

EU-MRV Solution - ClassNK MRV Portal

MRV-Monitoring Reporting Verification Seminar Glyfada Golf Gardens 27th April, 2017 ClassNK



ClassNK MRV Portal Main Functions :

Application/Management

- Application for assessment / verification
- Registration of applicable ships
- Setting access control

Monitoring Plan

- Download of MP template
- Input Company/Ship data
- Submission for assessment

Monitoring of data

- download on-board data reporting template
- Sending monitoring data & Supporting documents
- Managing/correcting accumulated data
- Setting alert criteria for the missing or abnormal data

- Checking and Aggregating annual data
- Submission for verification





From application to ER submission :

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- Open web site from May 2017
- Online application from ClassNK web page
- Trial use is available for MP and monitoring of data
- Available from May 2017
- Data connection with "NK-SHIPS"
- Monitoring data can be sent to Portal by ships from Sep 2017
- Simple excel format for on-board
- Data linkage between on-board Ablog system and MRV portal is possible
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Application: http://www.classnk.or.jp/hp/ja/





Application:

ClassNK web Service	日本語 English
Important Notice This is Web Service Portal Test site.	Password Change
Web Service Menu	Password Management
• e-Application Online application service for surveys and audits	Microsoft Internet Explorer or Google Chrome or Firefox is required to use the following ClassNK web services. The website may be inoperable or may not display properly on other browser.
NK-SHIPS Comprehensive information service for ship management Go to Web Service	Topics More
PrimeShip - HULLCare Advanced hull maintenance information service Go to Web Service	07 Apr 2017 NEW Website updating for "PrimeShip- HULL for Container Carriers"
Application for NK MRV Portal Application for ClassNK MRV Portal for to Web Service	31 Mar 2017 NEW Website updating for "PrimeShip- HULL(HCSR)"
ClassNK MRV Portal ClassNK MRV Portal	24 Feb 2017 Website updating for "PrimeShip- HULL(CSR)"
Go to Web Service	17 Feb 2017 Website updating for "PrimeShip- HULL(HCSR)"
ClassNK MRV Portal Application web page	09 Feb 2017 New version release announcement for "PrimeShip-HULL(HCSR)"



Application: Complete on-line

Company Inform	nation				14	認証対象船舶				
Name of the	ClassNK Shin M	lanagement	Co. Ltd			+ Ship name		IMO No.	Type of Ship	
company	Clossific Ship P	lanagement	00., 20.			- ROYAL HARMONY		9491678	Bulk carrier	~ ,
	3-3 Kioi Cho, C	hiyoda-Ku			<u>^</u>	- NORD STRIUS		0620633	Gas carrier	~
	City		Tolaro				6	9732163	Gas carrier	~
Address	State / Provin	A /Pasion	Tokyo					0758870	Chemical tanker	~ `
	Bostcode /71	o keyion	102.0001			忠証種類				
	Country		102-0094	0		☑ モニタリングプラン書	查			
	Country	(Popor	~		☑ エミッションレポート	~ (ER) 認証			
	First Name	Taro				認証データの提出方法				
組織の代表者	Surname	Kaiji				ClassNK MRV Portal	を利用して認証データを提出する			
	役職	CEO				● NK-SHIPS ログ	インID有り ログインID: (******			
	First Name	Jīro				O NK-SHIPS ログ	インID無し			
MRVの代表者	Surname	Kaiji				O ClassNK MRV Portal	を利用せず認証データを提出する			_
	役職	Technica	l Department		-	敬要:				
	First Name	Saburo				ER認証対象期間				
	Surname	Kaiji				\odot January 1, 2018 \sim	December 31			
	役職	Designat	ed Person			Every year since 20	18			
attrivent	所属部署	Technica	l Department			請求先				
但当者	Tel	03-XXXX	(-XXXX			● 左記申込者宛				
	Fax					() 卜記請來元宛				
	E-Mail	tech@nk	shipmanagement.com			諸求先名称				
		部門アドレ	ノスをお持ちでしたら、子は	ヒらをご記しください。						^

Application form



Application:

• Register Applicable ships and persons/companies in charge

onitoring	~ O	Ship List				
R(Emission Report)	~ _					
oC(Declaration of Conform	nity)*	登録済み船船リスト				Add Ship
er Information	~	Ship name	IMO No.	Flag Name of Ship owner	Type of ship	
mnany Data		NULQINSTAL PARK	9310208	PAN	Bulk carrier	Edit
	_	= (1 + 1) + (1	9400954		Passenger ship	Edit
ip List		17000000000000000000000000000000000000	9403940	PAN	Bulk carrier	Edit
ıb User List		A CONTRACT AND A CONTRACT	9717163		Ro-ro ship	Edit

Ship list is automatically generated by NK-SHIP database for ClassNk ships
Ships other than ClassNK should be added by the user.

User List	🖽 Add	担当船舶一覧		📕 Edit
User	Туре	Ship	IMO No.	Type of ship
Nana Ijichi	サブユーザー	A REPORT OF A REPORT OF	10031116001	Bulk carrier
Shimpei Watanabe	サブユーザー	$(-,-,-)(0,1) \in (0,0)$		Passenger ship
Shimper watanabe	552-5-			Passenger snip

- Register PIC/Company
- Access control for each ship



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Download/submit Monitoring Plan

Structure of Monitoring Plan

- Identification of the ship/company
- Identification of CO₂ emission sources on board the ship, and the fuel type used
- Description of the procedures for monitoring voyages, fuel consumption and activity data
- Methodology for closing data gaps
- Procedures for quality control
- Description of data flows
- Identification of responsibilities

Salient Function:

- Company to register the ships under its management
- Auto-input ship/company identification, emission sources by NKSHIPS database
- Download / submit MP
- □ Confirm assessment status of MP
- Download data reporting template for on-board monitoring

Merit :

- □ Full use of NKSHIPS data
- Uniform control of all ships under the management
- Cut labor cost for MP submission



Download/submit Monitoring Plan

• Input Necessary information for MP (Ship and company info)

lonitoring	× 🔇	Monitoring Pla	n				Submit	Cancel	Revise	
IP(Monitoring Plan) Status <u>*1 new tems</u> ,		Project Basic	data Ship data	Fuel Definiti	on of cargo volume Fuel ty	/pe used Management Proce	ss Confirmati	on		
List		Filter		■ システム	 システムを利用しない レポート送信方法 Reported by cooperated system 	Voluntary measuremen	Voluntary measurement items			
R(Emission Report)	~	Status	•	レポート送 Report		FO on laden Voyage FO on Cargo Heating(for the second s	or chemical tan	anker)		
ser Information	~	WorkFlow		Coopera	ated system :	Fo on dynamic position The distance travelled	t at sea			
		Status	Sendback	Report	by NK-EUMRV	when navigating through	ice.			
		処理担当者	ClassNK			Fuel used in LNG carrie	rs			
		Last Update	2017/04/13 11:34	報告単位 Event r	report and daily report e report and daily report	 □ LNG only ☑ LNG and Heavy fuel oil 	Heavy fuel oil			
				Actions to	o be taken					
				Status	Comment	Actions taken	Last Up	odate		
				Comment	ŧ					
					Revised			2017/04/13 11:	16 1	
					Test			2017/04/13 11:	04	



Download/submit Monitoring Plan

• For example, fuel type used

NK EUMRV Po	rtal	[TRIAL] V	/er.1.0.0 - 20	17/04/01				41	US000008 Wa	tanabe Sh O L
lonitoring	~ 3	Monitor	ing Plan				Si	ıbmit (Cancel	Revise
P(Monitoring Plan)	~					-				
Status *1 new tems.		Project	Basic data	Ship data Fuel	Definition of cargo volume	Fuel type used	Management Process	Confirmation		
List		Туре	Title	Caption	Emission	Factor Evidence	e of emission factor			
R(Emission Report)	~	HSFO	HSFO	High Sulfur Fu	uel Oil 3.1	1440 IMO Val	ues 2012/63[1]			Edit ^
OC(Declaration of Conformity)	*	MDO	MDO	Marine Diesel	Oil 3.1	1440 IMO Val	ues 2012/63[7]			Edit
ser Information	*	MGO	MGO	Marine Gas O	il 3.2	20600 IMO Val	ues 2012/63[3]			Edit
		OTH	Bio E	Bio Ethanol	0.0	0000				Edit
		-								¥

Add Fuel



Download/submit Monitoring Plan

• Download and submission of MP

NK EUMRV Po	rtal	【TRIAL】 Ver.1.0.0 - 2017/04/01	L= 0500008	
Monitoring	~ 3	Monitoring Plan Submit	Cancel	Revise
MP(Monitoring Plan) Status 11 new tems.	Ť	Project Basic data Ship data Fuel Definition of cargo volume Fuel type used Management Process Con	firmation	
List		回 他船級主たけ自社のMPを添付する	6-	
ER(Emission Report)	~	Basic data, reporting	54	ve
DoC(Declaration of Conformity)	~	Monitoring Plan 1 BD.pdf		
		Info. etc) Management process, methodlogy Manual input part Template Download (Company, proceduros otc)	- Mer	∙ge to M
		Delete ▲ Manual.pdf Upload MP after completing all sections Cover page & Signature ← Cover page of MP to be in	Procedural (ndicate in N	document MP can be
		signed and uploaded	iploaded se	parately



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On-board report

- Auto-generation of on-board data reporting template as per MP input data
- Simple excel template
- One-Click Data packaging for sending email

Reporting contents :

- ✓ Date/Time, Position, Port
- ✓ Fuel Oil Consumption (FOC)
- Distance sailed, time spent at sea \checkmark Arr. (mandatory)
- Bunkering info.
- \checkmark Cargo info.
- ✓ Navigational info. (RPM, BHP, etc)
- supplementary information from arrival to berth

Report timing :

- ✓ Noon (mandatory)
- ✓ Dep. (mandatory)
- \checkmark Anchoring(mandatory)
- \checkmark Other Event (at any
 - time)

Supporting documents :

- ✓ Logbook
- ✓ Bunker Delivery Note
- ✓ Bill of Laden







On-board report timing

Report by Noon :

- ✓ Noon
- ✓ Departure
- ✓ Arrival
- ✓ Anchoring
- ✓ Other Events

Report by 1 voyage:

- ✓ At Sea (Arrival)
- ✓ In Port (Departure)
- ✓ Noon





On-board report (Noon and Event)

				S	am	ple inc	ut	Mandatory				Non Ma	Non Mandatory		need
Reporting	basic data							Monitor	ing Data						
Voyage Info		Time at the r	eport	Position at the	report			FOC from	last repo	rt [MTN]	Distance and ti report	me from last	Voyage state	2	
Voyage No.	Status	Date	Time	Latitude		Longitude		HSFO	LSFO	LFO	Distance [nm]	Time [hour]	propeller revolution	average BHP	Sea state
x	×	yyyymmdd	0000 to 2359	0000.0000 to 9000.0000	N or S	00000.0000 to 18000.0000	E or W	0000.0	0000.0	0000.0	0000.0	0000.00	0000	00000	0 to 12
1	Departure	20180104	0030	3440.8937	N	13513.3721	Е	0.0	0.0	14.0					
1	Noon	20180104	0300	3359.5482	Ν	13454.1926	Е	6.4	0.0	2.4	24.0	2.50	24	1200	2
1	Noon	20180105	0300	3036.7931	Ν	12851.6438	Е	68.2	0.0	14.3	476.0	24.00	78	3800	4
1	Noon	20180106	0300	2353.9874	Ν	12303.5964	Е	72.4	0.0	12.8	488.4	24.00	80	4000	4
1	Noon	20180107	0400	1819.6380	N	11715.5496	Е	76.2	0.0	15.8	509.4	25.00	80	4000	3
1	Noon	20180108	0400	0856.6142	Ν	10952.5810	Е	74.3	0.0	14.9	491.3	24.00	78	3800	3
1	Noon	20180109	0400	0231.1598	Ν	10518.3624	Е	71.5	0.0	13.8	488.2	24.00	76	3700	3
1	Anchor start	20180109	0830	0114.0790	Ν	10355.4706	Е	11.4	0.0	3.2	70.4	4.50	48	2000	3
1	Arrival	20180109	0830	0114.0790	Ν	10355.4706	Е	0.0	0.0	0.0	0.0	0.00			
1	Anchor end	20180109	1200	0114.0790	N	10355.4706	E	0.0	0.0	2.9	0.0	0.00			
2	Departure	20180109	2330	0115.3396	N	10344.1146	E	2.2	0.0	0.4					

On-board report (Supporting document)

Sample input (BDN)

PDF attach

Reporting	basic data							Bunker										Evidence	
Voyage Info		Time at the r	eport	Position at the	report			Port information	rt information Vo				Volume [m^3] Dencity [MTN			N/m^3]		File	
Voyage No.	Status	Date	Time	Latitude		Longitude		Name of port	UNLOC	EU Port?	Port L/U	HSFO	LSFO	LFO	HSFO	LSFO	LFO	Filename	
X	Х	yyyymmdd	0000 to 2359	0000.0000 to 9000.0000	N or S	00000.0000 to 18000.0000	E or W	XXXXXXXXXX	ABCDE	Y or N	Y or N	0000.0	0000.0	0000.0	0.0000	0.0000	0.0000	****	хх.ууу
1	Arrival	20180109		0115.3396	N	10344.1146	E	Singapore	SGSIN	N	N	3240	840	480	2.8400	1.3800	1.0500	abcdefghijkl.	df



On-board report (sending data)

	IMO No.	1432543	Name of Ship	King Quee	n II			Vali	dation	Cr
,	Validation									
ſ		Meta data		Version	Check data	Check file	Count]	
	Event	NkmrvDep	artureStandard	1_00_00	ОК		18	Events	1	
Ī	ROB	NkmrvRob	Standard	1_00_00	ОК	ОК	2	Items		
	Bunker	NkmrvBunl	kerStandard	1_00_01	ОК	ОК	4	Items	1	
	Cargo	NkmrvCarg	oStandard	1_00_00	NG	NG	5	Items		

14:24:32 1432543_KingQueenII_20180120142432.zip

2018/01/20

Packaging monitoring data and supporting documents to Zip file

Ship DC Database	
---------------------	--

ate zip

- Send by e-mail with Zip file from on-board PC
- Data validation function is available

Data input/correction



Data management on shore

Function :

- ✓ Adding sub Login ID for each vessels
- ✓ Setting alert criteria for missing or extraordinary data.
- ✓ Receiving alert mails for user
- ✓ Uploading documents through web page
- ✓ Correcting / editing monitoring data through web page
- ✓ Fixing monitoring data for verification
- ✓ Submitting emission report
- ✓ Receiving/managing verifier's comment



<u>Check submitted data</u> <u>Notice ER verification result</u>





Data management on shore

• Confirmation of monitoring data (Voyage List)

DK-M	RV		N	K Kaiun Co., Ltd.								Locaut
FUIL	ui	ver. 1.00	.00							AXUUI	u NK Kalun Co., Lto.	Logour
Voya	ge D	ata										
	Ship	Queen El	izabeth IV	Year 201	8							
		EU Port or	lv 🗖	Exclude Submitted voyage	e e						Search	
	-											
	E	Erro	r ch	eck					1	2		
				Departure				Arrival				
		Erro mark	V/No.	Arr. Time (UTC)	Dep. Time (UTC)	Port	EU	Arr. Time (UTC)	Port	EU		
	V		1	2017/12/29 15:48	2017/12/30 18:48	SINGAPORE		2018/01/06 14:50	MUMBAI	-		
	V		2	2018/01/06 14:50	2018/01/08 18:38	MUMBAI		2018/01/19 05:58	SUEZ			
		0	3	2018/01/19 05:58	2018/01/19 21:58	SUEZ		2018/01/24 08:24	FIUMICHINO	0		
		0	4	2018/01/24 08:24	2018/01/2505:35	FIUMICHINO	0	2018/01/28 15:04	GIBRALTAR	0		
		0	5	2018/01/28 15:04	2018/01/30 18:14	GIBRALTAR	0	2018/02/02 18:13	BILBAO	0		
		0	6	2018/02/02 18:13	2018/02/12 15:24	BILBAO	0	2018/02/21 04:59	SOUTHAMPTON	0		
		0	7	2018/02/21 04:59	2018/02/23 05:39	SOUTHAMPTON	0	2018/02/24 11:24	BOSTON			
	V		8	2018/02/24 11:24	2018/02/25 14:55	BOSTON		2018/03/02 16:38	RIO DE JAN EIRO			
	V		9	2018/03/02 16:38	2018/03/04 12:11	RIO DE JAN EIRO		2018/03/18 14:15	MUMBAI			
	V		10	2018/03/18 14:15	2018/03/20 15:25	MUMBAI		2018/03/30 08:28	SINGAPORE			
	V		11	2018/03/30 08:28	2018/04/03 09:04	SINGAPORE		2018/04/06 03:15	BUSAN			
	V		12	2018/04/06 03:15	2018/04/07 05:55	BUSAN		2018/04/09 14:46	CHIBA			
	V		13	2018/04/09 14:46	2018/04/11 13:41	CHIBA		2018/04/23 04;21	SUEZ			
		0	14	2018/04/23 04:21	2018/04/24 07:05	SUEZ 🔉		2018/04/29 18:04	GIBRALTAR	0		
		0	15	2018/04/29 18:04	2018/04/30 14:04	GIBRALTAR	0	2018/05/08 12:12	AMSTERDAM	0		
				die .	72.							
	<u></u>		_								1	
1	Add	dNew	Delet	te					Sub	mit		
									-			
	Impo	ort Voya	ge Data	3								
	-	1										
	Tem	plate Dov	nioad			_						
				Q		Upload						



Data management on shore

• Confirmation of monitoring data (Tracking data)

<u>K-MIRV</u> Portal ver. 1.1	00.00 NK Ka	iun Co., Ltd.	(AX0010 NI	< Kaiun Co., Ltd.	Logout
Voyage data / M	onitoring go * Dista	nce * Fu	Prev	V/No. 1	4 [SUEZ /	GIBRALTAR	۱ V [۶	lext 🕨			E	MP View
V/No. 1	4											Save
Distance Distance through i	1,979.7 nr ce 200 nr	m (3,663.4 km m (????? km)	n) Tim	e e through i	650.5 h ice 20 h Add New		ogle Tyjt ta #16	Q 7522	€ 5 5 Mart Mart Martin 2.72 X.72 Martin	*10480 Wer 20/47 75/22 21/07 No/10- 20/27		2917 mar
Rep. Time(UTC)	Lat./Long.	Distance 1	Time	Speed	Dir.		00-8		ers	20777 RX=7 Georgest	77121 Bucuretti	84
2018/04/24 07:05	29.94N, 32.57E						3 4	9262	120	Padgarea	* 710717	
2018/04/24 12:00	31.81N, 31.73E	72.3 nm	60.5	14.5 knot	312° 11'	Porto	Z FU-F Madrid	y		THIET	Barbar	7275
2018/04/25 12:00	34.74N, 23.11E				294° 24'	ボルトガル	スペイン	human	P+V=7R	1 10 24	US+ Stra	Aekara
2018/04/26 13:00	35.08N, 15.46E	≥ 388.5 nm	340.5	16.2 knot	291° 41'	12.42	rE-0+			15 N	ZYZ tenir Migra	1 1
2018/04/27 12:00	47.80N, 09.37E	830.9 nm	750.0	36.1 knot	339° 21'	Contraction of the second seco	Sevilla V971 Malaga	/	1322	1 1	A	taiya Ar
2018/04/28 12:00	37.84N, 03.25E				271° 05'		UTBARA .		- 10	7.69		4703
2018/04/29 12:00	35.91N, 03.03W				254° 13'	14			A (Fally +)	10 H H H		L.
2018/04/29 18:04	36.13N, 05.35W	67.5 nm	55.9	11.3 knot	279º 15'	ر السماء ر السماء					74077	-34
Total		2,785.1 nm	7,859	21.3 knot	285° 45'	7300	5		15			125
Adjustment distand from arrival to ber Adjustment time	ce 15 nr	n (????? km)						アルジェリフ	Google	IJE7	דעד	
from arrival to bert	thh					19-7		一地回5-91	62016 Dep8arle-DE/8HD (82009), Google,	inet Geogr Nazional, Maga Gidrael, ORION	NE HRAD DI-FILODAR 2	00 km td



Data management on shore

• Confirmation of monitoring data (FOC)

yage data / Monitor	ing	H Prev	V/No. 14	[SUEZ / G	IBRALTAR] 🗸 Next 🕨				IP View
ort Cargo *	Distance *	Fuel *								in vice
V/No. 14									Sav	е
									Add Nev	w
Place	Time(UTC)	HSFO	LSFO	MDO	LPGP	Ave. propeller revolution	1 Ave. BHP	Sea State		
Departure [SUEZ]	2018/04/24 07:05	4.8	0.0	0.0	0.0	100	100	0		
At sea	2018/04/24 12:00	14.0	0.0	0.0	0.0	200	200	1		
At sea	2018/04/25 12:00	50.2	0.0	0.0	0.0	300	300	2		
At sea	2018/04/26 13:00	-44.9	0.0	0.0	0.0	200	200	3		
At sea 2018/04/27 12:00		141.4	0.0	0.0	0.0	100	100	4		
Cargo Heating	Cargo Heating 2018/04/27 13:00		0.0	0.0	0.0					
At sea	2018/04/28 12:00	50.3	0.0	0.0	0.0	100	100	5		
At sea	2018/04/29 12:00	53.0	0.0	0.0	0.0	200	200	6		
Arrival [GIBRALTAR]	2018/04/29 18:04	16.5	0.0	0.0	0.0	300	300	7		
Adjustment from arrival to berth	2018/04/29 18:10	1.5	0.0	0.0	0.0	300	300	7		
Consumption at sea		(-0.0)	(-0.0)	(-0.0)	(-0.0)					
Dynamic positioning	2018/04/30 13:00	0.0	20.0	0.0	0.0					
Bunkered		-642.5	128.0	128.0	-128.0					
Departure [GIBRALTAR]	2018/04/30 14:04	2.7	0.0	0.0	0.0					
Consumption In port		(-0.0)	(-0.0)	(-0.0)	(-0.0)					
ROB	21									
Departure [SUEZ]	2018/04/24 07:05	4.8	0.0	0.0	0.0	100	100	0		
At sea	2018/04/24 12:00	14.0	0.0	0.0	0.0	200	200	1		
At sea	2018/04/25 12:00	50.2	0.0	0.0	0.0	300	300	2		
At sea	2018/04/26 13:00	-44.9	0.0	0.0	0.0	200	200	3		
Bunkered										
Bunkered Volume [GIBRALTAR]	HSFO 642	2.5 LSFO	0	MDO	0 LPGP	0 BDN (Volume a	and Density) X285234 X328493	40 Fuel 20180501 32 Fuel 20180501	.pdf .pdf	
Bunkered Density [GIBRALTAR]	HSFO 7	??? LSFO	0	MDO	0 LPGP	0			Evidence	



Data management on shore

• Confirmation of monitoring data (Tracking data Noon vs AIS)





Data management on shore

• Confirmation of monitoring data (Dep/Arr timing Noon vs AIS)





From application to ER submission :

Application/Management

- Application for assessment / verification
- Registration of applicable ships
- Setting access control

Monitoring Plan

- Download of MP template
- Input Company/Ship data
- Submission for assessment

Monitoring of data

- download on-board data reporting template
- Sending monitoring data and Supporting documents
- Managing/correcting accumulated data
- Setting alert criteria for the missing or abnormal data

- Checking and Aggregating annual data
- Submission for verification

- Open web site from May 2017
- On line application from ClassNK
 web page
- Trial use is available for MP and monitoring of data
- Available from May 2017
- Data connection with "NK-SHIPS"
- Monitoring data can be sent to Portal by ships from Sep 2017
- Simple excel format for on-board
- Data linkage between on-board Ablog system and MRV portal is possible
 - 01st ER submission from Jan 2019

ClassNK

Emissions Report

Planned Functions:

- Support making Emissions report
- Submission of ER to NK
- Receiving verification result and DOC
- Submission of verified ER from MRV portal to MRV THETSIS

Coming Soon!



Merit of ClassNK MRV Portal

- Reducing on-shore work load by data aggregation and management in line with EU MRV regulation
- Reducing on-board duplicated work by voyage data input in line with company's workflow or Ablog data connection
- Appropriate information sharing between on-board and shore side.
- Data quality/accuracy improvement by Miss alert function
- Reducing workload of Emissions report making
- Reducing verification cost by verifier = reduce verification fee

Data Flow Chart through ESM SITE ClassNK



Position of each player







Consulting Service for EU MRV regulation

MRV-Monitoring Reporting Verification Seminar Glyfada Golf Gardens 27th April, 2017 ClassNK Consulting Service Co., Ltd.



<<u>Establishment></u>

ClassNK Consulting Service Co., Ltd (NKCS) was established in Dec. 2011 as independent consulting company

<NKCS mission>

Supporting the implementation of various needs in marine industry by providing wide range of maritime consulting services

<u><NKCS main consulting content></u>

- Delivering IT-driven technology service ClassNK CMAXS / ClassNK NAPA GREEN
- Supporting service in relation to recent regulation

BWMS / Ship Recycling Convention / SEEMP

Other consulting service

Bunker Fuel Oil Analysis / FROSIO / Superintendent Service

Required action and NKCS service for EUMRY

Required action by Company	Consulting service by NKCS	Verification service by Verifier
 Preliminary stage Setting up and making Monitoring Plan Submitting Monitoring Plan to verification body for its verification 	 NKCS offers advisory consulting service to set up Monitoring Plan Providing standard template Providing instruction to set up Monitoring Plan Providing necessary advise to make Monitoring Plan 	 Verification of Monitoring Plan
 Monitoring stage Management of operational data and its monitoring based on Monitoring Plan 	-	
 3. Reporting stage Making Emission Report Submitting Emission Report to verification body for its verification 	-	 Verification of Emission Report Issue DOC

NKCS service flow



1. To provide Monitoring Plan(MP) Template and Instruction to fill in MP

art A Revision rec	ord sheet			
Version No.	Reference date	Status at reference date (1)	Reference to Chapters where revisions or modifications have been made explanation of changes.	Revision record is to be described in this table.
				Version No: Fill in version number of Monitoring plan. Reference date: Fill in establishment date and revision date of Monitoring plan Status at reference date: Slect one of status of Monitoring plan a 'Working draft', 'Final draft submitted to the verifier', 'Assessed', Modified without need for reassessment' Reference to Charpters: Full in contents of changes
) Select one of the following cat	tegories: 'Working draft', '	Final draft submitted to the verif	er', 'Assessed', Modified without need for re-assessment'.	
'art B Basic data 'able B.1. Identifica	tion of the ship:			Ship particular is to be described in this table.
lame of the ship				Fill in the name of subject vessel
IMO identification number				Fill in IMO number of the vessel
Port of registry				Fill in port of registry of this vessel.
lome port (if not ident	tical wi port of r	egistry)		Fill in home port (if not identical with port of registry)
lame of the shipowner				Fill in name of ship owner/ management company
vIO unique company a umber	and registe	er identification		Fill in IMO unique company's identification number and registered owner's identication number.
ype of the ship (1)				Select one of ship type specified in (1) outside the colum.
and waight (in matria	tonnes)			Fill in deadweight.

34

2. To provide reply on inquiry and necessary advise

				In	quiries f	or Monitor	ing Plan	Exce	i sneet format is provid
art A Revision	record sheet		D.C					In	NKGS comment and reply
Version No.	Reference date	date (1)	Reference to Chapters who	ere revisions or moc explanation of	nincations nave be of changes.	en made, including a t	ner		
					<u> </u>				
Select one of the followi	ng categories: 'Working draft	, Final draft submitted to the v	rifier', 'Assessed', Modified without ne	ed for re-assessment'.			9		
ut D. Danis dat									
able B-1 Identifi	ation of the ship:							Inquiries	NKCS comment and reply
ame of the ship									
10 identification -	umbar								
vio identification f	lunoei								
ort of registry									
lome port (if not id	entical with port of re	gistry)							
lame of the shipow	ner								
MO unique compar umber	ny and registered own	ner identification							
ype of the ship (1)									
eadweight (in metr	ic tonnes)								
ross Tonnage									
lassification Socie	ty (voluntary)								
ce class (voluntary) (2)					/			
lag State (voluntar	y)					//			
'alymtaer anan dae	nintion fiold for addi	tional information							
					\leq				
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	Tom	nlata					(· · ·)
		וטומנכ.						induing and	commont /

3. Sample management procedure



Inquiries



Please feel free to contact ClassNK Consulting Service Co., Ltd, if you have any inquiries about our consulting service for EU MRV.

We will offer best proposals about our services for your fleet after receiving necessary information.





THANKYOU