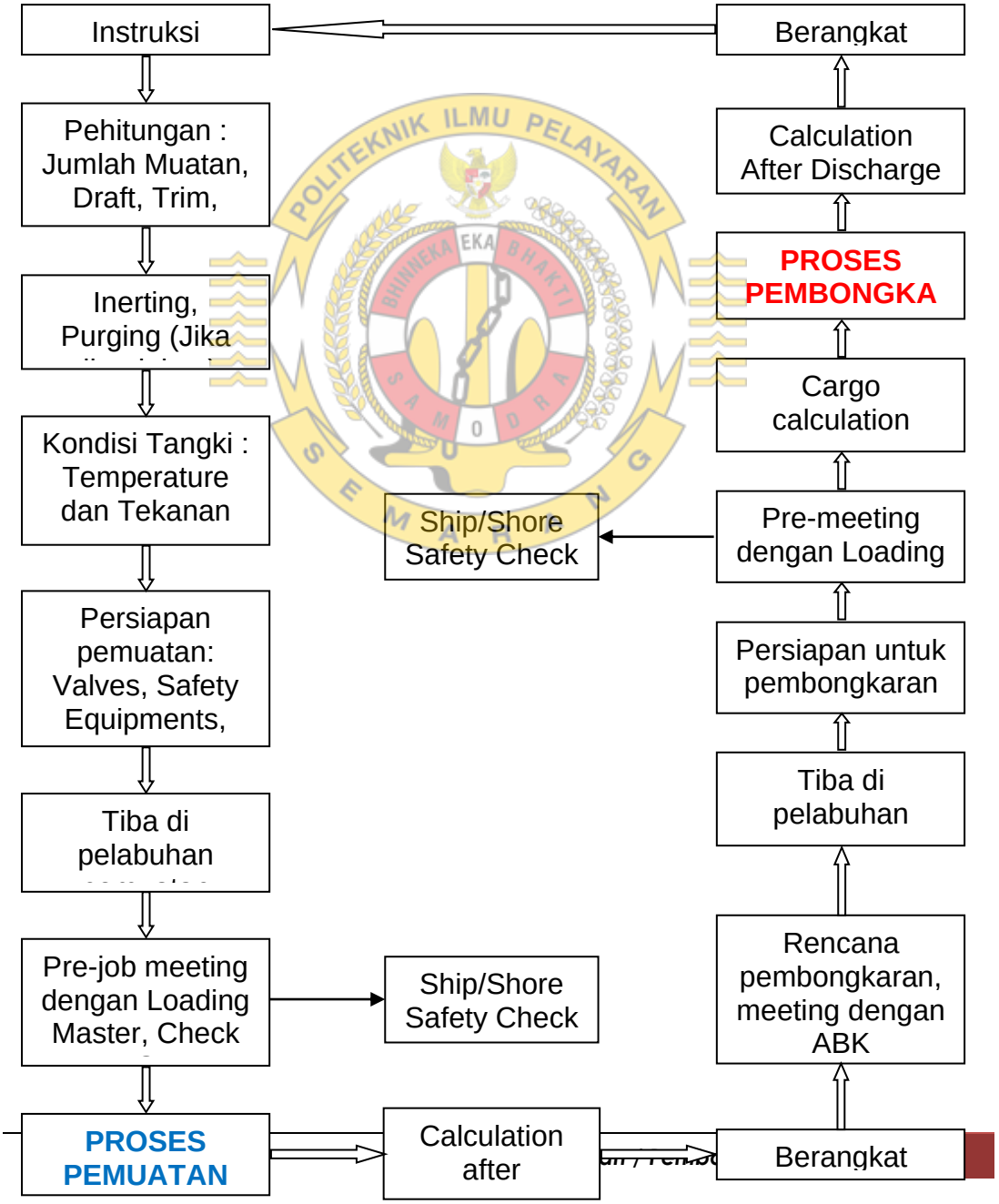
Apabila MSDS dari muatan yang akan dimuat mensyaratkan bahwa orang yang terlibat dalam pemasangan dan pelepasa cargo hose untuk menggunakan Breathing apparatus dan chemical suits, maka breathing apparatus dan chemical suits harus disiapkan dalam jumlah yang cukup untuk setiap orang yang bekerja di sekitar manifold. Tekanan dari botol udara minimal 80% dari tekanan pengisian normal.

5.6 PENGAWASAN DI DEK

Selama proses bongkar / muat, harus selalu ada awak kapal yang bertugas di dek. Selain mengawasi proses pembongkaran, juga harus memperhatikan tali-tali tambat

kapal dan keadaan di sekeliling kapal. Orang-orang yang tidak berkepentingan dilarang untuk berkeliaran di dek. Pada sisi laut, perahu-perahu yang tidak berkepentingan dilarang untuk mendekat ke kapal.

5.7 DIAGRAM DARI PROSES BONGKAR MUAT



6. PROSEDUR PEMUATAN DARI STORAGE TANKER

6.1 SEBELUM TIBA DI LOKASI SHIP TO SHIP

6.1.1. Mualim I harus mengadakan pre job meeting yang dihadiri oleh semua awak kapal dan menjelaskan tentang rencana pemuatan,lamanya pemuatan, jenis dan sifat muatan yang dimuat dan hal-hal lain yang perlu diperhatiakan selama proses pemuatan berlangsung.

6.1.2. Melakukan Function Test emergency shutdown system, pastikan kecepatan menutup dari ESDV sesuai dengan Maker Manual.

6.1.3. Alat-alat pemadam kebakaran disiapkan di lokasi-lokasi yang telah ditetapkan.

6.1.4. Loading plan dipersiapkan sesuai dengan jenis dan jumlah muatan yang akan dimuat, perhatikan "Maximum Filling Limit" untuk tiap-tiap jenis muatan dan yakinkan bahwa stabilitas kapal selalu "positif".

6.1.5. Check MSDS dari muatan yang akan dimuat.

6.1.6. Re-heater (bila ada) dicoba dan pastikan dalam keadaan normal.

6.2 SETELAH TERIKAT DI STORAGE TANKER

Apabila tidak bisa bertemu secara langsung (face to face), **Pertukaran Informasi** ini bisa dilakukan melalui komunikasi radio.

6.2.1. Nama dan Jabatan dari kedua belah pihak yang bertanggung jawab untuk proses pemuatan.

6.2.2. Kecepatan menutup dari ESDV dan lokasi dimana ESDV tersebut bisa dioperasikan.

6.2.3. Keadaan muatan dan tangki dari kedua kapal (tekanan / pressure, suhu / temperature, densitas / density).

6.2.4. Jumlah muatan yang akan di bongkar / muat. Apakah final stop order dari storage tanker atau receiving tanker.

6.2.5. Minimum / maximum pressure dan temperature yang diijinkan.

6.2.6. Initial discharging rate, maximum discharging rate dan waktu yang di perlukan untuk pemberitahuan topping up.

6.2.7. Bila awak kapal dari kedua kapal berasal dari Negara yang berbeda, Bahasa Inggris adalah bahasa yang digunakan untuk komunikasi antar kapal selama proses pemuatan.

6.2.8. Informasi-informasi lain yang dianggap perlu oleh kedua pihak.

6.3 PROSES PEMUATAN

6.3.1. Setelah melengkapi CHECK LIST antar kapal, pemasangan cargo hose bisa dimulai.

6.3.2. Sambungkan Bounding Cable (kabel arde) antara kedua kapal.

6.3.3. Jalankan hydraulic pump untuk ESDV system.

6.3.4. Pasang pressure gauge pada liquid and vapour line dan yakinkan bahwa tidak ada tekanan di dalam pipa. Bila masih ada tekanan sisa, maka harus dibuang lewat drain line yang disediakan di manifold.

6.3.5. Buka blind flange liquid dan vapour line, apabila diperlukan pasang reducer sebelum disambungkan dengan cargo hose.

6.3.6. Gunakan selalu Teflon Gasket.

6.3.7. Setelah cargo hose terpasang, lakukan test kebocoran dengan jalan memberi tekanan ke liquid dan vapour line. Bila sudah tidak ada kebocoran, buang lagi sisa tekanan yang di dalam pipa tadi dan laporkan ke Mualim I bahwa pemasangan selang telah selesai.

6.3.8. Line up semua liquid and vapour valve sesuai dengan loading plan.

6.3.9. Mualim I akan menginformasikan ke storage tanker bahwa kapal siap untuk menerima muatan.

6.3.10. Mulai pemuatan dengan minimum Loading rate dan dinaikkan secara bertahap sampai pada maximum loading rate yang di sepakati.

6.3.11. Jumlah muatan yang sudah masuk ke kapal di hitung setiap jamnya, cocokkan dengan jumlah

muatan yang sudah dibongkar dari storage tanker.

6.3.12. 1 (satu) jam sebelum selesai muat, beritahukan ke storage tanker. Loading rate di turunkan selama proses topping up.

6.3.13. Informasikan ke kamar mesin apabila compressor di perlukan.

6.3.14. Setelah selesai proses pemuatan, tutup semua liquid dan vapour valve. Sisa liquid yang ada di cargo hose harus diblow ke kapal atau ke storage tanker (sesuai dengan kesepakatan awal). Yakinkan sudah tidak ada liquid didalam cargo hose sebelum tekanan cargo hose di release.

6.3.15. Setelah tidak ada tekanan, cargo hose bisa dilepas, blind flange liquid dan vapour dipasang kembali.

6.3.16. Simpan kembali semua peralatan yang digunakan di manifold.

6.3.17. Pompa hydraulic untuk ESDV di matikan.

6.4 DOKUMEN MUATAN

6.4.1. Saat kapal tiba di lokasi storage tanker, dan merubah status mesin dari "Navigation Full" ke "Stand by Engine", Jam tersebut dicatat dan buatkan **"Notice of Readiness"** pada jam tersebut. Notice of readiness ini ditanda-tangani oleh Nakhoda dan Loading Master.

6.4.2. Sebelum pemuatan di mulai, Mualim I dan Loading Master akan melakukan inspeksi awal terhadap tangki kapal untuk mencatat pressure dan temperature, kemudian menghitung berapa sisa

muatan (Vapour) yang ada di kapal saat itu (ROB). Mualim I kemudian membuat **"Dry Certificate"** dengan mencantumkan jumlah ROB sebelum pemuatan. Dry certificate di tanda-tangani oleh Nakhoda dan Loading Master.

6.4.3. Mualim I bertanggung jawab untuk menghitung berapa total jumlah muatan yang ada dikapal setelah selesai proses pemuatan. Jumlah ini dikurangi dengan jumlah ROB untuk mendapatkan total jumlah muatan yang dimuat. **(Cargo Loaded = After Loading – Before Loading)**. Kemudian jumlah ini dicocokkan dengan berapa jumlah muatan yang dibongkar dari discharging tanker.

6.4.4. Toleransi jumlah muatan yang diterima dengan jumlah yang tercantum di B/L (Bill of lading) tidak boleh melebihi **..... %** sesuai dengan Charter Party.

6.4.5. Apabila terjadi selisih jumlah muatan melebihi batas toleransi, kedua pihak harus melakukan pengukuran kembali. Apabila setelah dilakukan pengukuran kembali ternyata selisih jumlah muatan masih tetap melebihi batas toleransi, maka Nakhoda harus membuat surat protes, yang ditanda tangani oleh Nakhoda dan Loading Master.

6.4.6. Selain dokumen B/L, dokumen-dokumen lain yang harus di terima dari discharging tanker adalah :

- Ceritifacte of Quality
- Certificate of Quantity
- Certificate of Origin
- Cargo Manifest

6.4.7. Mualim I juga harus membuat Time Sheet dan mencatat semua kegiatan mulai dari kapal sandar, proses pemuatan sampai kapal lepas secara detail pada Time Sheet. Time sheet ini harus ditanda-tangani oleh Nakhoda dan Loading Master yang bertugas.

6.5 KEADAAN DARURAT

Keadaan darurat dimana tekanan di dalam tangki tidak terkontrol, sehingga apabila tidak segera ditangani makan bisa menyebabkan tangki over pressure. Tindakan yang perlu dilakukan dalam hal ini adalah :

6.5.1. Informasikan ke storage tanker untuk stop cargo pump.

6.5.2. Bila hanya tekanan di 1 tangki yang tidak terkontrol, transfer vapour ke tangki lainnya.

6.5.3. Bila tekanan di semua tangki tidak terkontrol, manual release pressure safety valve secara manual, sebelum release vapour, informasikan ke discharging tanker dan juga diumumkan melalui Public Addresser yang ada di kapal untuk memberitahukan kepada semua awak kapal.

6.5.4. Buka manifold vapour, biarkan vapour lepas ke atmosphere melalui vapour line.

6.5.5. Segera Start Spray Pump untuk mendinginkan tangki.

6.5.6. Apabila tekanan tangki sudah normal, pemuatan bisa di lanjutkan kembali dengan rate yang lebih kecil.

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