

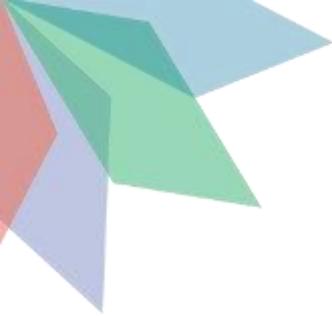
Material Handling Workshop

19TH NOV 2024

Independent Subsea HVDC System Project (Project Lightning) in the UAE



SAMSUNG C&T
Engineering & Construction Group

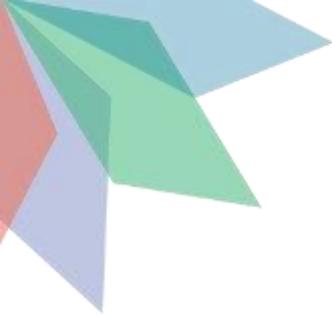


INDEX

- 1. Overview**
- 2. Customs Clearance**
- 3. Storage & Inland Transportation**
- 4. Offshore marine Transportation**
- 5. Site Receiving**
- 6. Material Handling (Transformer)**

Abbreviation

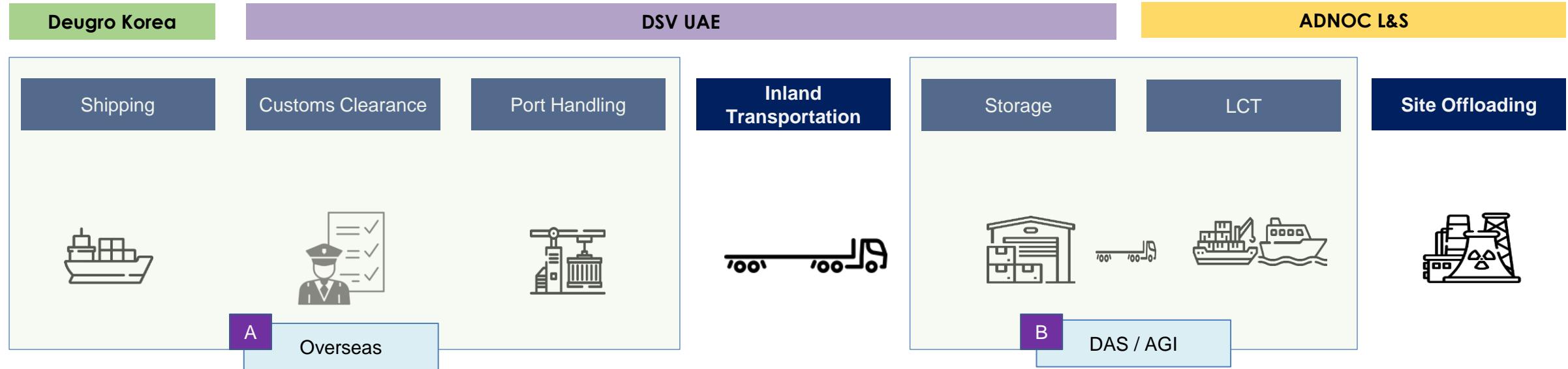
NO	Abbreviation	Description
1	LCT	Landing Craft Tank
2	CCU	Cargo Carrying Unit
3	MOSB	Mussafah Offshore Supply Base
4	DOT	Department of Transport
5	FRA	Formal Risk Assessment
6	SPMT	Self- Propelled Modular Transporter
7	MRR	Material Receiving Inspection Report
8	MRI	Material Receiving Inspection
9	SCT	Samsung C&T
10	JDN	Jan De Nul
11	ALS	ADNOC Logistics and Services
12	RORO	Roll on, Roll off
13	LOLO	Lifting on, Lifting off



1. Overview

1. Overview

Perform timely overseas and inland transportation for purchased materials.



1. You can get comprehensive perspective of logistics in HVDC project.
2. Overseas importation (A stage) needs for customs clearance and port handling.
3. Materials supplied in the UAE will be delivered to onshore Site.
However, offshore site materials require B stage through using LCT.
4. When cargo arrives at the site, it is received according to the **“Material Management Control Procedure”**.

	Port	Remarks
Abu Dhabi	Khalifa	Container
Abu Dhabi	Mina zayed	BULK
Dubai	Jebel Ali	CNTR/BULK

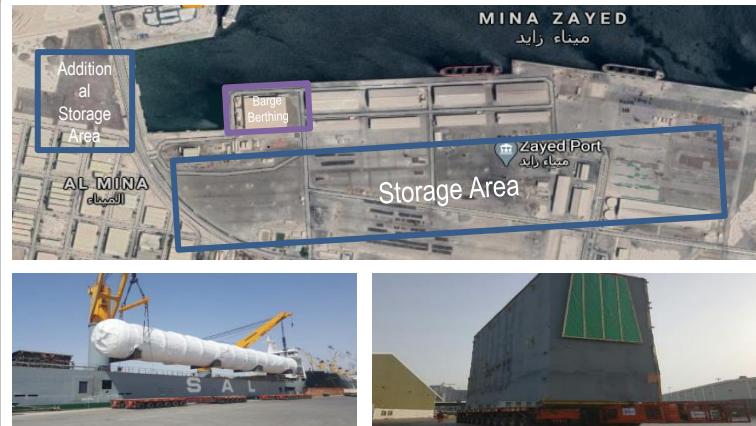
1. Overview

UAE Port Information

- Heavy equipments in the Zayed Port, general containers in the Khalifa Port (Abu Dhabi)
- In special case suppliers will use via Jebel Ali free zone (Dubai)
- Offshore (DAS/AGI) marine transportation by ADNOC L&S (Mussafah base)

Zayed Port (ADB)

- [Subsea Cable, Transformer, Land Cable](#)
- Heavy cargo operation
- RORO berth for LCT or Barge
- SCT/JDN secured “storage area”
(Land cable, Transformer)



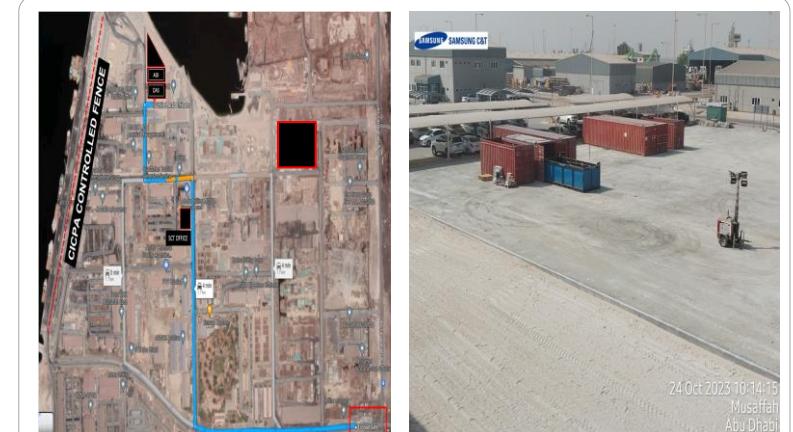
Khalifa Port (ADB)

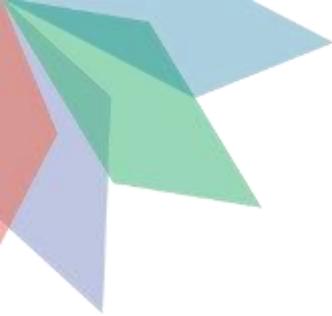
- [Most materials from overseas are imported in containers.](#)
- Container Terminal operation



Mussafah (ALS MOSB)

- [Island material transportation base](#)
- ADNOC L&S (ALS) operation
- Operation Yard (20,000sqm)
- CCU (Cargo Carrying Unit) - Container, CCU total 80 ea





2. Customs Clearance

2. Customs Clearance

Customs clearance is carried out in compliance with UAE customs regulations and appropriate shipping documents.



1. Consignee Name : Abu Dhabi Offshore Power Transmission Company Limited LLC.

- ADNOC (47150) was used as Customs code.

2. In case of import via Dubai, we will use ADOPT (Dubai) code.

- Contractor pay Duty and apply for reimbursement.

- e.g. ZENER (Fire Fighting materials), from Jebel Ali free zone

3. Once customs clearance is completed, the status will be shared to ADOPT for their information.

Location	Description	Code No
Abu Dhabi	ADNOC	47150
Abu Dhabi	ADOPT	1485718
Dubai	ADOPT	89901

2. Customs Clearance

eDAS (Attestation Invoice)

SAMSUNG SAMSUNG C&T COMMERCIAL INVOICE

PAGE NO.: 1 OF 2

Shipper / Exporter Samsung C&T Corporation 26, SANGIL-RO 6-GIL, GANGDONG-GU, SEOUL, REPUBLIC OF KOREA (05288)	No. & date of invoice HNCDC-ADCP-5CT-0001 DATE: 15-Feb-24												
Remarks HS CODE : as per invoice attached rider.													
PROJECT NO : AD164													
PO NO : 5000761114													
MANUFACTURER'S NAME & ADDRESS : DONG YANG CORROSION ENGINEERING CO.,LTD 213, TOEGYE-RO, JUNG-GU, SEOUL, KOREA													
Notify party DSV SOLUTIONS PSC M19 Mussahat 2nd round about after Al Jabbar Mussahat Abu Dhabi, UAE, P.O.Box 93971													
Port of loading PUSAN PORT KOREA	Port of Discharge Khaleea Port, ABU DHABI U.A.E.												
Carrier Y.M WIDTH/0032W	Selling on or about 15-Feb-24												
Mark and numbers of PKGS	Description of Goods PROJECT LIGHTING (HVDC) PORT OF DISCHARGE : Khalifa Port, ABU DHABI SHIPPER : SAMSUNG C&T CORPORATION CONSIGNEE : Abu Dhabi Offshore Power Transmission Company Limited LLC. PROJECT NO. : AD164 PROJECT NAME : Independent Subsea HVDC System Project (Project Lighting), UAE P/O NO. : 5000761114 ITEM DESCRIPTION : Cathodic Protection System (1st) PACKAGING : 10 PKGS NET WEIGHT : 2,481.00 KGS GROSS WEIGHT : 3,401.00 KGS DIMENSION : as per PL attached rider COUNTRY OF ORIGIN : KOREA, USA												
<table border="1"> <tr> <td>ITEM</td> <td>Cathodic Protection System (1st)</td> </tr> <tr> <td>QUANTITY</td> <td>10 PKGS</td> </tr> <tr> <td>TOTAL FOB VALUE</td> <td>USD 38,253.90</td> </tr> <tr> <td>FREIGHT</td> <td>USD 1,020.00</td> </tr> <tr> <td>INSURANCE</td> <td>USD 535.55</td> </tr> <tr> <td>TOTAL CIF VALUE</td> <td>USD 39,809.45</td> </tr> </table>		ITEM	Cathodic Protection System (1st)	QUANTITY	10 PKGS	TOTAL FOB VALUE	USD 38,253.90	FREIGHT	USD 1,020.00	INSURANCE	USD 535.55	TOTAL CIF VALUE	USD 39,809.45
ITEM	Cathodic Protection System (1st)												
QUANTITY	10 PKGS												
TOTAL FOB VALUE	USD 38,253.90												
FREIGHT	USD 1,020.00												
INSURANCE	USD 535.55												
TOTAL CIF VALUE	USD 39,809.45												
<p>Signed by</p> <p>Project Manager of Project Lighting Samsung C&T Corporation Project Lighting, HVDC UAE</p> <p>AECI16022024KQK6</p> <p>Visit https://mofa.gov.ae/qrcodeverify for details.</p>													

Customs Declaration

United Arab Emirates جمارك أبوظبي ABU DHABI CUSTOMS

Customs Declaration

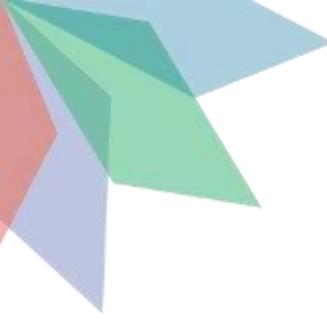
PORT TYPE	DEO TYPE	DEC DATE	DEC NO																																																																														
seaport	import	21-03-2024	20242101008226																																																																														
NET WEIGHT 2482 Kgs																																																																																	
IMPORTER/EXPORTER 1485718 ABU DHABI OFFSHORE POWER TRANSM																																																																																	
INTERCESSOR CO. 10 A22 RAIS HASSAN																																																																																	
COMMERCIAL REG NO. 3408 Kgs																																																																																	
MEASUREMENT 11.24																																																																																	
NO. OF PACKAGES 1 CTR																																																																																	
EXPORTER/EXPORTER TO 16 SAMSUNG C&T CORPORATION																																																																																	
CARRIER'S NAME 18 BL-AWB No. MANIF. 032E1 21-03-2024 13:00																																																																																	
PROJECT NAME 19 PROJECT LIGHTING (HVDC) PORT OF DISCHARGE 20 ABU DHABI																																																																																	
DISCHARGE SHIPPER/CONSIGNEE/PROJECT NO. PROJECT NAME BM04713399/230632178																																																																																	
DESTINATION 21 ABU DHABI																																																																																	
<table border="1"> <tr> <td>ITEM</td> <td>25 CURRENCY</td> <td>26 QUANTITY</td> <td>27 UNIT</td> <td>28 DESCRIPTION</td> <td>29 H.S. CODE</td> </tr> <tr> <td>31 TOTAL DUTY</td> <td>32 INCOME TYPE</td> <td>33 CIF LOCAL VALUE</td> <td>34 FOREIGN VALUE</td> <td>35 ORIGIN</td> <td>36</td> </tr> <tr> <td>0</td> <td>0</td> <td>30324 3,6725 USD</td> <td>8258.4 KOR</td> <td>OTHERS - OTHER ELECTRODE</td> <td>90300090</td> </tr> <tr> <td>23</td> <td>5</td> <td>441 3,6725 USD</td> <td>120 KOR</td> <td>Not plated</td> <td>50074910</td> </tr> <tr> <td>23</td> <td>5</td> <td>460 3,6725 USD</td> <td>125 KOR</td> <td>Weighing more than 150 g/m²</td> <td>56031400</td> </tr> <tr> <td>108</td> <td>5</td> <td>2160 3,6725 USD</td> <td>558 KOR</td> <td>Insulating fittings of plastics</td> <td>85472000</td> </tr> <tr> <td>6</td> <td>5</td> <td>103 3,6725 USD</td> <td>28 KOR</td> <td>Of copper alloy</td> <td>74122000</td> </tr> </table>				ITEM	25 CURRENCY	26 QUANTITY	27 UNIT	28 DESCRIPTION	29 H.S. CODE	31 TOTAL DUTY	32 INCOME TYPE	33 CIF LOCAL VALUE	34 FOREIGN VALUE	35 ORIGIN	36	0	0	30324 3,6725 USD	8258.4 KOR	OTHERS - OTHER ELECTRODE	90300090	23	5	441 3,6725 USD	120 KOR	Not plated	50074910	23	5	460 3,6725 USD	125 KOR	Weighing more than 150 g/m ²	56031400	108	5	2160 3,6725 USD	558 KOR	Insulating fittings of plastics	85472000	6	5	103 3,6725 USD	28 KOR	Of copper alloy	74122000																																				
ITEM	25 CURRENCY	26 QUANTITY	27 UNIT	28 DESCRIPTION	29 H.S. CODE																																																																												
31 TOTAL DUTY	32 INCOME TYPE	33 CIF LOCAL VALUE	34 FOREIGN VALUE	35 ORIGIN	36																																																																												
0	0	30324 3,6725 USD	8258.4 KOR	OTHERS - OTHER ELECTRODE	90300090																																																																												
23	5	441 3,6725 USD	120 KOR	Not plated	50074910																																																																												
23	5	460 3,6725 USD	125 KOR	Weighing more than 150 g/m ²	56031400																																																																												
108	5	2160 3,6725 USD	558 KOR	Insulating fittings of plastics	85472000																																																																												
6	5	103 3,6725 USD	28 KOR	Of copper alloy	74122000																																																																												
<table border="1"> <tr> <td>ITEM</td> <td>44 BENEFICIARY</td> <td>45 SOURCES</td> <td>46 CODE</td> <td>47 API</td> <td>48</td> </tr> <tr> <td>5337 TOTAL DUTY</td> <td>56 VAT</td> <td>58 EXCISE TAX</td> <td>59 HANDLING</td> <td>60 OTHER CHARGES</td> <td>61 RELEASE REF</td> </tr> <tr> <td>7575</td> <td>56</td> <td>568</td> <td>57</td> <td>59</td> <td>40</td> </tr> <tr> <td>5337 TOTAL DUTY</td> <td>56 VAT</td> <td>58 EXCISE TAX</td> <td>59 HANDLING</td> <td>60 OTHER CHARGES</td> <td>41 AGENCY</td> </tr> <tr> <td>7575</td> <td>56</td> <td>568</td> <td>57</td> <td>59</td> <td>41</td> </tr> <tr> <td>5337 TOTAL DUTY</td> <td>56 VAT</td> <td>58 EXCISE TAX</td> <td>59 HANDLING</td> <td>60 OTHER CHARGES</td> <td>42</td> </tr> <tr> <td>7575</td> <td>56</td> <td>568</td> <td>57</td> <td>59</td> <td>42</td> </tr> <tr> <td>5337 TOTAL DUTY</td> <td>56 VAT</td> <td>58 EXCISE TAX</td> <td>59 HANDLING</td> <td>60 OTHER CHARGES</td> <td>43</td> </tr> <tr> <td>7575</td> <td>56</td> <td>568</td> <td>57</td> <td>59</td> <td>43</td> </tr> <tr> <td>5337 TOTAL DUTY</td> <td>56 VAT</td> <td>58 EXCISE TAX</td> <td>59 HANDLING</td> <td>60 OTHER CHARGES</td> <td>44</td> </tr> <tr> <td>7575</td> <td>56</td> <td>568</td> <td>57</td> <td>59</td> <td>44</td> </tr> <tr> <td>5337 TOTAL DUTY</td> <td>56 VAT</td> <td>58 EXCISE TAX</td> <td>59 HANDLING</td> <td>60 OTHER CHARGES</td> <td>45</td> </tr> <tr> <td>7575</td> <td>56</td> <td>568</td> <td>57</td> <td>59</td> <td>45</td> </tr> </table>				ITEM	44 BENEFICIARY	45 SOURCES	46 CODE	47 API	48	5337 TOTAL DUTY	56 VAT	58 EXCISE TAX	59 HANDLING	60 OTHER CHARGES	61 RELEASE REF	7575	56	568	57	59	40	5337 TOTAL DUTY	56 VAT	58 EXCISE TAX	59 HANDLING	60 OTHER CHARGES	41 AGENCY	7575	56	568	57	59	41	5337 TOTAL DUTY	56 VAT	58 EXCISE TAX	59 HANDLING	60 OTHER CHARGES	42	7575	56	568	57	59	42	5337 TOTAL DUTY	56 VAT	58 EXCISE TAX	59 HANDLING	60 OTHER CHARGES	43	7575	56	568	57	59	43	5337 TOTAL DUTY	56 VAT	58 EXCISE TAX	59 HANDLING	60 OTHER CHARGES	44	7575	56	568	57	59	44	5337 TOTAL DUTY	56 VAT	58 EXCISE TAX	59 HANDLING	60 OTHER CHARGES	45	7575	56	568	57	59	45
ITEM	44 BENEFICIARY	45 SOURCES	46 CODE	47 API	48																																																																												
5337 TOTAL DUTY	56 VAT	58 EXCISE TAX	59 HANDLING	60 OTHER CHARGES	61 RELEASE REF																																																																												
7575	56	568	57	59	40																																																																												
5337 TOTAL DUTY	56 VAT	58 EXCISE TAX	59 HANDLING	60 OTHER CHARGES	41 AGENCY																																																																												
7575	56	568	57	59	41																																																																												
5337 TOTAL DUTY	56 VAT	58 EXCISE TAX	59 HANDLING	60 OTHER CHARGES	42																																																																												
7575	56	568	57	59	42																																																																												
5337 TOTAL DUTY	56 VAT	58 EXCISE TAX	59 HANDLING	60 OTHER CHARGES	43																																																																												
7575	56	568	57	59	43																																																																												
5337 TOTAL DUTY	56 VAT	58 EXCISE TAX	59 HANDLING	60 OTHER CHARGES	44																																																																												
7575	56	568	57	59	44																																																																												
5337 TOTAL DUTY	56 VAT	58 EXCISE TAX	59 HANDLING	60 OTHER CHARGES	45																																																																												
7575	56	568	57	59	45																																																																												
<table border="1"> <tr> <td>ROUTE</td> <td>51 CLEARING AGENT</td> <td>52 INSPECTION</td> </tr> <tr> <td>CE0680</td> <td>38</td> <td>46</td> </tr> <tr> <td>CE0680</td> <td>38</td> <td>47</td> </tr> <tr> <td>CE0680</td> <td>38</td> <td>48</td> </tr> <tr> <td>CE0680</td> <td>38</td> <td>49</td> </tr> </table>				ROUTE	51 CLEARING AGENT	52 INSPECTION	CE0680	38	46	CE0680	38	47	CE0680	38	48	CE0680	38	49																																																															
ROUTE	51 CLEARING AGENT	52 INSPECTION																																																																															
CE0680	38	46																																																																															
CE0680	38	47																																																																															
CE0680	38	48																																																																															
CE0680	38	49																																																																															
<table border="1"> <tr> <td>INVOICE NO.</td> <td>5338 DSV SOLUTIONS P.J.S.C</td> <td>54 PAYMENT METHOD</td> <td>55</td> </tr> <tr> <td>DATE</td> <td>21-03-2024 10:44</td> <td>ROUTE</td> <td>56</td> </tr> <tr> <td>BANK</td> <td>221088245 CR</td> <td>EXIT PORT</td> <td>57</td> </tr> <tr> <td>RECEIPT NO.</td> <td>21-03-2024 10:44</td> <td>EXIT TRANSACTION NO.</td> <td>58</td> </tr> <tr> <td>DATE</td> <td>66</td> <td>SECURITY OFFICER</td> <td>59</td> </tr> <tr> <td>BANK</td> <td>67</td> <td>OTHER REMARKS</td> <td>60</td> </tr> <tr> <td></td> <td>68</td> <td>TRANSPORT OFFICER</td> <td>61</td> </tr> <tr> <td></td> <td></td> <td>RELEASE DATE</td> <td>62</td> </tr> </table>				INVOICE NO.	5338 DSV SOLUTIONS P.J.S.C	54 PAYMENT METHOD	55	DATE	21-03-2024 10:44	ROUTE	56	BANK	221088245 CR	EXIT PORT	57	RECEIPT NO.	21-03-2024 10:44	EXIT TRANSACTION NO.	58	DATE	66	SECURITY OFFICER	59	BANK	67	OTHER REMARKS	60		68	TRANSPORT OFFICER	61			RELEASE DATE	62																																														
INVOICE NO.	5338 DSV SOLUTIONS P.J.S.C	54 PAYMENT METHOD	55																																																																														
DATE	21-03-2024 10:44	ROUTE	56																																																																														
BANK	221088245 CR	EXIT PORT	57																																																																														
RECEIPT NO.	21-03-2024 10:44	EXIT TRANSACTION NO.	58																																																																														
DATE	66	SECURITY OFFICER	59																																																																														
BANK	67	OTHER REMARKS	60																																																																														
	68	TRANSPORT OFFICER	61																																																																														
		RELEASE DATE	62																																																																														
62 63 64 65 66 67 68																																																																																	
63 64 65 66 67 68																																																																																	
64 65 66 67 68																																																																																	
65 66 67 68																																																																																	
66 67 68																																																																																	
67 68																																																																																	
68																																																																																	

Duty payment Status

[UAE, HVDC] PROJECT LIGHTNING

[HVDC-SCT] Duty Status

Shipment Invoice No	Invoice Date	BL No	Description of Cargo	Duty Status	VAT amount (AED)	Payment	Customs Code	Submission Document
HVDC-ADOP-PP1-0001	13Nov2023	ASLGM503217E01	Land Cable 320KV	1,609.553	1,690.031	ADNOC	47150	03Dec2023
HVDC-ADOP-PP1-0002	13Nov2023	ASLGM503218E01	Onshore Optical Fibre Cable	55,648	ADNOC	47150	03Dec2023	
HVDC-ADOP-HS-0001	02Dec2023	ENC109DASJEB1	Tank Plate & Accessories	77,562	SCT	89901	18Jan2024	
HVDC-ADOP-PP1-0003	21Dec2023	NO.2	320KV DC subsea Rigid Repair Joint	89,070.00	93,523.00	ADNOC	47150	18Jan2024
HVDC-ADOP-PP1-0006	21Dec2023	NO.4	Subsea Cable Pulling Stocking - HVDC & Telecom	10,341.00	10,858.00	ADNOC	47150	18Jan2024
HVDC-ADOP-PP1-0007	21Dec2023	NO.5	Repair Joint for Embedded Optical Fibre Unit	6,935.00	7,282.00	ADNOC	47150	18Jan2024
HVDC-ADOP-PLP-0008	21Dec2023	NO.3	Side Lane Booking (One Only) for Subsea HVDC & FO Cable	25,817.00	27,107.00	ADNOC	47150	18Jan2024
PRL-DAS-002-0-Lot1	01Dec2023	GOT36800012	Bottom Shields	129,401.00	129,401.00	ADNOC	47150	18Jan2024
PRL-DAS-002-0-Lot5	10Dec2023	GOT36800032	Seepage, Side Shields, Bottom Shields (part of valve)	532,948.00	532,948.00	ADNOC	47150	18Jan2024
PRL-DAS-001-0-Lot1	08Dec2023	GOT36800013-001	Smoothing Reactor					
PRL-MIR-001-0-Lot1	08Dec2023	GOT36800015-001	Smoothing Reactor					
PRL-MIR-001-0-Lot1	08Dec2023	GOT36800015-002	Smoothing Reactor	479,030.00	479,030.00	ADNOC	47150	25Jan2024
PRL-SHU-001-0-Lot1	08Dec2023	GOT36800014-001	Smoothing Reactor					
PRL-SHU-001-0-Lot1	08Dec2023	GOT36800014-002	Smoothing Reactor					
PRL-ZAK-001-0-Lot1	08Dec2023	GOT36800016-001	Smoothing Reactor					
PRL-ZAK-001-0-Lot1	08Dec2023	GOT36800016-002	Smoothing Reactor					
PRL-DAS-002-0-Lot2	04Dec2023	GOT36800018	Part of Valve	85,881.00	85,881.00	ADNOC	47150	25Jan2024
PRL-DAS-002-0-Lot3	05Dec2023	GOT36800031	Layer	1,208,282.00	1,208,282.00	ADNOC	47150	25Jan2024
PRL-DAS-002-0-Lot4	05Dec2023	GOT36800019	Layer					
PRL-DAS-002-0-Lot4	10Dec2023	GOT36800019	Layer	4,587,966.00	4,587,966.00	ADNOC	47150	25Jan2024
PRL-DAS-002-04-Lot4	10Dec2023	GOT36800019	Layer					
PRL-DAS-002-05-Lot4	10Dec2023	GOT36800019	Layer					
PRL-SHU-001-0-Lot1	19Dec2023	GOT36800021-001	Converter Reactor	156,934.00	156,934.00	ADNOC	47150	26Jan2024
PRL-DAS-003-01-Lot1	27Nov2023	GOT3680021-002	Converter Reactor	80,078.00	80,078.00	ADNOC	47150	26Jan2024
PRL-DAS-004-A	23Jan2024	1130103348	Optical Current Transducer E0078	98,571.00	103,499.00	ADNOC	47150	04Feb2024
PRL-DAS-004-A	23Jan2024	1130103354	Optical Current Transducer E0078	8,557.00	8,895.00	ADNOC	47150	04Feb2024
PRL-MIR-004-A	23Jan2024	1130103349	Optical Current Transducer E0078	114,977.00	120,725.00	ADNOC	47150	04Feb2024
PRL-MIR-004-A	23Jan2024	1130103355	Optical Current Transducer E0078	8,592.00	9,021.00	ADNOC	47150	04Feb2024
PRL-SHU-004-A	23Jan2024	1130103353	Optical Current Transducer E0078	98,571.00	103,499.00	ADNOC	47150	04Feb2024
PRL-DAS-004-A	23Jan2024	1130103356	Optical Current Transducer E0078	8,563.00	8,890.00	ADNOC	47150	04Feb2024
HVDC-ADOP-PP1-0004	17Dec2023	ASLGM503256E01	HVDC CABLE ACCESSORIES	328,001.00	344,400.00	ADNOC	47150	04Feb2024
HVDC-ADOP-PP1-0003	17Dec2023	ASLGM503258E01	DTS Monitoring / DAS Monitoring	472,729.00	472,729.00	ADNOC	47150	22Feb2024
PRL-DAS-002-0-Lot5	21Dec2023	GOT36800026	Seepage, Side Shields, Bottom Shields (part of valve)	692,886.00	692,886.00	ADNOC	47150	22Feb2024
PRL-SHU-003-02-Lot1	16Jan2024	GOT36800051	Converter Reactors	77,597.00	77,597.00	ADNOC	47150	22Feb2024
PRL-DAS-003-02-Lot1	16Jan2024	GOT36800028	Converter Reactors	197,974.00	197,974.00	ADNOC	47150	22Feb2024



3. Storage & Inland Transportation

3. Storage & Inland Transportation

Materials that arrived at the site should be operated according to the “Material Management Control Procedure(SJT-19LT-QLT-PL-023)-05.Oct.2022”

1. Storage standards are operated according to Material Storage classification (Annex J)
2. In particular, materials from Hitachi are operated according to the standards settled by the supplier. “operated' means that include all activities for offloading, material positioning and storage, once cargos arrive at the site”
 - It is specified in the “Case List” provided for each shipment.
3. Hitachi recommendation :
 - Indoor : closed, controlled +5° to +40° C, maximum humidity 85%.
 - Indoor heated : closed, controlled +15° to +25° C, maximum humidity 85%.
4. In addition, we plan to secure an indoor warehouse near MIR SHU by September.

Case List									
SHIPMENT REFERENCE NO:	PRL-ZAK-008-O								
DATE:	2/20/2024								
PROJECT:	Project Lightning-Zakum								
PO ref:	4572116646	EQ-078	DIMENSION (LxWxH) CM	VOLUME M3	NW-KGS	GRW-KGS	STACKABILITY		
365403	Indoor	Transducer Link With Connection	576	106	115	7.021	436	650	Stackable
365406	Indoor	Current Transducer DCOCT HF (AC)	149	114	63	1.070	177	300	Stackable
365407	Indoor	Current Transducer DCOCT HF (AC)	149	114	63	1.070	177	300	Stackable
365408	Indoor	Current Transducer DCOCT HF (AC)	149	114	63	1.070	177	300	Stackable
365409	Indoor	Current Transducer DCOCT HF (AC)	149	114	63	1.070	177	300	Stackable
365411	Indoor	Current Transducer DCOCT HF (DC)	149	114	63	1.070	177	300	Stackable
365412	Indoor	Current Transducer DCOCT HF (DC)	149	59	63	0.554	54	115	Stackable
365414	Indoor	DC OTM + Service Kit	57	37	47	0.099	8	15	Stackable
365415	Outdoor Covered	Grading Rings	151	151	70	1.596	95	205	Stackable
365416	Outdoor Covered	Grading Rings	151	151	70	1.596	95	205	Stackable
365417	Outdoor Covered	Grading Rings	151	151	70	1.596	95	205	Stackable
365418	Outdoor Covered	Grading Rings	151	151	70	1.596	95	205	Stackable
365419	Outdoor Covered	Grading Rings	151	151	70	1.596	95	205	Stackable
365420	Outdoor Covered	Grading Rings	151	151	70	1.596	95	205	Stackable
365422	Outdoor Covered	Grading Rings	151	151	70	1.596	95	205	Stackable
365423	Outdoor Covered	Grading Rings	151	151	70	1.596	95	205	Stackable

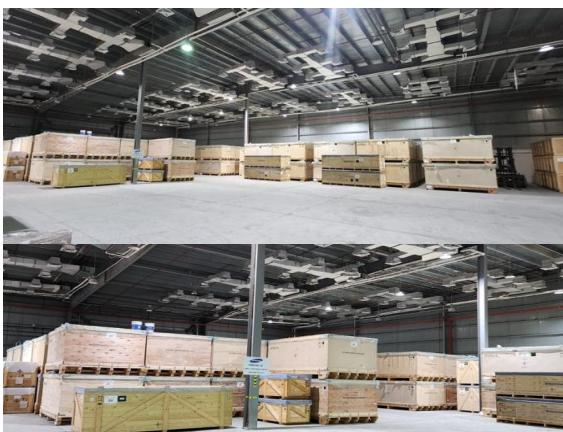
PROJECT LIGHTNING Material Management Control Procedure					
ANNEX J : Material Storage Classification					
Category	No.	Description	Class	Notes for Protection & Preservation	
Mechanical	1	Reactor, Tower, Drum & Tank	4B	a. To keep all openings covered or plugged b. To keep the flange faces protected from damage and/or rust. c. To monitor and maintain blanket purge as required.	
	2	Heat Exchanger	4B	d. To check and record purge pressure monthly, if delivered in purged condition.	
	3	Air Fin Cooler	4B*	e. To keep intact in vendor/manufacturer's original packing if shipped in the closed box.	
	4	Pump with Motor	2D or 4B*	f. To keep the unpainted machined surfaces protected from rust	
	5	Compressor, Turbine Driver & Engine Driver	4B*	g. To keep all openings covered or plugged. h. To follow vendor/manufacturer's storage instruction for preservative maintenance, including periodical turning, if any.	
				i. To check and record purge pressure monthly, if delivered in purged condition.	

Acceptance of deliverable indicates conformity with Project Company's requirements. It does not relieve the Contractor of any responsibility for errors or omissions in design as well as any condition under the contract.		<input checked="" type="checkbox"/> 1 Approved <input type="checkbox"/> 2 Approved with comments <input type="checkbox"/> 3 Reviewed with comments <input type="checkbox"/> 4 For information only <input type="checkbox"/> 5 Rejected		FOR APPROVAL	
Received on (dimmmyyyy): 5/OCT/2022		Reviewed on (dimmmyyyy): 7/NOV/2022		Reviewed by (First and Last Names): Dinesh Vohra	
Rev Date Description Prepared by Reviewed by Approved by					
Procurer: ABU DHABI NATIONAL OIL COMPANY 					
Company: ABU DHABI OFFSHORE POWER TRANSMISSION COMPANY LIMITED LLC 					
Owner's Engineer: SNC LAVALIN 					
Contractor: SAMSUNG C&T CORPORATION & JAN DE NUL CONSORTIUM 					
Project Title: INDEPENDENT SUBSEA HVDC SYSTEM PROJECT (Project Lightning) IN U.A.E.					
Drawing/Document Title: Material Management Control Procedure					
Drawing/Document No. SJT-19LT-QLT-PL-023 Rev D					

3. Storage & Inland Transportation

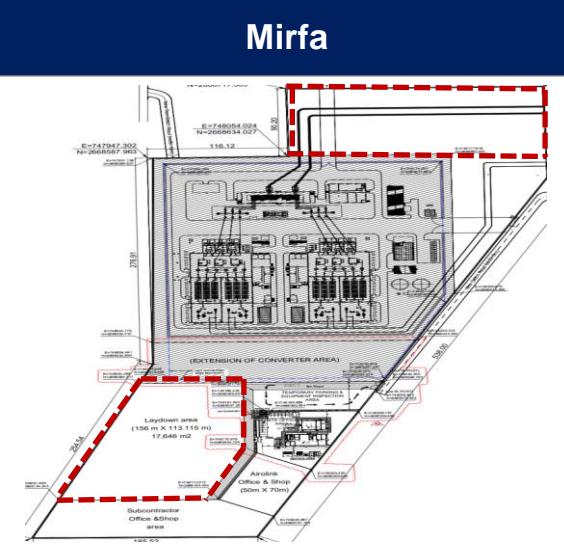
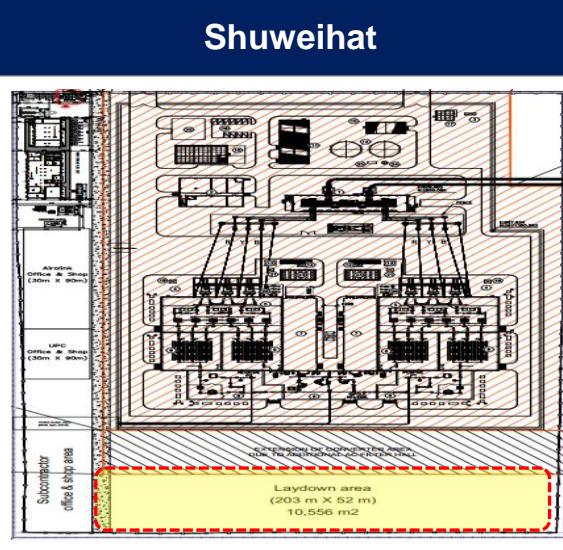
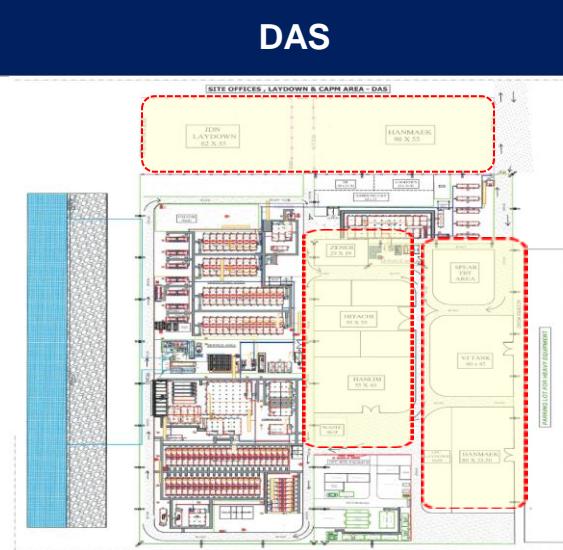
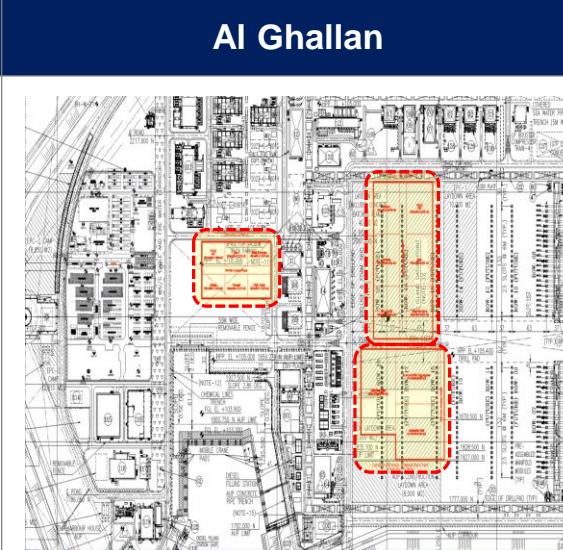
Delivery locations are designated and operated according to the characteristics of each site and the conditions of storage.

Indoor warehouse	Outdoor Yard	Zayed port Yard	MOSB Yard
<ul style="list-style-type: none">- Temp controlled Indoor warehouse- Hitachi/Siemens electrical Materials- Mussafah Area (6,000sqm)- 5km from MOSB*SHU Indoor warehouse : 30th/OctMIR Indoor warehouse : End of Nov	<ul style="list-style-type: none">- Temporary storage for DAS/AGI materials (eg. Hitachi)- Mussafah Area (8,000sqm)- 10km from MOSB* Timely delivery as per installation time in sites	<ul style="list-style-type: none">- Temporary storage for DAS/AGI Transformer- Port Storage (1,100sqm)- While storage, preservation activity* Timely delivery as per installation time in sites	<ul style="list-style-type: none">- Temporary storage for DAS/AGI related materials- MOSB Storage (20,000sqm)- Waiting for Loading operation* Timely delivery as per installation time in sites



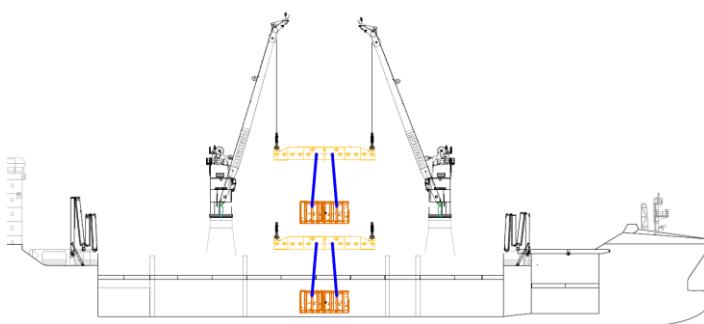
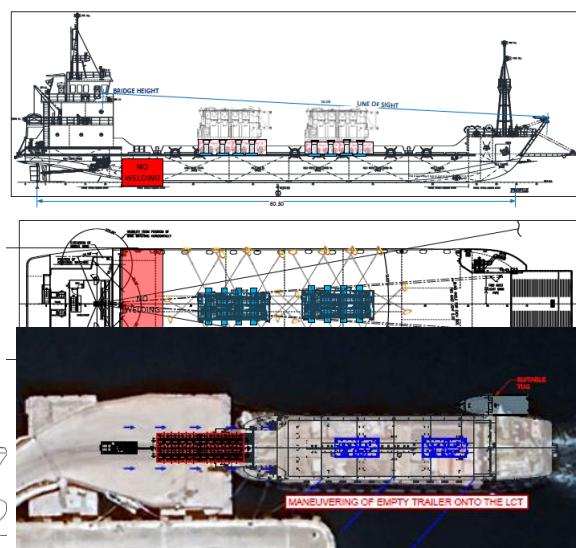
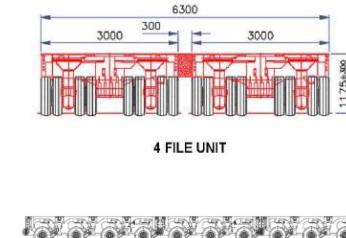
3. Storage & Inland Transportation

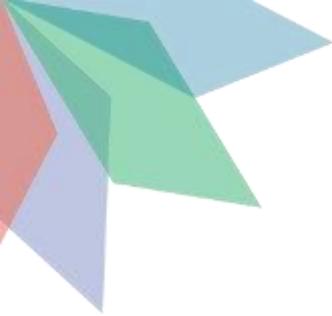
These are the operation plans laydowns in each site.
Laydowns will be operated flexibly depending on the construction sequence.

Mirfa	Shuweihat	DAS	Al Ghallan
 <p>1. 35,006 m² (373m x 93m) 2. For efficiency of Transformer delivery and to minimize interference, access road will be adjusted. 3. Storage container which is certified fire protection and equipped AC will be prepared in each site for chemical, dangerous cargo.</p>	 <p>1. 10,556 m² (203m x 52m) 2. Transportation plan must be managed effectively due to narrow space. 3. Storage container which is certified fire protection and equipped AC will be prepared in each site for chemical, dangerous cargo.</p>	 <p>1. 35,840 m² (280m x 120m) 2. Ground condition is good for stable operation. 3. Sequence operation efficiency must be considered. 4. Storage container which is certified fire protection and equipped AC will be prepared in each site for chemical, dangerous cargo.</p>	 <p>1. 47,198 m² (3 areas) 2. 3 laydowns need to be managed separately. 3. Security must be strengthened. Efficiency of sequence operation efficiency must be considered.</p>

3. Storage & Inland Transportation

Heavy equipments (Transformer, Spare Cable) transportation need a special permit (more than 90TON) from DOT (Department of Transport).

Mina Zayed port Muggaraq Port	Unloading/Storage	LCT / Barge	Inland Transport	Site Offloading
<ul style="list-style-type: none">- Heavy vessel in Mina Zayed Port (DAS/AGI/MIR)- SHU TR in the Muggaraq port  	<ul style="list-style-type: none">- Offloading by Vessel crane- Modular Trailer- Stool & Beam for Storage- Preservation (DAS/AGI)	<ul style="list-style-type: none">- Proper Vessel arrange (LCT or Barge)- Loading onto Vessel- Sea fastening• MIR to Mussafah Jetty, Inland transportation• DAS/AGI to Island 	<ul style="list-style-type: none">- MIR/SHU- From Mussafah Jetty to Site by Road• Road survey• DOT Permit  	<ul style="list-style-type: none">- Preparation of Stool/Beam- Laydown Compaction- Secure access Road- Storage / Preservation



4. Offshore Marine Transportation (ADNOC L&S)

4. Offshore Marine Transportation

Comply with ADNOC Offshore HSE standards and carry out yard operation, loading, and marine transportation in accordance with MOSB internal procedures.



4. Offshore Marine Transportation

Through smooth communication with ADNOC L&S(ALS), we strive to comply with safety regulations and ensure timely transportation. In island, ALS will handle same procedure for offloading, inland transportation and site offloading.



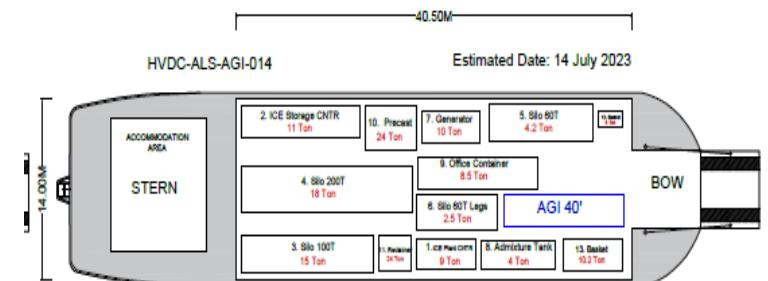
4. Offshore Marine Transportation

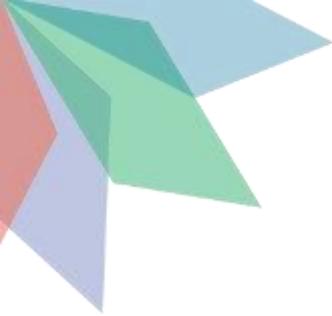
The main marine transport uses LCT (Landing Craft), and safety is the top priority during operation through ADNOC port control.



[Voyage Transit Time]

From	To	Hours
MOSB	DAS	20 hrs
MOSB	AGI	10 hrs



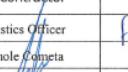


5. Site Receiving

5. Site Receiving

Materials arriving on site are operated according to the “Material Management Control Procedure(SJT-19LT-QLT-PL-023)-05.Oct.2022”

- Upon arrive the materials, inspection (with QA/QC) is performed while unpacking at the time of installation.
- Visual inspection is performed on materials that arrive before construction, and when materials are released during construction, inspection is performed as above.
- Upon request for inspection, following document will be attached
 - Material Inspection Request (Logistic – Construction – Quality – OE)
 - Material Receiving inspection Report
 - Materials Receiving Inspection
 - ITP (Inspection and Test plan)
 - MAR (Material Approval Request)
 - Product test certificate
- As per the site requirement relevant Sub Con Submitting MRS (Material Request Slip) with relevant drawings.
- After verification and approval from Construction Team proceeding for MIS (Material Issue Slip) as per the availability of materials.
- Physical issuance of materials to as per the MIS and getting receiving acknowledgement from Sub con representative in MIS

REQUEST FOR RECEIVING INSPECTION			
	Project Title:	INDEPENDENT SUBSEA HVDC SYSTEM PROJECT (Project Lightning) IN U.A.E.	
	MATERIAL INSPECTION REQUEST		
MIR No.	AD164-SCT-SCT-MIR-30H-F-80002	Request Date	13-March-2024
Discipline	Fire Fighting	Manufacturer/Supplier	Power Plastic
Subcontractor	SCT Direct	Propose Inspection Date & Time	14-March-24 @ 09:00 AM
Relevant ITP/Pkg/System	AD164-ITP-00H-F-8001_Rev.B	Inspection Location	SCT Logistics Container
No.	Description of Inspection	Quantity	Remarks
1	Material Inspection – UPVC Pipe & Fittings UPVC Pipe 8"x2m EPC40 UPVC Puddle Flange 8" (218.8 X 7.8MM X L-400MM)	2 Ea 3 Ea	
Reference (*to be attached on this MIR) 1. Relevant Drawing: 2. Approvals: AD164-MAR-00H-E-80017 Rev. A			
Comments: <i>MATERIAL SHALL BE STORED AS PER MANUFACTURER RECOMMENDATION.</i>			
Accepted <input checked="" type="checkbox"/> Accepted with comments <input type="checkbox"/> Rejected <input type="checkbox"/> Cancelled <input type="checkbox"/>		CONTRACTOR	
Designation	Subcontractor	Construction	Quality
Name	Nichole Cometa	<i>Firophilene fury</i>	<i>SAMSUNG C&T</i>
Signature		<i>Jerald Paulino</i>	<i>RAJESHA KRUTHIKA</i>
Date	13-March-2024	13/03/2024	13-MAR-24 13/03/2024

SJT-19LT-Q-PL-015-A004(0)

5. Site Receiving

Materials arriving on site are operated according to the “Material Management Control Procedure(SJT-19LT-QLT-PL-023)-05.Oct.2022”

Delivery Plan / Schedule



Supplier

SUPPLIER / VENDOR

- Supplier to provide the delivery plan which includes the following:
 - Packing List
 - Delivery Truck Quantity
 - ETA at Site
 - Target Delivery Completion



SCT PREPARATION

- Review packing List
- Material Storage Code
- Alignment of Equipment availability vs the proposed delivery plan of the Supplier / Vendor
- Unloading Location



HSE SAFETY

- HSE standards -to ensure safety of workplace and organized process in receiving materials, equipment, and personnel on-site.
 - Verification and Documentation: Methodology > MS / FRA
 - Hazard Assessment
 - Control of Entry Points
 - Inspection and Compliance
 - Clear Communication

5. Site Receiving

Material Receiving



PACKING LIST, LOADING & UNLOADING CHECKLIST

- Collection of Packing List, Delivery Notes, and other shipping documents
- Collection of Loading and Unloading Checklist

PERMITS, LIFTING EQUIPMENT & MANPOWER

- Permit to Work [PTW]
- Tool Box Talk
- Inspection of Lifting Equipment and Lifting Gears

MATERIAL RECEIVING REPORT & INSPECTION

- SCT to conduct material receiving inspection
- Thorough checking of Material received vs. Packing list.
- SCT to provide MRR if cargo found in good condition and acceptable

5. Site Receiving

Request for Inspection



MATERIAL IN GOOD CONDITION

- If the cargo is found to be in good condition and the quantity matches packing list, proceed with the request for inspection

REQUEST FOR RECEIVING INSPECTION		
INDEPENDENT MARINE LOGIC SYSTEM PROJECT (Project Integrated IN A.R.E.)		
MATERIAL INSPECTION REQUEST		
MRN No.	AD16-SCT-SC1-A08-3019-F-0002	Request Date
Description	Fire Fighting	Date of Inspection
Sub-contractor	SCT Direct	Proposed Inspection Date
Recoverer/Third Parties	AD16-ITP-GOH-F-001, Rev. 6	Inspection Location
ITP No.		SCT Logistics Center
Description of Inspection		
1. Material Inspection - UPVC Pipe & Fittings	Quantity	Remarks
UPVC Pipe & Fittings	15m	
UPVC Pipe & Fittings	15m	
Reference (*to be attached on this MRN)		
1. Reference Drawing:		
2. Approval: AD16-MAR-001-E-05017 Rev. A		
Comments:		
MATERIAL SHALL BE STORED AC PER MANUFACTURER'S SPECIFICATIONS.		
Accepted <input checked="" type="checkbox"/> Accepted with comments <input type="checkbox"/> Rejected <input type="checkbox"/> Cancelled <input type="checkbox"/>		
Sub-contractor	Contractor	Quality
Designation	Logistics Officer	Signature Key
Name	Nikunj Patel	RE-CANL
Signature		
Date	13-Nov-2024	13-Nov-2024
SIT-INL-QT-PL-015-AMR01		

POWER PLASTIC FACTORY LLC		
Address:	10214 Model 10, Tariq Town	Phone:
Fax:	+971 4 762442	E-mail:
Mobile:	+971 50 1234567	Web:
Email: info@powerplasticgroup.com Website: www.powerplasticgroup.com		
SAFETY DATA SHEET		
Date of Production: 05/03/2023		
Date of Expiry: 10/09/2024		
HEAVY DUTY SOLVENT CEMENT FOR UPVC PIPES & FITTINGS		
Product Name - POWER BOND - HD 1007		
Manufacturer & Supplier - Power Plastic Factory LLC		
Fast Curing PVC Solvent cement adhesive for pipes & fittings. It has excellent gap filling properties and specially recommended where a soluble gas exist between the pipe and fitting.		
Physical Properties		
Colour	Clear	
Resin	Virgin PVC	
Brookfield Viscosity	13000 cps	
Odour	Odour of Terpenes/Alcohols, Cyclohexanone & Methyl Ethyl Ketone	
Flammability	Highly Flammable	
Flash Point	Group - 2B - 27°C	
Water Resistance	No resistance to esters, ketones & chlorinated hydrocarbons	
Solvent Resistance	- Not resistance to esters, ketones & chlorinated hydrocarbons	
Hazards Identification		
Hazardous substances present on their own:		
Hazard Category:		
F Flammable		
Xn - Harmful		
This product is classified: Flammable, Irritant.		
Possibility of irritation to the eyes and skin. Possibility of acute, lethal, noxious effects with symptoms of slight poisoning by inhalation and swallowing.		



DOCUMENTS TO PREPARE

- Material Inspection Request (Logistic – Construction – Quality – OE)**
 - Material Receiving inspection Report
 - Materials Receiving Inspection
 - ITP (Inspection and Test plan)
 - MAR (Material Approval Request)
 - Product test certificate [MTC, SDS, TDS]

JOINT INSPECTION WITH OE

- Joint inspection together with OE to ensure that material received at site meet the required standards and specifications as per ITP / MAR

5. Site Receiving

Overage, Shortage & Damage Report



OVERAGE, SHORTAGE, DAMAGE

- If found any overage, shortage, damage, during receiving, SCT to file an OSDR documentation.
- Thorough inspection carried out together with Engineering Team, and QA/QC Team

DOCUMENTS TO PREPARE

- Overage, Shortage, Damage Report Form
- Commercial Invoice / Packing List
- Delivery Note
- Photo Proof

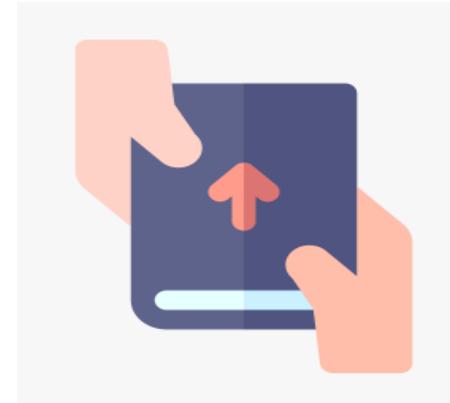


REVIEW and ACTION

- OSD Report shall be sent to the QA/QC add Contractor's PMO for subsequent action such as claim to the Vendor / Supplier

5. Site Receiving

Material Request / Issuance Slip



MATERIAL REQUEST SLIP

- Request of materials for Site Requirement [SUBCON]
- ➤Material Request Slip Creation
- ➤Approval Process
- ➤Stock Availability
- ➤Recordkeeping

MATERIAL ISSUANCE SLIP

- SCT provide Material Issuance Slip
- ➤Verification and Approval
- ➤Material Preparation
- ➤Material Handover and Acknowledgement

PHYSICAL CHECK OF ISSUED MATERIALS

- Joint Physical check by SCT and relevant SUBCON to be carried out to ensure that the issued materials are in good condition

5. Site Receiving

Material Storage & Preservations



HANDLING & PRESERVATION

- SCT to follow and implement the Manufacturer's storage instructions and guidelines
- OUTDOOR,
- OUTDOOR COVERED,
- INDOOR

INDOOR MATERIALS

- The Manufacturer's storage instruction or guide shall be reviewed before placing in storage and followed.
- The air temperature shall be maintained as per Manufacturer's Guidelines

OUTDOOR & OUTDOOR COVERED

- Review of Manufacturer's Storage Instructions and Guidelines
- SCT to ensure that all OUTDOOR & OUTDOOR COVERED cases or boxes [HITACHI] are properly covered with tarpaulin or plastic sheeting.

5. Site Receiving

FORMS

Loading & unloading checklist

Unloading Check List		
1. Shipment No		
2. Description	SCT Project MTR	
3. Arrival Date	May 11, 2024	
4. Type of Cargo	<input type="checkbox"/> CNTN <input checked="" type="checkbox"/> BULK	
5. Vehicle Type	Trailer	
6. Vehicle No	29132 (Q82 ton)	
7. Inspection date	May 11, 2024	
8. Inspector(supervisor)	N. Cometa	
Cat.	Inspection Items	Check
Site (After arrival to site)		
General	Are all involved personnel wearing appropriate PPE?	OK
	Is the vehicle/ trailer combination type suitable for the load type, size and mass?	OK
	Is the vehicle/ trailer appropriately positioned, level and stable with park brake engaged?	OK
	Are appropriate people and equipment available at location-to do the job safely (Training / TPC)	OK
	If a special lifting device or crane is required for cargo, have the corresponding work permit and lifting plan been prepared and approved?	N/A
	Have the load and restraints been kept safely?	OK
Unloading	Are top-loaded materials securely secured and wooden stick placed under the material to fork insert or rigging for unloading?	OK
	Have adequate measures been taken to prevent the cargo from moving or falling when the cargo restraints are removed?	OK
	Is there suitable equipment available to unload the material?	OK
	Are stoppers installed on both wheels when the machine is stopped?	OK
	Is the opposite side of the forklift fork insert fully barricaded and under flagman control?	OK
	When unloading materials using a crane, are barricades installed within the crane radius and under the control of a flagman?	N/A
When unloading with a forklift, are materials lifted without blocking the operator's view?		

Loading Check List			
1. Shipment No	HVPC-ADNOC-SIM-0007	2. Description	EMBEDDED PLATES & ACC
3. Loading Date	22 MAY 2024	4. Type of Cargo	<input type="checkbox"/> CNTN <input checked="" type="checkbox"/> BULK
5. Delivery Location	TRAILER TRUCK	6. Vehicle No	50693 (0.6 ton)
7. Inspection date	22 May 2024	8. Inspector(supervisor)	N. Cometa
		9. Driver Name	QASIM KHAN
Cat.	Inspection Items	Check	
Loading in the laydown or port (Before depart)			
Driver	Has the driver properly trained in safe driving and PPE requirement complied	OK	
	Has destination information and the documents required to enter the CICPA / site area?	OK	
	Is the vehicle/ trailer combination type suitable for the load type, size and mass?	OK	
	Is the vehicle/ trailer appropriately positioned, level and stable with park brake engaged?	OK	
	Are appropriate people and equipment available to load/unload? (Training & TPC)	OK	
	Does any of the cargo require special lifting devices or cranes and all requirement captured in the permit.	OK	
General	Have the load and restraints been thoroughly checked prior to the journey?	OK	
	Is cargo clean, well packed and secured in cartons or appropriate packaging or container?	OK	
	Are top loaded / Stacked material secured properly with wooden stick spacers provided under the material for ease in unloading using forklift and/ rigging	OK	
	Is documentation (e.g. manifest etc.) completed for all cargo being moved?	OK	
	Are all necessary permits and licenses held by the driver?	OK	
	Is the height, length and width of the load within legal limits / special requirements identified , special approval taken and complied.	OK	
Loading	Is the load restraint system suitable to safely restrain the load?	OK	
	Is the total weight of the cargo within the vehicle's carrying capacity/axle loadings?	OK	
	Is the load positioned to maintain vehicle stability, steering and braking?	OK	

Material checklist

ANNEX I : MATERIAL CHECK SHEET					
Project Title:	INDEPENDENT SUBSEA HVDC SYSTEM PROJECT (Project Lightning) IN U.A.E.		Project Manager:		
Material Check Sheet					
Storage Area:	SCT LAYDOWN		Checked Date: 26-April-24		
Checked by:	J. HUSSAIN MAMOOTH		Controller: Eddel (Joe)		
Check Items	Result	Pass	Fail	N/A	Remarks
1. Entrance restricted		/	/	/	
2. Clean and tidy condition with storage level		/	/	/	
3. Properly protected against inclement weather.		/	/	/	
4. Stored by material type and ID posted		/	/	/	
5. Safe against fire/arson		/	/	/	
6. Well drained and no soaked in water		/	/	/	
7. Warehouse for sensitive materials is in temp. humidity control.		/	/	/	
8. No water evidence inside the warehouse		/	/	/	
9. No rodents inhabited		/	/	/	
10. No contact directly to the ground		/	/	/	
11. No Damage, rust, soil, dirt, sand, etc. on the surface		/	/	/	
12. No pipe ends open		/	/	/	
13. No rust, water inside pipe, tube or equipment		/	/	/	
14. Protected on the machined surface		/	/	/	
15. Nonconforming items are separated and hold tagged.		/	/	/	

- For Loading and unloading checklist, this documents not only protect the cargo and the parties involved in unloading works but also uphold the safety standards, and ensuring the compliance with the transportation and safety regulation.

- For unloaded cargo, a visual check is performed on the packaging and damage status of the materials.

5. Site Receiving

FORMS

MRR

RECEIVING INSPECTION REPORT (FORM)

Project Title: INDEPENDENT SUBSEA HVDC SYSTEM PROJECT (Project Lightning) IN U.A.E.		SAMSUNG C&T				
MIR No. AD164-SCT-SCT-MIR-30H-F-80002		MRIR No. AD164-SCT-SCT-MRIR-30H-F-8002				
Discipline Fire Fighting		Manufacturer/Supplier Power Plastic				
Subcontractor SCT Direct		Inspection Date & Time 14-March-2024 @ 09:00 AM				
Relevant ITP/Pkg/System AD164-ITP-00H-F-8001_Rev.B		Inspection Location SCT Logistics Container				
Package Type <input type="checkbox"/> Loosened <input type="checkbox"/> Container <input type="checkbox"/> Wooden <input type="checkbox"/> Carton <input type="checkbox"/> Others						
No.	Packing Condition	Shortage	Damage	Discrepancy	Storage	Remarks
1.	<input type="checkbox"/> Normal <input type="checkbox"/> Bad	<input type="checkbox"/> Yes <input type="checkbox"/> No				
2.	<input type="checkbox"/> Normal <input type="checkbox"/> Bad	<input type="checkbox"/> Yes <input type="checkbox"/> No				
3.	<input type="checkbox"/> Normal <input type="checkbox"/> Bad	<input type="checkbox"/> Yes <input type="checkbox"/> No				
4.	<input type="checkbox"/> Normal <input type="checkbox"/> Bad	<input type="checkbox"/> Yes <input type="checkbox"/> No				
5.	<input type="checkbox"/> Normal <input type="checkbox"/> Bad	<input type="checkbox"/> Yes <input type="checkbox"/> No				
6.	<input type="checkbox"/> Normal <input type="checkbox"/> Bad	<input type="checkbox"/> Yes <input type="checkbox"/> No				
7.	<input type="checkbox"/> Normal <input type="checkbox"/> Bad	<input type="checkbox"/> Yes <input type="checkbox"/> No				
8.	<input type="checkbox"/> Normal <input type="checkbox"/> Bad	<input type="checkbox"/> Yes <input type="checkbox"/> No				
9.	<input type="checkbox"/> Normal <input type="checkbox"/> Bad	<input type="checkbox"/> Yes <input type="checkbox"/> No				
10.	<input type="checkbox"/> Normal <input type="checkbox"/> Bad	<input type="checkbox"/> Yes <input type="checkbox"/> No				
11.	<input type="checkbox"/> Normal <input type="checkbox"/> Bad	<input type="checkbox"/> Yes <input type="checkbox"/> No				
12.	<input type="checkbox"/> Normal <input type="checkbox"/> Bad	<input type="checkbox"/> Yes <input type="checkbox"/> No				
Reference (*to be attached on this MRR)						
1. Relevant Drawing:						
2. Approvals: AD164-MAR-00H-E-80017 Rev. A						
Comments:						
Accepted <input type="checkbox"/>		Accepted with comments <input type="checkbox"/>		Rejected <input type="checkbox"/>		Cancelled <input type="checkbox"/>
Subcontractor		CONTRACTOR		Client/OE		
Designation	Logistics Officer	Construction	Quality			
Name	Nichole Cometa	SAMSUNG C&T				
Signature		Jerald Paulino				
Date	13-March-2024	14-MAR-2024		14-MAR-2024		

SJT-19LT-QLT-PL-015-A005(0)

MRI

MATERIAL RECEIVING INSPECTION

Project Title: INDEPENDENT SUBSEA HVDC SYSTEM PROJECT (Project Lightning) IN U.A.E.		SAMSUNG C&T			
Contractor: SAMSUNG C&T Corporation Ltd.		Project Code: AD164			
Subcontractor: SCT-Direct		RFI No.: AD164-SCT-SCT-MRI-30H-F-8002			
Discipline: Fire Fighting		ITR No.: N/A			
Location Details: SCT Electrical Container		Relevant ITR Item No.: N/A			
		Date: 14-March-2024			
P/O NO.	SCT-19LT-PIC-LPO-123	Items/Materials Name: UPVC Pipe & Fittings	Vendor Name: Power Plastic		
Receiving Inspection Report No.	AD164-SCT-SCT-MRI-30H-F-8002	Purchase Request No.: SHU-PR-F-002	Quantity: 5 Ea		
Rev.	Date	Description	Prepared by	Reviewed by	Approved by
Procurer: ABU DHABI NATIONAL OIL COMPANY					
 Company: ABU DHABI OFFSHORE POWER TRANSMISSION COMPANY LIMITED LLC					
 Owner's Engineer: SNC LAVALIN					
 Contractor: SAMSUNG C&T CORPORATION & JAN DE NUL CONSORTIUM					
Project Title: INDEPENDENT SUBSEA HVDC SYSTEM PROJECT (Project Lightning) IN U.A.E.					
Drawing/Document Title: [S/M/D/A] ITP FOR FIRE FIGHTING SYSTEM (INSTALLATION)					
Drawing/Document No. AD164-ITP-00H-F-8001					
Comments:					
	Subcontractor QA/QC	CONTRACTOR		Construction	Quality
Designation	SCT Logistics	SAMSUNG C&T			
Name	Nichole Cometa	Jerald Paulino			
Signature		Jerald Paulino			
Date	13-March-2024	14-MAR-2024		14-MAR-2024	

AD164-ITP-00H-F-8001-A004(0)

ITP

FOR APPROVAL

Acceptance of deliverable indicates conformity with Project Company's requirements. It does not relieve the Contractor of any responsibility for errors or inaccuracies in design as well as any obligation under his contract.

Received on (dd/mm/yyyy): 8/OCT/2023

Reviewed on (dd/mm/yyyy): 20/OCT/2023

Reviewed by (First and Last Name): Karlappe Machangada

1 Approved
 2 Approved with comments
 3 Reviewed with comments
 4 For information only
 5 Rejected

FOR APPROVAL

ABU DHABI NATIONAL OIL COMPANY

Company: ABU DHABI OFFSHORE POWER TRANSMISSION COMPANY LIMITED LLC

Owner's Engineer: SNC LAVALIN

Contractor: SAMSUNG C&T CORPORATION & JAN DE NUL CONSORTIUM

Project Title: INDEPENDENT SUBSEA HVDC SYSTEM PROJECT (Project Lightning) IN U.A.E.

Drawing/Document Title: [S/M/D/A] ITP FOR FIRE FIGHTING SYSTEM (INSTALLATION)

Drawing/Document No. AD164-ITP-00H-F-8001

Comments:

SHU ✓
MIR ✓
DAS ✓
AGI ✓

Rev. B

MAR

FOR REVIEW

Acceptance of deliverable indicates conformity with Project Company's requirements. It does not relieve the Contractor of any responsibility for errors or inaccuracies in design as well as any obligation under his contract.

Received on (dd/mm/yyyy): 14/SEP/2023

Reviewed on (dd/mm/yyyy): 12/OCT/2023

Reviewed by (First and Last Name): OE(Karthik)

1 Approved
 2 Approved with comments
 3 Reviewed with comments
 4 For information only
 5 Rejected

ABU DHABI NATIONAL OIL COMPANY

Company: ABU DHABI OFFSHORE POWER TRANSMISSION COMPANY LIMITED LLC

Owner's Engineer: SNC LAVALIN

Contractor: SAMSUNG C&T CORPORATION & JAN DE NUL CONSORTIUM

Project Title: INDEPENDENT SUBSEA HVDC SYSTEM PROJECT (Project Lightning) IN U.A.E.

Drawing/Document Title: [S/M/D/A] MAR for ELECTRICAL PVC CONDUIT PIPES & FITTINGS (EPC 40) and SPACER AS PER ASTM/NEMA STD. (POWER PLASTICS UAE)

Drawing/Document No. AD164-MAR-00H-E-80017

Comments:

SHU ✓
MIR ✓
DAS ✓
AGI ✓

Rev. A

5. Site Receiving

FORMS

MATERIAL RECEIVING REPORT



UAE, PROJECT LIGHTNING (HVDC SYSTEM)	
PRELIMINARY MATERIAL RECEIVING REPORT (MRR)	



MRR NO:	SHIPMENT NO:	SRN NO:	VENDOR:	DISCIPLINE:	CIVIL/MECH/INST/PIP/COMM
PO No:	Package No:	P/M Code:	Item Name:	PO NO:	
Description				RECV'D DATE:	
Size	Act RCVD Qty	Remarks			
Prepared by Received, Checked and Reviewed by Approved BY					
Signature:	Name:	Name:	Name:		
Position:	Document Controller	Material Controller	Material & Logistic Manager		
Date:					

MATERIAL REQUEST SLIP



UAE, PROJECT LIGHTNING (HVDC SYSTEM)	
MATERIALS REQUEST SLIP (MRS)	



Contractor	Ref No.				
Subcontractor	Issued date				
Purpose/Remarks	Exp date				
Location	Contact No				
Approve by	Signature				
No. qty	SKU	Description(Be specific:model,size,color,etc)	Size	Date/time	Remarks
Comments					

Approved	Received by :	Sub-Contractor	Remarks
Designation	LOGISTICS		
Name			
Signature			
Date			

MATERIAL ISSUANCE SLIP

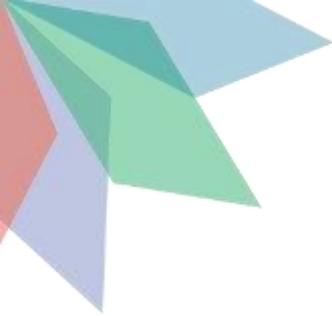


UAE, PROJECT LIGHTNING (HVDC SYSTEM)	
MATERIALS ISSUANCE SLIP (MIS)	



Contractor	Ref No.				
Subcontractor	Issued date				
Purpose/Remarks	Exp date				
Location	Contact No				
Approve by	Signature				
No. qty	SKU	Description(Be specific:model,size,color,etc)	Size	Date/time	Remarks
Comments					

Approved	Received by :	Sub-Contractor	Remarks
Designation	LOGISTICS		
Name			
Signature			
Date			



6. Material Handling (Transformer)

6. Material Handling

Transformer Delivery Schedule [DAS Cluster]

- This transformer is manufactured in factory situated in Sweden.
- Hitachi transports to the relevant site. (SHU : Site, DAS: Zayed Port)
- Before arrival at the site, SCT prepares for receiving by submitting MS, approval and conducting FRA.
- Temporarily it is kept at Site or Zayed port before TR building complete
- During the storage, preservation is implemented according to Hitachi recommendations (Gauge measure - Dry air filling)

SHU

Unit	ETD	ETA	Arrival Port	On-Site
1	2024-04-09	2024-05-24	Mugharraq	2024-06-11
2	2024-04-09	2024-05-24	Mugharraq	2024-06-11
3	2024-04-09	2024-05-24	Mugharraq	2024-06-13
4	2024-04-09	2024-05-24	Mugharraq	2024-06-13
5	2024-05-16	2024-07-21	Mugharraq	2024-08-01
6	2024-05-16	2024-07-21	Mugharraq	2024-08-01
Spare	2024-05-16	2024-07-21	Mugharraq	2024-08-01

DAS

Unit	ETD	ETA	Arrival Port	On-Site
1	2024-02-19	2024-04-21	Mina Zayed	2024-11-03
2	2024-02-19	2024-04-21	Mina Zayed	2024-11-03
3	2024-07-11	2024-09-02	Mina Zayed	Feb. 2025
4	2024-07-11	2024-09-02	Mina Zayed	Feb. 2025
5	2024-07-11	2024-09-02	Mina Zayed	Mar. 2025
6	2024-07-11	2024-09-02	Mina Zayed	Mar. 2025
Spare	2024-07-11	2024-09-02	Mina Zayed	Mar. 2025

6. Material Handling

Transformer Delivery Schedule [Zakum Cluster]

- This transformer is manufactured in a factory in Brazil.
- Hitachi is transporting to the relevant site. (MIR : Site, AGI: Zayed Port)
- Before arriving at the site, SCT prepare for receiving by submitting MS, approval and conducting FRA.
- Temporarily it is stored at Site or Zayed port before TR building is completed.
- During the storage, preservation is implemented according to Hitachi recommendations (Gauge measure – N2 gas filling)

MIR

Unit	ETD	ETA	Arrival Port	On-Site
1	2024-02-23	2024-03-31	Mina Zayed	2024-06-04
2	2024-02-23	2024-03-31	Mina Zayed	2024-06-04
3	2024-04-07	2024-04-29	Mina Zayed	2024-06-09
4	2024-04-07	2024-04-29	Mina Zayed	2024-06-09
5	2024-06-02	2024-07-25	Mina Zayed	2024-08-26
6	2024-06-02	2024-07-25	Mina Zayed	2024-08-26
Spare	2024-06-02	2024-07-25	Mina Zayed	2024-09-07

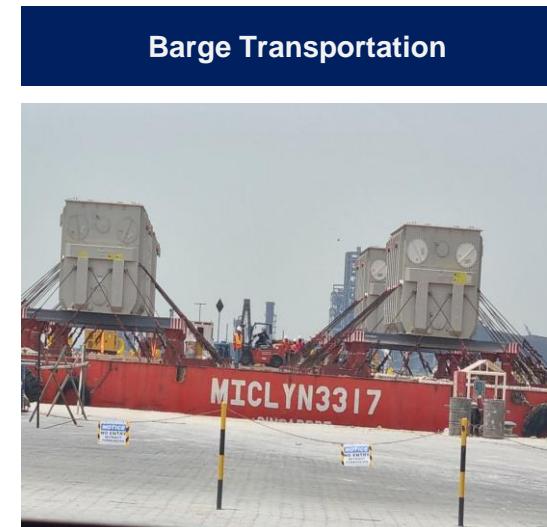
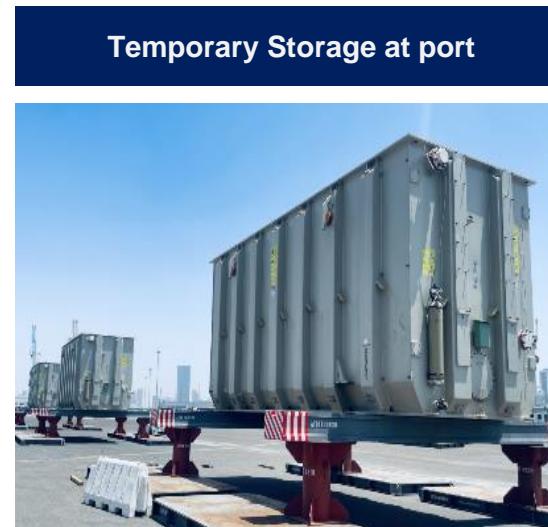
AGI

Unit	ETD	ETA	Arrival Port	On-Site
1	2024-08-01	2024-09-01	Mina Zayed	Apr. 2025
2	2024-08-01	2024-09-01	Mina Zayed	Apr. 2025
3	2024-09-30	2024-11-01	Mina Zayed	May. 2025
4	2024-09-30	2024-11-01	Mina Zayed	May. 2025
5	2024-09-30	2024-11-01	Mina Zayed	May. 2025
6	2024-10-25	2024-12-10	Mina Zayed	Jun. 2025
Spare	2024-10-25	2024-12-10	Mina Zayed	Jun. 2025

6. Material Handling

Transportation Process [On-Shore_MIR,SHU]

- Unloading of the Heavy vessel is carried out at the port using a crane within own Vessel.
- When unloading, load directly onto the SPMT or Hydraulic Trailer on which the beam is mounted.
- Temporarily storage (Steel Mat, Stool and Beam) at the port before transport.
- Mirfa TRs are transported Barge from Mina Zayed to Mussafah (not allowed inland in Mina Zayed Road)
- Proceed with inland transportation after DOT prior approval and police approval (only night time)



6. Material Handling

Transportation Process [Off Shore _ DAS,AGI] : Transformers using SMPT equipment shipped an LCT vessel.



① Transformers are carefully lifted from the Vessel using a crane and placed onto SMPT equipment for transport.



② Multiple transformers are securely positioned and fastened onto SMPT trailers, prepared for roll-on operations.



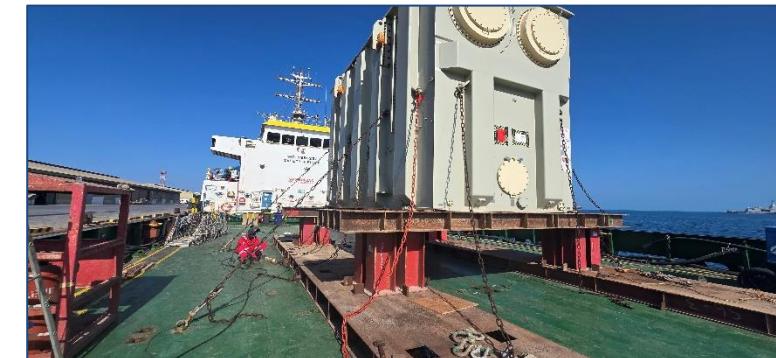
③ Mats and stools are installed on the LCT deck to evenly distribute the load and prepare for safe transformer placement..



④ The LCT ramp is aligned and secured to facilitate the smooth movement of SMPT trailers onto the vessel deck.



⑤ The roll-on operation begins, with SMPT equipment transporting the transformers onto the LCT vessel via the ramp.



⑥ Final lashing and sea fastening are performed to secure the transformers safely for marine transportation.

6. Material Handling

Transportation Process [Off Shore _ DAS,AGI] :

These documents are mandatory to be submitted prior to the roll-on/off operation of the transformer at the port to ensure safe and efficient handling of the equipment. (28 to 30 page)

1.1 Preparation and Approvals

1. Permit to Work (PTW):

1. **Hot Work Permit:** For lashing/sea fastening and cutting activities.
2. **Working Over Water Permit:** For all operations conducted over water.
3. **HSE Approvals:** Comprehensive approval for safety and environmental plans.

MARINE PTW - Hot Work _M-PTW-ZP-2024-15487

Permit Record No.	M-PTW-2024-16738		
Job Start Date	05/11/2024 7:00:00 AM	Expiry Date	12/11/2024 11:59:00 PM
Site/ Port	Ports/ Zayed Port Region/Zayed Port/Vessel	Others, Specify:	
Work Location:	MINA ZAYED BERTH # 05		
Description of Work:	CUTTING/ GRINDING / WELDING		
PTW APPLICANT DETAILS			
Vessel Name	BUSHRA		
IMO No.	9850252	Contact No.	056 1437902
Ship Agent	Capt. JOEY RAFAEL VARGAS		
Contact Person	sam@ofco-int.com	Contact No.	
Contractor Company	006450OFCO OFFSHORE SUPPORT & LOGISTIC SERVICES L.L.C		
Contact Person			
No. of Workers	4	No. of Supervisors/Drivers	1
*Hazardous Materials located and/or brought to the site?	Yes GRINDERS AND WELDINGS	*Major Equipment located or to be brought to the site?	Yes WELDING MACHINE AND GRINDERS
This Permit to Work is issued ONLY for the above work and locations, and ONLY on the condition that all required documentation (e.g. risk assessment) and permits have been completed and the requirements thereof communicated to all involved persons.			
HAZARDS IDENTIFICATION			
Note: List the identified hazards/ Environment Impacts and Risk Impact, as appropriate			
• Flammable gases, vapors • Pressurized cylinder/ hose		If Other, Please Specify	

Hot Work Permit

2. HSE Documentation:

1. **Risk Assessments:** Covering all operational activities.
2. **Method Statements:** Detailed operational and safety guidelines.
3. **ADNOC Tide Table:** Approved tide schedules to align operations with safety standards.

PTW- Risk Assessment Form

Permit to Work Office No.:	Emergency Contact No.: 800112				
Activity: Hot Works on LCT Bushra					
Risk Assessment Steps:					
Step 1: Identify Hazards (e.g. Physical Hazard, Fire Hazard, and Electrical Hazards). Step 2: List Hazards Details identified (e.g. Tripping Hazard, Flammable Materials stored, Working in Electrical Cabinets). Step 3: List Causes of Hazard (e.g. Unhygienic workplace, Hot work, un-isolated electrical supply). Step 4: List Consequences of Hazard (e.g. Personnel Injury, Fire, electric shock). Step 5: Determine Likelihood and Consequences to People, Assets, Environment, and Reputation from attached Risk Assessment Matrix (Page 2) this should be the most probable outcome without controls (e.g. Low, Medium, High or SD etc.). Step 6: Calculate the Risk Index using the Quantitative or Semi-Quantitative Risk Assessment Matrix as deemed appropriate. This is a product of Likelihood and Consequence and should be stated Low, Medium, High or Very High. Step 7: List Existing Controls (e.g. Tidy Site Policy, Hot Work Permit, Isolation of Electrical Supply). Step 8: List Safety Control Activities and Additional Controls that may be deemed necessary to reduce Risk to ALARP. Step 9: Recalculate Likelihood and Consequences to People, Assets, Environment, and Reputation from attached Risk Assessment Matrix. Step 10: Recalculate the Risk Index. Step 11: If residual risk deemed to be High or Very High then risk must be reduced further before proceeding, if risk is medium then note that risk reduction must be planned, monitored and documented, if low then risk is acceptable without required further action.					
Likelihood	Descriptor to assist in Qualitative Assessment of Likelihood/ Frequency of Occurrence.				
A	Has occurred within port industry worldwide.				
B	Has occurred regionally within port industry or judged likely to have occurred.				
C	Has occurred in port industry within UAE or judged likely to have occurred.				
D	Has occurred in port industry within UAE on an annual basis or judged likely to have occurred.				
E	May occur in UAE port industry multiple times annually.				
* Risk Assessment Matrix – Qualitative					
Consequences	P= People	A= Assets	E= Environment	R= Reputation	LIKELIHOOD
5- Catastrophic	Multiple fatalities	Extensive damage	Massive effect	International impact	A
4 - Severe	Single fatality or permanent disability	Major damage	Major effect	National impact	B
3 - Critical	Major injury or health effects	Localized effect	Localized effect	Considerable impact	C
2 - Marginal	Minor injury or health effects	Minor effect	Minor effect	Minor impact	D
1 - Negligible	Slight injury or health effects	Slight effect	Slight effect	Slight impact	E
For additional information refer to Risk Management Procedure ADM-HSE- 005.					ALARP
© 2014 AD-Ports, Abu Dhabi, United Arab Emirates					PSS-PPM-G-400-002, Rev 1 (1 Jan. 2015)
					AD-Ports HSE Page 4 of 4

Risk Assessments

6. Material Handling

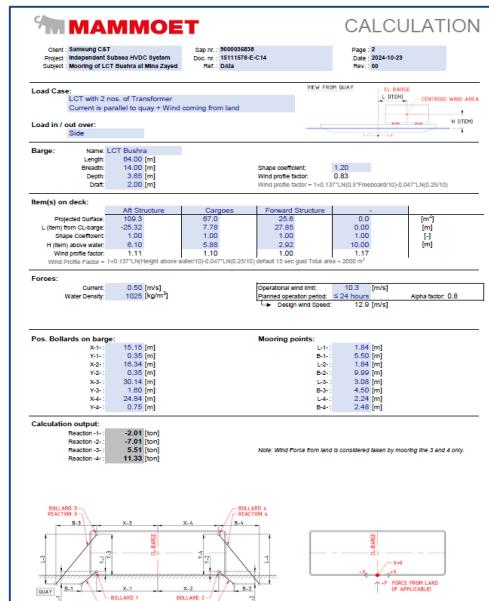
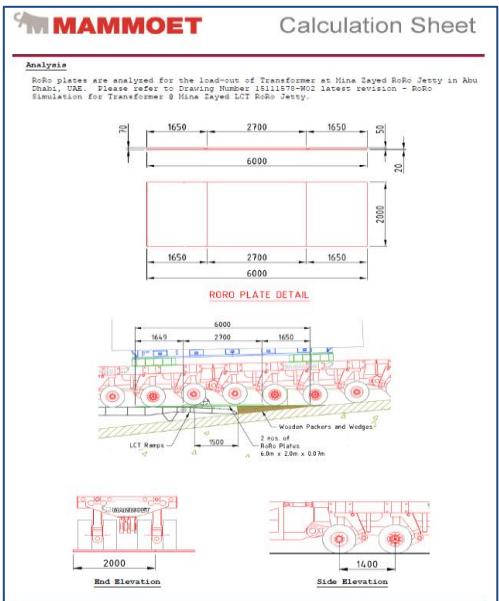
1.2 Technical Documents

3. SPMT and Loading Operations:

1. **SPMT Certificates:** Pre- and post-inspection reports.
2. **RoRo Ramp Strength Calculation:** Based on trailer axle loads and load distribution.
3. **Stowage Plan:** Transformer configuration and load arrangement on LCT.

4. Stability and Ballasting:

1. **Ballast Calculation:** Stability adjustments and contingency planning.
2. **Stability Booklet:** Documentation for LCT stability and draft planning



RoRo Ramp Strength Calculation

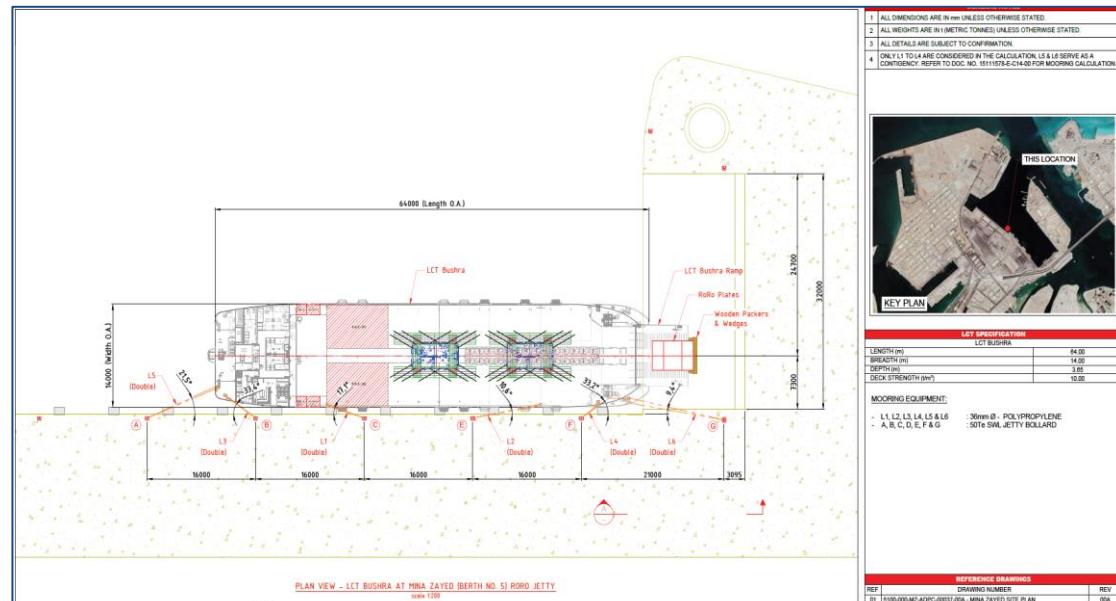
Ballast Calculation

5. Mooring Operations:

1. **Mooring Arrangement Plan:** Layout and pull force details (MT/KN).
2. **Mooring Rope Certificates:** Compliance certifications.
3. **Bollard SWL Certificate:** Strength verification of bollards.

6. Vessel Specifications:

1. **GA Plan:** General arrangement drawings of the LCT.
2. **Deck Strength Data:** Structural integrity information



Mooring Arrangement Plan

6. Material Handling

1.3 Operational Documentation

7. Work Plans and Schedules:

1. **Sequence of Operations:** Step-by-step workflow for Roll-On operations.
2. **Tug and Pilot Plans:** Scheduling of tugboats and pilots.

8. Completion Documentation:

1. **Post-Loading Inspection Reports.**
2. **Completion Certificate for Roll-On Operations.**

Document Name: Certificate of Sail away Approval(C.O.A)

Purpose:

The purpose of this document is to certify the approval for the sail away of two transformers. It confirms that a pre-sailaway inspection was conducted, and the vessel was found fit for the voyage.

Usage:

This certificate serves as official approval from the Marine Warranty Surveyor for the transportation of the cargo by sea. It is used to ensure compliance with safety standards and operational procedures for the voyage, providing assurance to stakeholders, insurers, and relevant authorities.



**STERLING
TECHNICAL**

Certificate of Sailaway Approval

Certificate Number: C-0593 IN (B)/ C-0001 AD (B)

Issued on behalf of Project	: Munich Re Syndicate and Interested Underwriters : Lightning Project, U.A.E.
Vessel	: LCT BUSHRA
Cargo	: 2 x Transformers (S/N:8721330 & S/N:8721331) weighing 169 tonnes each
Voyage From	: Berth No. 5, Mina Zayed Port, Abu Dhabi, U.A.E.
Voyage To	: Das Island, Abu Dhabi, U.A.E.

The attending surveyor has conducted a pre-sailaway inspection of the aforementioned vessel on 31st October 2024 and found same generally fit for the voyage.

This is to certify that this office has reviewed the procedures and analyses for the voyage in the following document(s):

Sr. No.	Document Title	Document No.	Rev.
1.	Method Statement For Load-Out, Load-In & Land Transportation Of Transformers (LTSI145SR) from Mina Zayed Port to Installation area at Das Island	15111578-W-M02	R1

No responsibility is accepted by this office for the way in which the voyage is undertaken following departure.

Any alterations in the surveyed items and/or deviations from the approved procedures after the issue of this Certificate of Approval may render this Certificate invalid unless approved by this office (prior to commencement of the operation).

This Certificate is issued in accordance with our Conditions of Business dated 08th September 2019. It is issued solely for the purposes of the proposed operation and is based upon external conditions observed by the undersigned of the hull, machinery and equipment without removal, exposure, operating or testing of parts. This Certificate shall not be deemed or considered to be a general Certificate of Seaworthiness.

Recommendations, as follows, are to be complied with for the continued validity of this Certificate of Sailaway Approval.

APPROVED
STERLING TECHNICAL SERVICES

Attending Marine Warranty Surveyor:
Sterling Technical Services India Private Limited
Mr. Rohan Murray

Receipt of this CoA is hereby acknowledged by:
Samsung C & T, U.A.E.
Name and Signature of PIC

Location : Berth No. 5 , Mina Zayed Port, Abu Dhabi, U.A.E.
Date / Time: c31 Oct 2024 at 1630 hours

Issued without Prejudice to any interested entities or to any terms and conditions of the Insurance. Subject to our Conditions of Business dated 08th September 2019.

Sterling Technical Services India Pvt. Ltd.
Office No. 407, Shelton Cubix, Plot No.87, Sector 15, C.B.D. Belapur, Navi Mumbai, India - 400614
[T]: +91-22-4801-5677
[E]: surveys.india@sterlingtechnical.com
[W] www.sterlingtechnical.com
London • Singapore • Mumbai • Ho Chi Minh • Vung Tau • Shanghai • Miri • Abu Dhabi • Songkhla

6. Material Handling

Site Receiving & Storage

- Conduct Site survey before transportation (checking turning radius, obstacles, etc.)
- Laydown Ground compaction and Mat, Stool positioning
- Safety induction prior works.
- Unloading works (Jackdown) will be performed under supervision of technical engineer (AI Faris & Mammoet).
- During the storage, preservation is implemented according to Hitachi recommendations (Dry air or N2 gas filling)

Laydown – Mat, Stool Setup



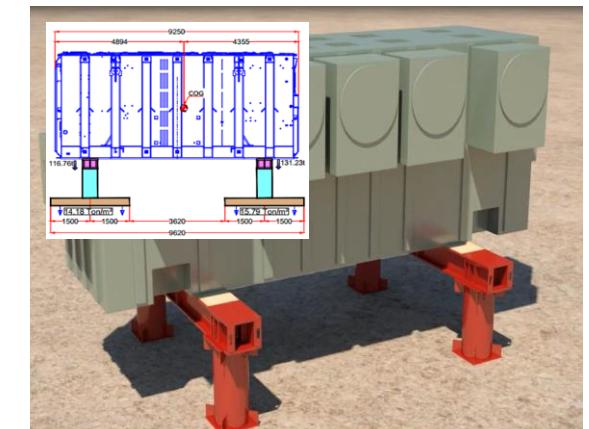
Backward In



Jackdown & Receiving



Storage & Preservation



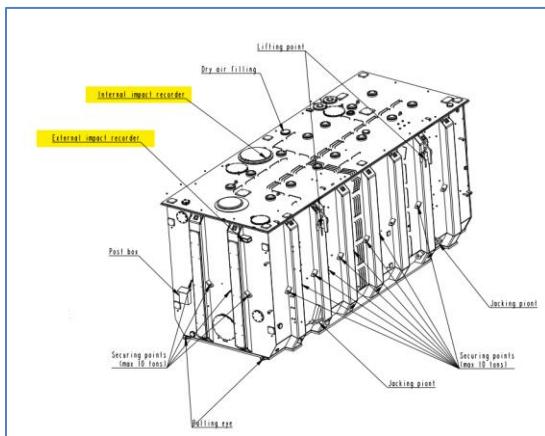
- Beam replacement (June.2024)
- HE (7.5 m, transportation)
→ MMT (5.8 m. long term storage)

6. Material Handling

Check Impact Recorder & Preservation

- Mobile scaffolding will be used to check impact recorder and the condition of top side.
- Open protection box → four incident lamps are placed on the measuring unit → Test button is located to the right of the incident lamps → Push the test button and release (with Hitachi engineer)
- For preservation, check the gauge measuring on weekly and make the log sheet.
- If under standard level, refill dry air (DAS cluster) and N2 gas (Zakum cluster)

Checking Impact Recorder



Preservation (Gauge check, etc)



Converter Transformer Preservation- Dry Air Monitoring Check List			
Frequency	Weekly for first 4 weeks and after Monthly	Criteria	Reference
Task	Visual Inspection of Pressure gauge on top of the tank for monitoring the filling pressure of Dry Air & Measuring Ambient Temperature	Small Positive Over Pressure 5kPa to 30kPa (Temperature from -25 deg to 50 deg)	Doc No: 1ZSE937002_EH-001- Monitoring of Dry-Air filling of TR during shipment and storage
SL. No.	Date	Observed Value in kPa	Ambient Temperature
1	09-May-2024	21.5 kPa	32 °C
2	09-May-2024	12.0 kPa	32 °C
3	16-May-2024	22.0 kPa	37 °C
4	16-May-2024	11.7 kPa	37 °C
		Result	Responsible
		Pass	Fail
		Initial/Signed	Remarks

6. Material Handling

DRY AIR PRESSURE TOP UP PROCEDURE (Continued)

- Lifting Personnel to the Top of the Transformer**

Use a 20-ton port crane with a man basket to lift personnel to the top of the transformer.

Personnel should wear a safety harness for protection.

Port riggers will guide the man basket from the ground with guide ropes to avoid the basket turning.

- Top-Up Process**

Once the personnel are at the top of the transformer, top up dry air into the transformer.

Stop the dry air top-up once it reaches the required level (20Kpa) at ambient temperature.

Close the valve knob and disconnect the hose pipe.

Get down from the transformer top using the man basket & crane.

Remove all hose ad cylinder egato connections.

Lay down the cylinder in the pick-up and clear the site.

- Safety Considerations**

The port crane should be used solely for lifting the man basket with two persons inside, both wearing safety harnesses.



6. Material Handling

On-Foundation

- Once TR building is completed, we plan to proceed with on-foundation using the skidding method by Mammoet.
- Equipment will be mobilized in advance : SPMT, Skidding Set and Jacking Set.
- Before starting on foundation, MS approval and FRA are scheduled to be processed.

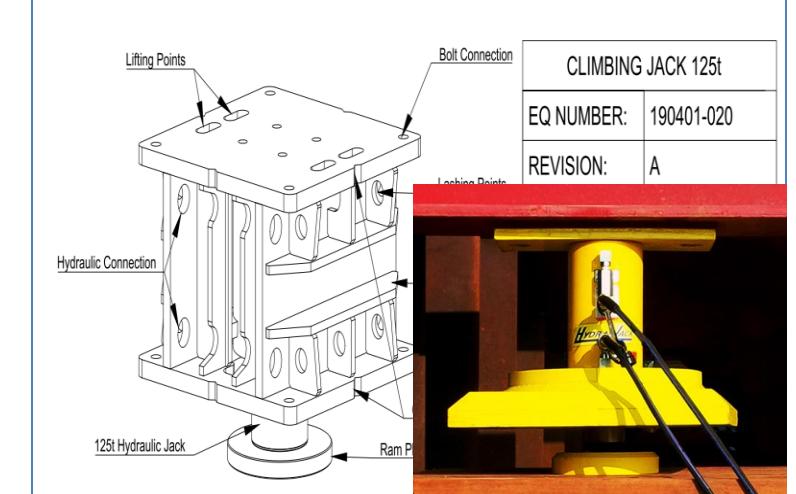
SPMT (self-propelled modular transporter)



Jacking set



Jacking set



6. Material Handling

On-Foundation procedure

① preparing of equipments



② Positioning



③ Jackup



④ Skidding



⑤ Jackup & Skidding



⑥ Foundation (clearing equipment)



Thank you