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名稱：承攬商投標環安衛要求程序書

TITLE：General HSE Requirements for Contractor Tender

1.依據公司文件管理規定，修訂格式與編碼。

修訂版次 Rev. No.	修訂日期 Rev. Date	修訂內容 Revised Content	核准 Approved By	審查 Reviewed By	制訂 Prepared By
00	2018.12.10	依據環安衛管理系統規定與風電開發商客戶要求，訂定承攬商投標環安衛要求程序書，作為與承攬的投標資格審查參考與得標後環安衛執行要求依據。	董寶鴻 P. H. Tong		林維政 Bruce Lin

#### Version 01

書面分發一覽表

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## 承攬商投標環安衛要求程序書

### General HSE Requirements for Contractor Tender

#### 1.目的(purpose)：

本文件的目的是作為承包商的投標環安衛要求，這些承包商和所屬分包商將在興達海洋基礎公司(簡稱：興達海基)施工現場或其工廠內進行工作。本文件描述了承包商環境環安衛管理系統的最低要求，該系統應符合 ISO 14001(環境)和 ISO 45001(或 OHSAS 18001)(健康和 safety)標準，並有助於確保承包商主動管理健康，安全和環境問題。本文件應構成合約的組成部分，確定承包商現場工作的環安衛要求，因此承包商投標時應仔細閱讀並理解。

The purpose of this document is to establish the EHS requirements for Contractors who perform work on a Sing Da Marine Structure Corporation (hereafter abbreviated as SDMS) construction site or the contractor's own site. This document describes the minimum requirements for the Contractor's Environmental, Safety & Health (HSE) Management System, which shall be in accordance with ISO 14001 (environment) and ISO 45001 or OHSAS 18001 (safety and health), and helps ensure that health, safety and environmental issues are proactively managed by the Contractor. This document shall constitute an integral part of the Contract, establishing the Customer's HSE requirements for working on Site, and should therefore be read carefully and understood by the Contractor before tender for contract.

#### 2.適用範圍(Scope)：

本文件適用於並且應成為任何承包商和分包商在興達海基工作的所有合約協議的一部分。本文件未涵蓋所有可能的活動/任務，因此承包商有責任確保其工作範圍在符合執行工作的國家當地法律要求的安全工作系統下進行。

This document applies to and shall be made a part of all contractual agreements between any Contractor and subcontractors performing work on an SDMS construction site project. This document does not cover all possible activities / tasks and therefore it remains the Contractor's responsibility to ensure that their scope of work is carried out under a safe system of work which complies with local legal requirements in the country where the work is being performed.

#### 3.權責(Responsibility)：

本程序書由工安處(M2)工程師制訂，以公文會簽品質處(M3)、工務處(M4)、生產廠(M5)後，由工安處處長核定。

This procedure is prepared by the Engineer of the Industrial Safety and Hygiene Department (M2). It



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will be approved by the General Manager of Industry Safety and Hygiene Department after reviewed by Quality Department (M3), Engineering Department (M4) and Production Department (M5).

#### 4.定義與英文縮寫(Definition and Abbreviation)：

##### 4.1 定義(definition)

合約 Contract	合約是指興達海基與承包商之間為進行工程而簽訂的契約 “Contract” means the contract entered between SDMS and the Contractor for the performance of works at a Site.
承包商 Contractor	非興達海基擁有的公司，與興達海基簽訂合約，分包或採購訂單，並致力於為興達海基的場所或專案提供服務，或在興達海基的管理下為客戶或第三方提供服務。 A non-SDMS owned company who is under a contract, subcontract or purchase order with SDMS and is engaged to provide services on SDMS premises, projects or, under SDMS management, on customer or any third party Site(s)
承包商的環安衛計劃 Contractor's HSE Plan	指承包商向興達海基提供的環境與安全衛生管理計劃，用於承包商在作業現場的相關工作活動管理。 It shall mean an HSE plan provided to SDMS by the Contractor relating specifically to the Contractor's activities for its respective work on Site.
風險評估 Risk Assessment	分析風險等級的過程，考慮危險是否得到充分控制，同時考慮到已有的措施，並確保現有的預防措施足以防止這些措施。 The process of analyzing the level of risk, considering whether hazards are adequately controlled, taking into account any measures already in place and ensuring that the precautions that are in place are sufficient to prevent them.
興達海基環安衛計劃 SDMS HSE Plan	是指興達海基針對現場的相關工作提供的環境與安全衛生計劃。 It shall mean an HSE plan provided by SDMS relating specifically to the respective work on Site.
環安衛要求 HSE Requirements	指依據法律要求與興達海基環安衛計劃所定之環安衛規定，本文件和現場要求中規定的要求，並作為興達海基與承包商之間輸入的合約，轉包或採購訂單的一部分。 It shall be the requirements set out in the legal requirements, the SDMS HSE Plan, this document and the Site Requirements and included as part

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	of the contract, subcontract or purchase order entered between Siemens and the Contractor.
安全工作系統 Safe System of Work (SSoW)	承包商或興達海基提供的文件，規定如何以安全的方式執行任務，包括但不限於工作指示，安全程序，風險評估，吊掛計劃，設計等。Documentation provided by the Contractor or by SDMS which stipulates how a task shall be carried out in a safe manner and can included but is not limited to work instructions, safety method statements, risk assessments, lift plans, drawings
工地特定要求 Site Specific Requirements	是指興達海基或興達海基的客戶在該生產作業基地現場的有關環安衛事宜的規定。工地現場要求更具體地規定現場員工的安全以及材料，設備，工作區域，施工架，現場設施，安裝，工具等的安全和保全事項。 It shall mean the regulations set out by SDMS or the customer of a Site relating to HSE matters on such Site. The Site Requirement deals more specifically with the safety of the employees on Site and the securing and safekeeping of materials, equipment, work areas, scaffolding, Site establishments, installations, tools, etc.
工地 Site	是指承包商與興達海基簽訂合約以提供工程和服務的地點。本工地可以是興達海基工地，興達海基的客戶工地或任何第三方工地（或其中的一部分）。 It shall mean the location where the Contractor is contracted by SDMS to provide works and services. The Site can be a SDMS Site, a customer Site or any third party Site (or part thereof).
工作許可證 Permit to Work	是一種正式的書面系統，用於管理有潛在危險的某些類型的工作；指明要完成的工作和採取的預防措施；通常設定時間限制（開始和結束時間），可以在工作許可證上詳細說明。工作許可允許工作僅在確定安全程序後開始，並且提供了已考慮所有可預見危害的明確記錄。 Is a formal written system used to manage certain types of work that are potentially hazardous; specifies the work to be done and precautions taken; often sets time limits (start and finish times), they may be detailed on a Permit to Work. Permits to Work allow work to start only after safe procedures have been defined and they provide a clear record that all foreseeable hazards have been considered.
不安全行為 Unsafe Act	指任何不符合環安衛要求的行為或不作為。 It shall mean any act or omission that is not in accordance with the HSE

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	Requirements.
不安全狀況 Unsafe Condition	是指工作現場的任何不符合環安衛要求的條件。 It shall mean any condition at the work site that is not in accordance with the HSE requirements.
失能傷害 Lost Time Injury (LTI)	人員受傷後死亡或必須休養超過一天的傷害。 A fatality or a work related injury with absence of 1 day or more on any day after the injury.
工作受局限傷害 Restricted Workday Case (RWC)	受傷後不需要休養，但是必須變更為較簡單的工作的輕傷害。 No need to rest after injury, but must be changed to a simpler work injury
醫療輕傷害 (輕傷) Medical Treatment Injury (MTI)	受傷後必須送醫(超過原地包紮)，隔天可依恢復正常工作。 It is more severe than requiring simple first aid treatment and is fit to perform regular work duties the following day.
虛驚事故 Near miss (NM)	未經計劃或未受控制的事件，未導致受傷，但在其他情況下有可能受傷。不同於只觀察到危害，通常已經有能量被釋放。 An unplanned or uncontrolled event or chain of events that have not resulted in injury but had the potential to do so in other circumstances. In a near-miss case energy is often released, in contrary to observations.
C4級潛在風險 C4 risk potential	高危害風險的事件，可能造成一至三人死亡或永久失能的事件。 Incident with the potential to result in an actual injury case with 1-3 fatalities or permanent disability
C5級潛在風險 C5 risk potential	高危害風險的事件，可能造成超過三人死亡或永久失能的事件。 Incident with the potential to result in an actual injury case with Multiple (>3) fatalities or permanent disability.
潛在造成生命改變的事件頻率 Potential Life Changing Events Frequency (PLCEF)	每一百萬工作人時，發生可能造成C4級和C5級潛在風險的事件數目。 It is calculated as the sum of actual injuries with C4 or C5 risk potential and NMs with C4 or C5 risk potential per 1,000,000 working hours (NOT observations with C4 and C5 risk potential)
失能傷害頻率 Lost Time Injury	每一百萬工作人時，發生失能傷害的事件數目。 Number of injuries with absence of 1 day or more per 1,000,000 work

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Frequency (LTIF)	hours
總記錄傷害頻率 Total Recordable Injury Rate (TRIR)	<p>每一百萬工作人時，發生失能傷害、工作受局限傷害與醫療輕傷害的事件總和數目。</p> <p>TRIR is calculated as the sum of Lost Time Injuries (LTIs), Restricted Workday Cases (RWC) and Medical Treatment Injuries (MTI) per 1,000,000 work hours.</p>

#### 4.2 英文縮寫(Abbreviations)

COSHH	對於危害健康物質的控制 (Control of Substances Hazardous to Health)
HSE	環境，衛生(健康)和安全 (Environment, Safety and Health)
LOTO	斷能上鎖/掛卡標示 (Lock Out / Tag Out)
NRR	噪音降低等級 (Noise Reduction Rating)
PPE	個人防護具 (Personal Protective Equipment)
ROPS	翻車保護系統 (Roll Over Protection System)
SSoW	安全的工作系統，包含風險評估，工作指令，安全程序，設計，吊掛計劃等 (Safe System of Work, including Risk Assessments, Work Instructions, Safety Procedure, Drawings, Lift Plans)
TBT	工具箱會議(Toolbox Talk)
PTW	工作許可證(Permit to Work)

### 5.環安衛原則與一般要求(SDMS HSE rules and General requirements)

#### 5.1 興達海基環安衛原則(SDMS HSE rules)

5.1.1 興達海基對安全和環境採用零傷害原則。為我們或代表我們工作的每個人都應對其自身安全與周圍人的安全以及對環境的保護負責。但重要的是要強調：

SDMS operates a Zero Harm approach to safety and the environment. Everyone who works for or on behalf of us is responsible for their safety, the safety of those around them and the protection of the environment. It is important to emphasize that:

- (1)如果沒有安全的工作制度，將不會進行工作，其中包括風險評估，檢查表，許可證，方法說明或工作說明，設計圖和適合風險等級的任務前簡報。

Work will not be conducted without a safe system of work in place which will include risk assessment, checklists, permits, method statement or work instructions, drawings and a pre task brief appropriate for the level of risk.

- (2)所有人員都將接受培訓並有能力執行任務並使用任何相關設備。

All persons will be trained and competent to carry out the task & use any related equipment or plant.



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(3)使用前檢查工具和設備並回報是否有任何缺陷。

Tools and equipment will be checked prior to use with any defects reported.

(4)隨時佩戴適當的個人防護裝備。

Proper personal protection equipment will be worn at all times.

(5)每個人都有義務停止被認為不安全的工作並向興達海基報告任何事件。

Everyone has an obligation to stop work that is deemed to be unsafe and to report any incidents to SDMS.

#### 5.1.2 興達海基的零傷害原則心態包括但不限於：

Zero Harm Mindset of SDMS includes but not limited to :

(1)我們都有權享有安全，可靠的工作環境，並能夠恢復健康。

We all have the right to a safe, secure working environment and to return home fit and healthy.

(2)工作時應認識危險情況並相互照顧。

We recognize dangerous situations and look after one another at the time of work.

(3)冒險行為是不可接受的。

Risky behavior is not acceptable.

(4)雇主應提供安全系統，以保證員工安全，員工應遵守安全規定。

Employer shall provide a safe system of designed to keep employee safe, and the employee shall follow the safety regulations.

(5)雇主應向員工提供個人防護裝備，員工應隨時佩戴適當的個人防護裝備，尤其是高空作業。

Employer shall provide PPE to the employee, and the employee shall put on the proper PPE at any time, especially work on height.

(6)如果員工或承包商發現不安全行為或不安全狀況，或者他/她在任何時候感到不安全，他/她應立即停止工作。對此原則，員工已經獲得授權並得到支持。

If the employees or contractors see an unsafe act or unsafe condition or if he/HSE feels unsafe at any time, he/HSE shall stop work immediately. The employee is empowered and will be supported.

#### 5.2.一般環安衛要求(General HSE Requirements)

##### 5.2.1 承包商在興達海基現場的所有活動均應遵守以下規定：

All activities of a Contractor on a SDMS site shall be undertaken in compliance with the following:

(1)適用的當地環安衛的法律要求。

Applicable Local Legislative HSE requirements.

(2)現場環安衛計劃書的要求。

Site HSE Plan requirements.

(3)本文件中的要求與對承包商工作範圍的要求。

Requirements contained in this document or identified as specific to the Contractor(s) scope of

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works.

(4)合約與分包合約或採購訂單中包含的要求。

Requirements included in the contract, subcontract or purchase order.

5.2.2 本文件應成為承包商與其分包商之間所有合約協議的一部分。承包商有責任確保其人員、分包商人員、代理人、協助承包商執行工程的任何其他人員、訪客以及代表或在其控制下進入現場的任何人員，現場工作期間了解並始終遵守環安衛要求。

This document shall be made a part of all contractual agreements between the Contractor and his subcontractors. The Contractor is responsible for ensuring its personnel, subcontractors of any tier (and their respective personnel), agents and any other personnel assisting the Contractor in the execution of the works, visitors and any person entering the Site on behalf or under the control of the Contractor are aware of and comply with the HSE requirements at all times during performance of their Work or presence at Site.

5.2.3 未滿18歲的人不得進入作業現場工作。

No one under the age of 18 shall be permitted to work in the project Site.

5.2.4 興達海基保留驗證承包商和所有承包商人員是否符合合約要求的權利。承包商的活動和績效可以通過環安衛審核和檢查進行審核和評估，以確保持續符合這些要求。

SDMS reserves the right to verify that the Contractor and all of the Contractor Personnel meet the requirements of the Contract. Contractor activities and performance may be audited and evaluated through HSE audits and inspections to ensure ongoing compliance with these requirements.

5.2.5 承認任何現場的承包商和承包商人員必須以有秩序和安全的方式行事，並始終遵守現場HSE要求，包括本文件。不允許打鬥，參與騎馬，受酒精或毒品的影響，賭博，拉客，偷竊，不道德或其他不良行為。發現此類行為後，興達海基有權從要求相關違規人員離開作業現場並採取所有其他適當措施。

Contractors and Contractor Personnel admitted to any Site must conduct themselves in an orderly and safe manner and conform at all times to the Site HSE requirements including this document. Fighting, engaging in horseplay, being under the influence of or possessing alcohol or drugs, gambling, soliciting, stealing, immoral or otherwise undesirable conduct is not permitted. Upon knowledge of such conduct, SDMS shall be entitled to remove the concerned person from the Site and take all other appropriate measures.

5.2.6 承包商應向其人員提供進出相應工作區域的安全通道，包括這種通道的保護裝置。

The Contractor shall provide to their Personnel safe access to and from the respective work areas including protective means for such access.

5.2.7 承包商應興達海基要求時，必須參加安排的環安衛會議，並與其分包商召開會議，以溝通和討論環安衛問題。

Contractors shall, when requested, be required to attend HSE Meetings arranged by Siemens and hold meetings with their sub-contractors to communicate and discuss HSE issues.

5.2.8 承包商應確保進行高風險活動的所有承包商人員應接受當地法規要求的體檢，以確保適合預

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期的工作。

The Contractor shall ensure that all Contractors personnel performing High-Risk Activities shall be subject to medical examination as required by local legislation to ensure fitness for the intended works.

5.2.9 不符合規定的行為將由SDMS處以罰款，相關處罰在SDMS承攬商環安衛管理程序書（QP-M21-A18）中有詳細規定，該程序書將作為合約的一部份。

Fail to compliance with the regulations is subjected to be fined by SDMS, the detailed penalty is addressed in SDMS Contractor Environment, Safety and Hygiene (HSE) Management Procedure (QP-M21-A18), which will be included as part of the contract.

### 5.3. 承包商安全工作系統 (Safety System of Work; SSoW)

5.3.1 根據與興達海基商定的文件提交時間表的規定，承包商應向興達海基提供有關安全工作系統的審查和驗收，涵蓋承包商工作的全部範圍。安全工作系統應考慮並遵守本文檔中包含的環安衛計劃和要求。提交的文件可能包括將用於執行承包商範圍的相關程序，文件和表格。如果興達海基認為提交的文件存在缺失，興達海基有權拒絕其安全工作系統，承包商應修正並重新向興達海基提交。在獲得興達海基現場管理部門的批准之前，承包商無權開始任何工作。

As stipulated in the document submission schedule agreed with Siemens, the Contractor shall provide to SDMS for review and acceptance the relevant Safe Systems of Work (SSoW) covering the full scope of the Contractors work. The SSoW shall take into account and comply with the SDMS HSE plan and requirements contained in this document. The submitted documentation may include relevant procedures, instructions, documents, and forms that will be used in execution of the Contractors scope. SDMS may reject the SSoW, if SDMS considers it to be deficient in any respect. In such case, the Contractor shall remedy the deficiency and re-submit the SSoW to SDMS. The Contractor shall not be authorized to commence any works before having obtained approval from SDMS.

5.3.2 承包商還負責確保其人員充分了解承包商的安全工作系統內容以及他們尊重其中所述的工作規定和安全措施的個人責任。安全工作系統必須使執行工作的人員在工作地點隨時可以取得。

The Contractor is further responsible to ensure that its personnel are fully informed of the Contractor's SSoW content and of their individual responsibility to respect the work practices and safety measures described therein. The safe system of work must be accessible by the personnel carrying out the work at all times at the location where the work is being performed.

5.3.3 承包商應根據需要定期修改和更新安全工作系統。

The Contractor shall periodically revise and update the SSoW as required.

### 5.4 環安衛文件(HSE documents)

5.4.1 承包商應確保提供環安衛計劃，內容包含安全工作系統與緊急應變計劃，並向其所有人員傳達。承包商應始終保持準確的環安衛文件和人員培訓記錄，於興達海基要求時提供給興達海



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基。承包商應確保按照當地法規和現場法規的要求，為其人員提供所有其他相關的環安衛文件和培訓記錄，並保持可用，以供興達海基或法定機構檢查。

The Contractor shall maintain accurate HSE documentation and personnel training records at all times which must be made available to SDMS upon request. The Contractor shall ensure that the following HSE site-specific documentation is made available and communicated to all its personnel at all times:

## 5.5 現場溝通(Site Communication)

5.5.1 所有口頭和口頭項目溝通均應使用英語或中文華語。承包商應確保在規劃工作時認識到這一點 - 特別是在文件，信號標示，專案計畫介紹和訓練方面。承包商應確保所有項目利益相關方之間的項目溝通以英語或中文華語進行。特別是，如果承包商指派第一語言不是英語或中文華語的人員，他們應在與興達海基的溝通中應強調這一點。

All verbal and spoken project communications shall be in English or Chinese Mandarin. The Contractor shall ensure they are cognizant of this when planning works – particularly in relation to documentation, signage, project inductions and all other training. The Contractor shall ensure project communications between all project stakeholders are conducted in English. In particular, should the Contractor propose to utilize personnel whose first language is not English or Chinese Mandarin they shall highlighted this in communication to SDMS.

5.5.2 承包商應提供並維持有效溝通的安排，以確保在作業中充分翻譯工作指令和安全規則，特別這些安排必須包括導入安全規定的翻譯人員。

The Contractor shall be required to specify the arrangements that will be provided and maintained to ensure adequate translation of work instructions and safety rules throughout the project. These arrangements will include the presence of a translator at safety inductions.

5.5.3 如果承包商使用翻譯人員，則應證明他們的專業能力，能說流利的英語與中文華語。有語言障礙的工人必須由能夠說流利的英語或中文華語的主管監督，並用他們自己的語言與他們進行有效溝通。現場監管人員與弱勢工人的比例將由承包商進行風險評估確定，並與客戶尋求的建議達成最終協議。此項人數比例須經興達海基同意。

Where the Contractor proposes to use interpreters they shall be demonstrated to be competent professionals, fluent in English and Chinese Mandarin. Workers with language barriers must be supervised by a competent supervisor fluent in English or Chinese Mandarin who is able to communicate effectively with them in their own language. The ratio of supervisors to vulnerable workers on Site will be determined by risk assessment by the Contractor with final agreement on the proposals sought from the Customer. This ratio shall be approved by SDMS.

## 5.6 媒體聯繫(Contact with the Media)

5.6.1 新聞或當局對本專案或任何相關活動的所有詢問時，必須首先提交給興達海基現場經理。這包括與項目有關的所有電話，無論是要求提供信息，投訴以及媒體對境內和境外活動的請求，現場經理都會將調查指導或上報給最合適的人。如果發生事故，所有與媒體相關的查詢



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應立即轉至興達海基現場經理。

All enquiries from the press or authorities concerning the project or any related activities must be referred to the SDMS Site Manager in the first instance. This includes all calls relating to the project, be it calls for information, complaints, and requests from media, and they will direct or escalate the enquiry to the most appropriate person. In the event of an incident, all media related queries should be referred immediately to the SDMS Site Manager as above.

## 5.7 環安衛會議(HSE Meetings)

5.7.1 現場工作啟動會議：在啟動現場工作之前，興達海基將與每個承包商一起舉行工作啟動會議並留存紀錄。每個分包商至少有一名現場管理人員代表出席。會議的目的是在承包商作業啟動之前審查工作項目範圍和責任，現場HSE計劃和承包商環安衛計劃，以確認彼此認知差距、發覺遺漏項目以及缺失糾正管理措施和變更管理措施的實施。

Project Site Kick off Meeting: A documented project kick off meeting shall be held by SDMS with each Contractor prior to work beginning on Site. At least one on-site management as representative from each subcontractor shall be in attendance. The intent of the meeting is to review the project scope and responsibilities, Site HSE plan, and the Contractors HSE plan to determine gaps and omissions items, and the implementation of corrective actions and changes management, prior to Contractor start up.

5.7.2 每日環安衛會議/作業前簡報：在每個班次開始時，承包商應舉行一次會議，其中包括與所有團隊所涵蓋的工作範圍相關的環安衛主題，並留存記錄。如果承包商人員採用輪值作業模式，他們應確保每次新的輪值前都會收到一份安全簡報，傳達他們在輪值期間可能發生的環安衛相關信息。

Daily HSE Meeting / Working Brief: At the start of each shift, the Contractor(s) shall hold a meeting that includes a documented HSE topic relevant to the work scope that is covered with all teams. Where the Contractor personnel are working on a rotation based, they shall ensure every new rotation shift receives a comprehensive safety based briefing which should communicate relevant HSE information.

5.7.3 每月環安衛會議與共同作業協議組織會議：承包商應每月，召開一次有作業員工代表參與的環安衛會議，並留存記錄。討論事故的經驗教訓，即將到來的工作任務內容和相關危害以及其他相關的環安衛信息。當承包商有採取分包作業時，承包商必須成立共同作業協議組織，並召集分包商一起召開協議會議，討論共同作業的危害事項與安全措施。這些記錄必須可根據興達海基要求，接受檢查。

Monthly HSE Meetings and consultative organization meeting: Contractor(s) shall conduct a weekly or monthly, as approved by SDMS, documented All Employee participated HSE meeting to discuss incidents lessons learned, upcoming tasks and associated hazards and other relevant HSE information. When the contractor have subcontractors work together, the contractor shall set up a consultative organization ask the subcontractors to participate in the consultative meeting to discuss the hazards and counter measures of working together. These records must be available for review and inspection

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upon SDMS's request.

## 5.8 遵守興達海基和環安衛法律要求(Adherence to SDMS and Legal HSE Requirements)

### 5.8.1 當興達海基發現承包商或其分包商有不安全或不符合興達海基的要求或當地環安衛法律要求事項時 保留以下權利:

When SDMS finds that Contractor or their subcontractor has the fact of unsafe or not in compliance with the SDMS's or local legal EHS requirements, SDMS reserves the right to:

- (1)立即停止承包商受影響的工作活動的權利，直到工作條件符合適用的環安衛要求和適用法律為止;

Immediately stop the affected work activities of the Contractor until the working conditions comply with the applicable HSE requirements and/or the applicable law.

- (2)如果需要，要求承包商將違反規定相關工作人員，不安全或不符合興達海基的要求或當地環安衛法律要求的材料或設備立即移出工作現場。

If needed, require the Contractor to remove any person, material or equipment from Site that it considers to be unsafe or not in compliance with the Customer's or local legal HSE requirements.

- (3)此類停止工作指令應保持有效，直至承包商完成改善措施為止。

Such a Stop Work Order shall remain in force until such time that corrective measures have been verified by Siemens as implemented.

### 5.8.2 如果承包商或其分包商未遵守興達海基或當地環安衛法律要求，則於發現以下狀況時向承包商發出環安衛不符合通知（HSE NCN）：

If the Contractor or their subcontractors fail to adhere to SDMS or local legal requirements, an HSE Non-Compliance Notice (HSE-NCN) shall be issued to the Contractor on the following basis:

- (1)導致死亡，失能傷害事故(失能一天以上)，醫療傷害事故或因工作場所暴露相關的特定疾病(由相關專家診斷，且導致工作中斷缺席超過 1 天者)的事件。

An incident resulting in a fatality, Lost Time Injury Case, Medical Treatment Injury, Work Related diseases related to work place exposure.

- (2)導致傷害的事故需要向地方勞動檢查機構報告的事件。

An incident resulting in an Injury which requires to be reported to the local authority or regulatory body.

- (3)因承包商違規而導致當地法律檢查機構對興達海基的或承包商採取執法行動（停工，發出改進通知等）的事件。

An incident resulting in enforcement action (prohibition, improvement notice or local legal equivalent) being taken against either SDMS or the Contractor by the local legal regulatory body arising from the Contractors default.

- (4)發生環境洩漏或排放而必須向地方環保機關報告或在公共媒體上引起廣泛關注的事件。

Environmental spill/emission reportable to local authorities, regulatory body or carrying extensive attention in public press.



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5.8.3 一旦興達海基簽發環安衛不符合通知簽發給承包商，承包商就必須在約定的時間範圍內回應並實施必要的改正措施。如果環安衛不符合通知在簽發後7天內提出異議，則應啟動正式的爭議解決程序。

Once an HSE NCN has been issued to the Contractor, the Contractor is required to respond and implement the necessary corrective actions within the agreed timescale. If the HSE NCN is disputed within 7 days of issue a formal dispute resolution process shall be instigated.

5.8.4 在專案計畫執行期間內，興達海基或其代表可以對承包商及其分包商進行環安衛績效評鑑，並期望承包商及其分包商全面合作。

During the duration of the project, SDMS or its representatives may perform an audit/assessment of the project. The Contractors and their subcontractors will be assessed during these audits/assessments and are expected to fully cooperate.

5.8.5 每個承包商至少應對其工作現場進行每週一次環安衛現場檢查並做成記錄。該檢查應記錄需要更正的任何缺陷，簽署人員以及預期完成日期。興達海基有權查閱承攬商的專案計畫的EHS現場檢查記錄。

As a minimum, one weekly documented HSE site inspection shall be conducted by each Contractor for their scope of work. This inspection shall note any deficiencies needing corrections, individual(s) as-signed to correct them, and expected completion dates. These EHS inspections record shall be available for review as requested by SDMS.

#### 5.9 專案工地現場的訪客安全管理(Visitors at SDMS Project Sites)

5.9.1 所有承包商訪客必須在到達專案工地現場後通過興達海基現場安全介紹並登錄入場，並在每天結束時登錄出場。

All Contractor visitors must go through the SDMS site safety induction process and sign in with SDMS upon arrival at the project Site, and sign out at the end of each day.

5.9.2 除非得到興達海基現場管理主管的授權，否則訪客不得在沒有興達海基引導人員的情況下離開指定的辦公區域。訪客應遵循引導人員提供的所有指示。

Visitors are never permitted to leave a designated office area without an escort unless authorized to do so by a member of SDMS Site Management. A visitor is expected to follow all the instructions / directions given by their escort.

5.9.3 所有計劃離開現場辦公室進入現場的遊客應穿著進入現場所需的服裝和個人防護裝備(PPE)。

All visitors who plan to leave the Site office shall wear the required site clothing and site required personal protective equipment (PPE).

5.9.4 參觀者應在專案工地現場遵守所有工作區規則和興達海基政策和程序。

Visitors shall comply with all work area rules and SDMS policies and procedures while at the project Site.

5.9.5 沒有得到興達海基的書面批准，不允許承包商訪客參觀正在施工的專案現場任何部分，並且訪客不允許攀爬施工中的塔架。

No Contractor visitor is permitted to visit a part of the project under construction without getting



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written approval from SDMS, and visitors is not permitted for climbing jacket parts.

5.9.6未經興達海基書面許可，承包商或訪客不得拍攝任何照片。

No Contractor or visitor shall take any photos without having written approval by SDMS.

#### 5.10 藥物和酒精測試(Drug and Alcohol Testing)

5.10.1專案工地現場不允許使用酒精和非法藥物，現場作業人員不得受到酒精和非法藥物影響。

Alcohol and illegal drugs are not allowed on the project and personnel must not be under influence of same on Site.

5.10.2興達海基可能自行建立或要求承包商建立並實施藥物濫用和酒精測試計劃。在適用法律允許的範圍內，方案標準應包括事件後的藥物篩檢;隨機藥物和酒精篩檢;並明確定義對陽性測試結果的處分規定。

SDMS may set up or require the Contractor(s) to establish and implement a substance abuse and alcohol testing program. The program criterion shall include, to the extent permitted by applicable law a post-incident drug screening; random drug and alcohol screens; and clearly defined responses to positive test results.

5.10.3所有進行的測試都應報告給興達海基，包括檢測到的任何陽性測試的詳細資訊。

Any testing carried out shall be reported to SDMS including details of any positive test detected.

#### 5.11 事件報告(Incident Reporting)

5.11.1事件的口頭通知：承包商應在發現任何事件後立即口頭通知興達海基現場管理部門，並且有足夠的信息準確報告。

Verbal notification of incident: The Contractor(s) shall verbally notify SDMS Site management of any incident as soon as it becomes aware of such an occurrence and has sufficient information to report with accuracy.

5.11.2事件的書面通知內容：包含事件分類（失能傷害事故，醫療傷害事故，急救事故等）的初步書面報告的電子郵件應盡快提供給興達海基現場管理部門，但不得遲於事故後8小時。

Written notification of incident: An email with a preliminary written report to include the incident classification (lost time, medical treatment, first aid, etc.) describing the incident shall be provided to SDMS Site management as soon as possible, but no later than 8 hours after the incident.

5.11.3事件的正式調查：應向興達海基現場管理部門提供正式事故報告，說明事故，事故原因以及已經或將要採取的矯正與預防措施。報告應在事件發生後七天內提供給興達海基，除非興達海基現場管理部門書面同意延後。矯正措施的狀態應每週提供給興達海基現場管理部門，直到所有項目都完成。此外應審查相關的安全工作制度的有效性，作為正式調查的一部分。

Formal investigation of incident: A formal incident report shall be provided to SDMS Site management describing the incident, the cause(s) of the incident and the corrective / preventive actions that have or will be taken. The report shall be provided to SDMS no later than seven (7) days from the incident unless there is a documented extension agreed by SDMS Site management. The status of the corrective actions shall be provided to Site management each week until all items are closed. In addition, the relevant safe system of work shall be reviewed for effectiveness as part of



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the formal investigation.

#### 5.11.4最終的事故報告必須至少包含以下信息：

The final accident/incident reports must at least contain the following information:

- (1)事故/事件描述(Description of the accident/incident)
- (2)與相關人員面談(Interviews with personnel involved)
- (3)事故/事故的根本原因(Root causes for the accident/incident)
- (4)改善消除行動(Mitigating actions)

#### 5.12 環安衛管理計劃(HSE Plan)

##### 5.12.1應使用現有的環安衛管理系統作為基礎和相關程序來建立環安衛管理計劃，應列出參考用的現有程序和文件清單，除非法律要求，否則不須包括完整的程序，以減少化文件的大小。

The HSE Plan should be established using existing HSE management systems as basis and associated procedures and controls. References should be made to existing procedures and documentation in the HSE Plan, complete procedures may not be included, unless required by law, to assist in minimizing the size of the document.

##### 5.12.2環安衛管理計劃必須包含每個製造現場的以下信息：

The HSE Management Plan must include the following information for each Fabrication Site:

- (1)健康與安全政策(Health & Safety Policy)
- (2)環境政策(Environmental Policy)
- (3)現場環安衛組織(HSE Organization onsite)
- (4)現場簡介(Site induction)
- (5)與員工溝通(Communication with workforce)
- (6)環安衛檢查的信息(Information regarding HSE Inspections)
- (7)環安衛稽核時間表(Schedule for HSE Audits)
- (8)確保分包商與人員能力合格的程序(Procedure for ensuring competent personnel and Subcontractors)
- (9)工程製造現場使用的分包商名單(List of Subcontractors used on Fabrication Site for the Works)
- (10)將環安衛信息傳達給興達海基的方法(Communication of HSE information to SDMS)
- (11)環安衛事故、虛驚事件和安全問題的通報程序(Procedure for reporting accidents, incidents, near misses and safety concerns)
- (12)製造現場的環安衛目標和績效指標(HSE goals and KPI's for the Fabrication Site)
- (13)製造現場的最低個人防護具要求(Minimum PPE requirements on Fabrication Site)
- (14)製造現場的特定緊急應變計劃(Site specific Emergency Response Plan)
- (15)內部通道，道路維護，製造區域，辦公室，限制區域和逃生路線規劃 (Planning of internal traffic, maintenance of roads, fabrication areas, offices, restricted areas and escape routes)
- (16)外部運輸道路規劃(Planning of outside transportation route and traffic)

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### 5.13. 環安衛月報 (HSE Monthly reporting)

5.13.1 每個月，承包商必須每月提交事故和工作時間概述。概述內容至少必須包括以下項目：

Each month the Contractor must forward a monthly overview of incidents and working hours. As a minimum, the overview must include:

(1) 在該工地現場的工作人時。

Number of working hours for the relevant fabrication site(s).

(2) 失能傷害件數與說明。

Number of LTI's including a description of these.

(3) 工作受局限的傷害件數與說明。

Number of RWC's including a description of these.

(4) 醫療事故件數與說明。

Number of MTC's including a description of these.

(5) 可能造成人員死亡或永久失能的重大傷害高危害風險的事件件數。高危害風險的事件指類似 C4 級危害(可能造成一至三人死亡或永久失能的事件)或 C5 級危害(可能造成超過三人死亡或永久失能的事件)

Number of high potential incidents that could have led to a fatal accident or an accident with permanent injury – incl. a description of these. High potential incidents will be similar to C4 and C5 risk potential.

## 6. 特定作業管理項目 (Specific Work Safety management Items)

### 6.1 工作許可證 (Permit To Work; PTW)

6.1.1 必須根據工作許可證流程運作來管理高危險性作業活動，以確保有效鑑別危害和實施有效保護措施，降低作業風險。

Certain hazardous work activities will required to be carried out under a Permit-to-Work (PTW) process to ensure hazards and risks associated with these activities are effectively identified and safeguarded.

6.1.2 興達海基工作許可證程序提供書面授權，規定執行某些高危險性工作所需的安全措施和過程，以保護現場人員，環境，設備和材料資源免受傷害和/或損壞的風險。

The SDMS PTW Procedure provides the written authorization, defines the safety measures and processes required to carry-out certain works in order to protect Site personnel, the environment, equipment and material resources from the risk of harm and/or damage.

6.1.3 受工作許可證程序約束的工作活動應包括但不限於：

Work activities that are subject to a PTW shall include but not be limited to:

(1) 在局限空間工作。(Work in confined spaces)

(2) 個人獨立工作。(Lone Working)

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(3)有可燃氣體區域的動火作業。(Fire work at combustive gas area)

(4) 5m 以上的高處作業。(Working at height over 5 meters)

6.1.4 興達海基保留自行決定添加其認為高風險或需要對工作許可證程序進行任何其他特殊考慮的任何管理活動的權利。

SDMS reserves the right to add any activities that it considers to be high risk or require any other special consideration to the PTW Procedure at its discretion.

(1)如果沒有興達海基簽發的有效工作許可證，承包商不得從事有工作許可證程序要求的任何工作。

The Contractor shall not engage in any Work that requires a PTW under the PTW Procedure without a valid PTW issued by SDMS.

(2)興達海基會在專案開始時發佈單獨的現場指令，定義現場必須的工作許可證程序。興達海基將在專案現場或其設施中向承包商提供或安排現場特定的工作許可證程序訓練。

SDMS shall issue a separate Site Instruction at the beginning of the Project defining the Site PTW Procedure. SDMS will provide or arrange for the site specific PTW Procedure training to the Contractor at the Project Site or their facilities.

## 6.2 個人防護裝備 (Personal Protection Equipment; PPE)

6.2.1 興達海基專案工地現場個人服裝/工作服要求規定：要求所有人員免受飛濺或噴灑過多的灰塵，油脂，油脂和有毒物質，機械，熱，冷和火災危險，可能對身體造成傷害。一般而言，所有工作人員都必須穿戴高能見度工作服。上述要求不適用於辦公場所，所有非工作區域（即餐廳飲食區域）或安全的行人路線，除非暴露於特定的危險區域。此外，在確認不存在可能對使用這些工作服會有造成傷害的明確風險條件下，興達海基有能力允許其認為可接受的替代性工作服。

The SDMS Personal Clothing / Work wear Requirements: All personnel are required to be protected against [splashes](#) or sprays from excessive dust, oils, greases and toxic substances, mechanical, heat, cold and fire hazards that could cause injury to their body. In general, all personnel working in locations are required to wear high visibility. The above requirements do not apply in office locations, all non-working areas (i.e. canteen eating areas) or safe pedestrian routes unless exposed to specific identified hazards. In addition, SDMS have the capacity to permit alternative general working clothes where they deem acceptable and no identified risk is present that could cause harm in using these working clothes.

6.2.2 興達海基專案工地現場最低個人防護設備規定：

Minimum PPE requirements on all Sites:

(1)足部保護：所有人員必須得到足夠的保護，防止腳部受傷，包括但不限於操作和提升操作，滾動物體或刺穿腳底的物體，以及員工暴露於電氣危險時，包括靜電放電。安全鞋或防護鞋 依據工作之適用性，必須符合等於或高於 CNS 20345 或 CNS 20346 或 ANSI Z41 PT 91 或 EN ISO 20345 或等級水準的要求。如果存在危險化學品與腳接觸的風險，則材料安



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全數據表中推薦的安全鞋優先作為強制性 PPE。

Foot Protection: All personnel must be adequately protected against hazards causing foot injuries; these include, but are not limited to handling and lifting operations, rolling objects, or objects piercing the sole of the foot, and when employees are exposed to electrical hazards including static discharge. Protective footwear must meet the requirements equal to, or higher than, that of CNS 20345 or ANSI Z41 PT 91 or EN ISO 20345 or equivalent level. Where risk of hazardous chemical contact with feet exists, the safety footwear recommended in the material safety data [sheet](#) takes precedence as the mandatory PPE.

- (2)頭部保護：應充分保護所有人員免受頭部受傷的危險，包括但不限於墜落物體危險，使用低懸掛設備或機器，使用帶電電纜，在梯子上爬高距離，使用懸掛負載並在頭部自由空間較小的區域工作。工業頭部保護必須是工業硬質安全頭盔，滿足 CNS 1336 或 ANSI 標準 Z89.1 2003 或 EN 397 或等級水準的最低要求。如果存在電氣危險，則工業頭盔滿足 CNS 4598 或 ANSI 標準 Z89.1 2003 或 EN 397 E 級或等級水準要求。如果存在掉落頭盔的危險，下顎帶是必要的。

Head Protection: All persons shall be adequately protected from hazards causing injury to the head, these include, but are not limited to, falling object hazards, working with low hanging equipment or machinery, working with live electric, climbing high distances on ladders, working with suspended loads and working in areas of low free space in head levels. Industrial head protection is required to industrial hard safety helmets fulfilling the minimum requirements of CNS 1336 or ANSI standard Z89.1 2003 Type 1 or EN 397 or equivalent level. Where exposed to electrical hazards then industrial helmets fulfilling the requirements of CNS 4598 or ANSI standard Z89.1 2003 Type 1 Class E or EN 397 Class E or equivalent level are required. Chin straps are necessary if there is a risk of dropping the helmet.

- (3)眼睛防護：符合 CNS 7176 或 CNS 7177 或 BS EN 166,167 和 168 或等級水準，帶有固定側護板，適用於與任務相關的危險。

Eye Protection: comply with CNS 7176 or CNS 7177 or BS EN 166,167 & 168 or equivalent level with fixed side shields and appropriate for the hazards associated with the task.

- (4)手部防護：所有人員必須有足夠的保護，防止造成手部受傷的危險，這些危害包括但不限於皮膚吸收有害物質，暴露於寒冷、擦傷、割傷、撕裂或刺破皮膚，化學品燒傷，熱灼傷和手動材料處理危險。由於各種類型的危害，手套的種類必須通過評估暴露的危害程度，產品的風險、性能和質量特性，工作場所存在的條件以及可能的使用持續時間來確定。

Hand Protection: All personnel must be adequately protected against hazards causing injuries to the hands, these hazards include, but are not limited to, skin absorption of harmful substances, exposure to cold, abrasions, cuts, lacerations or punctures to the skin, chemical burns, thermal burns and manual material handling hazards including vibrations. Due to the various types of





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hazards, the variety of glove must be determined by an evaluation of the exposed hazards and level of risk, performance and quality characteristics of the product, conditions present in the workplace, and the likely duration of use.

6.2.3 承包商應確保為每個承包商人員提供正確的PPE以滿足興達海基的要求，並進一步確保始終保持對PPE的定期檢查，適當的護理，維護和檢查/認證。應保留記錄以應興達海基的要求進行證明。

The Contractor shall ensure that each of the Contractors personnel are provided with the correct PPE to meet SDMS requirements and further ensure that regular inspection of PPE, proper care, maintenance, and inspection/certification is maintained at all times. Records shall be retained to demonstrate such at the request of SDMS.

6.2.4 在任何特定任務風險評估中確定需要額外的特定PPE，並考慮到正在執行的任務以及暴露於並將涵蓋諸如防止高空墜落，電氣危險，化學防護，呼吸和聽力保護等方面的危害。

Additional specific PPE will be required as identified in any task specific risk assessment taking account the task being performed and the hazards exposed to and will cover aspects such as protection against falling from height, electrical hazards, chemical protection, respiratory and hearing protection.

### 6.3 高處工作安全(Working at Height)

6.3.1 只要技術人員必須離開地面工作（無論高度如何），就必須減輕高空作業的風險，並且應該使用最安全的選項(例如使用高空作業機代替便攜式梯子)。墜落防護的類型和使用應被視為任何風險評估的一部分，並與確保安全工作和符合當地法規實施。所有在興達海基場所進行高處作業的人員，應要求佩戴包括以下內容的個人防墜落系統項目：

Working at heights risks must be mitigated anytime a technician has to work above the ground (regardless of height) and the safest option should be used (for example, using aerial lift instead of a portable ladder). The type of and use of fall protection should be considered as part of any risk assessment and implemented consistent with ensuring safe working and local regulations. All personnel performing activities on elevated levels on SDMS site shall be required to wear a personal fall protection system comprising the following items:

(1) 一個全身型背負式安全帶，帶有四個連接點，包括胸環，後防墜落連接元件和兩個D側環，用於工作定位，獨立腿帶，胸帶和連接器，可調節肩帶。全身式安全帶必須符合或超過 CNS 14253-1 或 EN361 和 EN358 或 ANSI Z359：2007 或等級水準的要求。

One Full Body Harness, with four attachment points including a chest loop or chest ring, a rear fall arrest attachment element and two side D rings for work positioning purposes, Separate leg straps, chest strap and connector, and adjustable shoulder straps. The full body harness must meet or exceed the requirements of CNS 14253-1 or EN361 and EN358, or ANSI Z359:2007 or equivalent level.

(2) 一個雙掛繩加減震包，需要在 1.8 和 2 米之間。這必須達到或超過 CNS 14253-2 或 EN 355

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或 ANSI Z359：2007 或等級水準的要求，此外施工架掛鉤彈簧扣必須至少保持 16 KN。

One Double lanyard, shock absorbing, required to be between 1.8 and 2 meters in length. This must meet or exceed the requirements of CNS 14253-2 or EN 355 or ANSI Z359:2007 or equivalent level. Furthermore the Scaffold hooks must hold as minimum a 16 KN.

- (3)一組垂直擒墜器，使用 8mm 直徑以上安全索（符合 CNS 14253-3 或 EN 353-1 或等級水準）；一組防墜落滑動擒墜器帶有攀山扣，直徑為 9.6mm 的垂直安全索（符合 CNS 14253-4 或 ANSI Z359：2007 或等級水準）或一組垂直防墜器（符合 CNS 14253-3 和 CNS 14253-4 或 EN 353-1 和 ANSI Z359：2007 或等級水準）用於垂直導軌式防墜落保護。

One vertical fall arrest glider for 8mm diameter safety wire (compliant to CNS 14253-3 or EN 353-1 or equivalent level); One fall safety glider with carabineer for 9.6mm diameter vertical safety wire (compliant to CNS 14253-4 or ANSI Z359:2007 or equivalent level), or One guided type fall arrester (compliant to CNS 14253-3 and CNS 14253-4 or EN 353-1 and ANSI Z359:2007 or equivalent level) for vertical rail type fall arrest protection.

- (4)一個可調節掛繩，必須符合或超過 CNS 7534 或 EN 358 或 ANSI Z359：2007 或等級水準的要求。由於救援設備搭配，繩索厚度不得小於 12 mm 或超過 16 mm。

One adjustable lanyard, required to be between 1.8 and 2 meters in length. This must meet or exceed the requirements of CNS 7534 or EN 358 or ANSI Z359:2007 or EN 795 or equivalent level. The rope thickness must not be less than 12 mm or exceed 16 mm due to rescue equipment.

- (5)興達海基場所使用的所有防墜落設備的連接器卡扣應符合 CNS 14253 或 EN 362 或 ANSI Z359：2007 或等級水準的要求。連接器設備應經過認證，具有足夠的強度能力，具有自我關閉和自鎖門機構 - 只能通過至少兩次故意操作打開，沒有可能切割或損壞繩索或織帶的鋒利邊緣，並由具有腐蝕性保護或抗性的金屬（例如鋼或鋁）構成。

Connector carabineers for all fall protective equipment used within Siemens Renewable Energy locations shall fulfill the requirements of CNS 14253, EN 362 or ANSI Z359:2007 or equivalent level. The connector device shall be certified to be of adequate strength capability, have a self-closing and self-locking gate mechanism – only capable of being opened by at least two deliberate actions, have no sharp edges that could cut or damage ropes or webbing, and be constructed of metal (e.g. steel or aluminum) with corrosive protected or resistant properties.

- (6)個人自動回縮式救生索應滿足 CNS 14253-4 或 ANSI Z359：2007 或 EN 360 或等級水準的要求。它們必須具有防墜落等級，並具有能量吸收功能，無論是在設備內部還是外部併入可伸縮掛繩，可將墜落捕獲能力力減少到 8kN（或國家立法要求的更低）。

Personal self-retracting lifelines shall fulfill the requirements of CNS 14253-4, ANSI Z359:2007, or EN 360 or equivalent level. They must be fall arrest rated, and have an energy absorbing function, either internal to the device or incorporated externally onto the retractable lanyard, that reduces fall arrest body forces to 8kN (or less where required by national legislation).

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(7)防墜落系統的所有“非個人”部件，如固定點，救援設備，內部塔式梯子上的垂直墜落安全線和慣性捲軸（溜溜球系統）應符合國家特定的法規標準。

All ‘non-personal’ components of fall protective systems such as anchorage points, rescue equipment, vertical fall safety wire on the internal tower ladders and the inertia reel (yo-yo system) shall be compliant to country specific legislations and standards.

6.3.2所有防墜落設備應有定期檢查計劃，檢驗間隔不超過6個月。

All fall protection equipment shall be part of scheduled inspection scheme with an inspection interval of no greater than 6 months.

6.3.3高處作業必須有高處墜落緊急救援計畫，作業現場必須準備所需的救援器材，作業人員必須至少有一位接受過高處救援訓練。

Working at height shall prepare a high rescue plan, rescue material resources shall be ready on site, and at least one trained personnel shall be on site.

6.3.4承包商應建立和維護一個高處作業安全工作系統，以防止從高處作業墜落。這安全的工作系統至少應包括：

The Contractor requires that a safe system of work for the prevention of falls from height is established and maintained. This safe system of work should as a minimum include:

(1)為高空活動的所有工作人員進行任務規劃和準備。

Task planning and preparation for all working at heights activities.

(2)在工作開始之前以及在工作範圍發生變化或墜落風險增加的任何時候進行風險評估。

Risk assessments being conducted before the commencement of work and at any time the scope of work changes or the risk of a fall increases.

(3)高空救援計畫。

Rescue at height plan.

(4)依據控制層次結構(消除、取代、工程控制、管理措施、個人防護具)來選擇適當的控制措施。

Appropriate control measures being selected using the hierarchy of controls (elimination, substitution, engineering control, administrative control, PPE).

(5)確保所有參與高處作業的人都有足夠防墜能力，並了解預防墜落的措施。

Ensuring all persons involved with working at heights activities are competent to perform their role and understand the process for the prevention of falls.

(6)具有結構化和已經完成溝通的安全工作程序，包括使用個人防墜落設備。

Having structured and communicated procedures for safe working at heights in place including the use of personal fall prevention equipment.

(7)封閉作業區域以防止物體掉落造成事故。

Closing off areas to prevent accidents caused by dropped objects.



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#### 6.4 物品飛落防護(Falling Object Protection)

6.4.1所有承包商必須了解墜落物體的危險。在開始任何任務之前，安全工作系統必須評估掉落物體的可能性並消除或減輕這種危險。

All Contractors must be made aware of the hazards associated with falling/dropped objects. Before beginning any task the Safe System of Work must assess the possibility of dropped objects and eliminate or mitigate this hazard.

6.4.2平台之間一次只允許一個人進入單個梯子部分（佈線作業期間除外）。

Only one (1) person is allowed on an individual ladder section at one time between platforms (except during cabling activities).

6.4.3塔架前面應放置標誌，鏈條或警示帶，以確保其他人不會進入下面可能存在掉落物體的區域。

A sign and chain or warning tape shall be placed at the front of the jacket to ensure others do not enter the area below where the possibility of dropped objects may exist.

6.4.4當有人在上面的梯子部分進行作業時，不允許任何人在作業區的下方內。（佈線作業期間除外）

No one is allowed within the jacket at the base when someone is performing work on the ladder section above. (Exception – cabling activities)

6.4.5任何人不得故意將自己置於他人的工作範圍之下。

No person should intentionally position themselves below the work area of others.

6.4.6所有地面開口和蓋板在不使用或正在進行加工時必須保持關閉狀態。

All ground or flat openings and covers must remain closed when not in use or actively being worked on.

6.4.7所有人員應評估對掉落物品造成危害的開口，活動和條件，並尋求糾正措施以減輕或消除這些危害。

All personnel shall assess openings, activities, and conditions that create a hazard for dropped items and seek corrective actions to mitigate or eliminate those hazards.

6.4.8所有工具，設備，物品等必須在使用或攀爬時固定在繫繩上，以防止物體掉落。

All tools, equipment, items, etc. must be secured to a tether while in use or climbing to prevent the objects from falling.

6.4.9所有不必要的物品;包括鬆動的螺母，螺栓，未使用的零件等，應從高工作位置移除或放置在安全的位置。

All unnecessary items; including loose nuts, bolts, unused parts, etc., shall be removed from high working location or shall be placed in a secured location.

6.4.10高工作場所的所有物品，包括零件，設備，產品和工具，必須在不使用時存放在封閉的頂部容器內。封閉式頂部容器的實例是帶蓋的手提袋和頂部封閉的提袋。

All items including parts, equipment, products, and tooling on high working location must be stored within a closed top container when not in use. Examples of closed top containers are lidded totes and





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closed top bags.

6.4.11任何工具，設備，零件或物品不得存放在距離未受保護的開口1.2米以內的地方，以免墜落物體。這包括艙口，通風口，任何其他無保護的開口。

No tools, equipment, parts or items shall be stored closer than 1.2m from unprotected openings that expose the object to a fall. This includes hatches, air vents, any other unprotected opening.

6.4.12應使用以下一種或多種方法防止物品墜落：

Item shall be secured from falling using one or more of the following methods:

(1) 工具/設備袋，袋和皮套;(Tool/Equipment Bags, Pouches, and Holsters)

(2) 工具/設備高空繫繩;(Tool/Equipment Bungee Tethers)

(3) 重型工具/設備繫繩;(Heavy Duty Tool/Equipment Tethers)

(4) 纜繩/快拆綁帶;(Rings/Quick Wrap/tie wraps)

(5) 磁性托盤;(Magnetic trays)

(6) 手機/無線電皮套。(Radio/Cell Phone Holsters)

6.4.13不要將超過4.5公斤的工具繫在人身上;它必須附在一個固定的結構上。

Do not tether a tool that exceeds ten 4.5 kg to a person; it must be attached to a fixed structure.

6.4.14不要以任何方式修改工具掛繩（更換工具掛繩組件，如卡扣夾，側面釋放斷開夾或拆除減震組件可能會影響掛繩的額定載荷）。

Do not modify the tool lanyard in any way (replacement of tool lanyard components such as carabineer clips, side-release disconnect clips or removal of shock-absorbing components may affect the lanyard's load rating)

6.4.15在可能發生機械被纏繞的情況下，請勿使用工具繫繩。

Do not use tool tethers in situations where machinery entanglement is a concern.

6.4.16始終使用適合工具/物體重量的工具掛繩。

Always use a tool lanyard that is rated properly for the tool/object weight.

6.4.17只允許使用帶頂蓋的額定裝載提升袋。

Only load rated lifting bags with a top closure are permitted for use.

## 6.5 起重作業和一般起重要求(Lifting Operations and General Lifting Requirements)

### 6.5.1證書(Certificate)

(1) 起重機操作員須由認可發證機構核證其所操作的起重機的類型及容量。證書的最終驗證將在作業現場完成。

Crane operators shall be certified by a recognized certifying body for the type and capacity of the crane for which they will be operating. A final verification of the certificate will be done at the project Site.

(2) 指揮吊掛人員應由認可機構證明其操縱並符合所有培訓要求。在作業現場，將對證書進行最終驗證。

Slingers shall be certified by a recognized body for rigging and meet all the training requirements. A final verification of the certificate will be done during the Site induction at the

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project Site.

- (3) 起重機須由認可機構核證類型及吊升荷重容量。證書的最終驗證將在作業現場完成。

Lifting crane shall be certified by a recognized body for the type and capacity of the crane. A final verification of the certificate will be done at the project Site.

#### 6.5.2 溝通(Communication)

- (1) 當起重機操作員無法保持負載的所有方向和沿吊升路徑隙的無障礙視野的情況下，應設置指揮信號員。

A signaler shall be used at all times. This is especially important where the crane operator cannot maintain an unobstructed view of all aspects of the load and the clearances along the lifting path.

- (2) 如果在起重機操作期間需要語音通信，則通信應通過專用無線電信頻道完成。但是行動電話不得用作提升操作中的通信方法。如果主要無線電通信失敗，吊升操作將立即停止。

If voice communication is required during a crane operation, the communication shall be done over a dedicated radio channel. A mobile phone shall not be used as a method of communication in a lifting operation. Lifting Operations will stop immediately in the event of primary radio communications failing.

- (3) 國際或商定的手勢信號應張貼在吊升作業的工作地點。

International or agreed hand signals shall be posted at the work location where the lifting operation takes place.

#### 6.5.3 路障/障礙(Barricades/Barriers)

- (1) 應在每個起重機操作的所有入口點設立一個禁區，以防止非必要人員/車輛進入起重區。禁區應為使得通道被屏障的人員進入物理限制。

An exclusion zone shall be established at all access points to each crane operations to prevent non-essential personnel / vehicles from entering the lifting area. The exclusion zone shall be physical barrier across all access routes.

- (2) 最低要有以下標誌：“請勿進入”以及如果需要進入禁區，則應與誰聯絡。

Sign stating at a minimum Danger - “Do Not Enter” and “who to call” if access is needed to enter the exclusion zone.

- (3) 旋轉結構的最大擺動半徑應圍繞設置有物理屏障（即繩索或錐體）。該路障應距離最近的物體至少 1 米。如果不能保持這種距離和路障，則應定位一個觀察員，清楚地看到受限間隙的區域，以防止旋轉結構撞擊物體。

The swing radius of the rotating structure shall be barricaded with a physical barrier (i.e. rope or cones) around the worst case swing radius. This barricade shall provide a minimum distance of 1 meter from the nearest object. In the event this distance and barricade cannot be maintained, a spotter shall be positioned with a clear view of the area of restricted clearance to

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prevent the rotating structure from contacting the object.

#### 6.5.4 檢查(Inspection)

- (1) 所有起重機應有每日，每月和每年的記錄檢查。

All cranes shall have a documented daily, monthly and annual inspection.

- (2) 合格的吊掛作業員應在每次使用前目視檢查所有起重配件/吊索具。在檢查過程中發現的任何缺陷應從服務中移除並提供給倉儲或工具管理人員進行管制不用。

A competent rigger shall visually inspect all lifting accessories/rigging prior to each use. Any defects identified during this inspection shall be removed from service and provided to the storekeeper / tooling person to quarantine for being used.

- (3) 在提升操作期間，如果負載接觸到起重機的任何承載元件（即吊桿），則應停止操作，並且起重機的主管檢查員應對起重機損壞進行評估留存書面記錄，以確定操作是否應繼續或負載應降低到地面。

During a lifting operation if the load contacts any load bearing element of the crane (i.e. the boom) the operation shall be stopped and a competent inspector shall perform a documented assessment of the damage to determine if the operation should continue or the load shall be lowered to the ground.

#### 6.5.5 安全裝置(Safety Devices)

- (1) 所有起重機應配備過載保護裝置。

All cranes shall be equipped with an overload protection device.

- (2) 所有移動式起重機應配備上行程限位開關（2層防護擋）。

All mobile cranes shall be equipped with an upper travel limit switch (anti-2-block).

#### 6.5.6 吊掛人員(Hoisting Personnel)

- (1) 吊掛人員任何時候不得騎在吊鉤或已裝載的貨物上面。

Personnel shall not ride the hook or load at any time.

#### 6.5.7 起重機操作(Crane Operations)

- (1) 吊掛計劃應包含於製作的安全工作管理系統中，並應放置於起重吊掛地點。

A Safe System of Work incorporating where required a lift plan shall be prepared and shall be located at the lifting location.

- (2) 在每次吊掛操作之前，應進行工具箱會議和預吊掛檢查。

A toolbox talk and pre-lift checks shall be conducted prior to each lifting operation.

- (3) 起重作業的負責人應確保所有被吊起的物體在起吊之前具有估計物體的重量和重心，因此可以選擇索具以確保吊掛負載的安全和平衡。

The person in charge of the lifting operation shall ensure all objects being lifted have an estimated weight and center of gravity established prior to lifting the object so rigging can be selected to ensure load is secure and balanced.

- (4) 當吊掛物在懸吊時，起重機操作員應始終在起重機控制裝置上。當吊索在操作員不在場





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時，如果吊掛物需要懸掛在起重機吊鉤上時，它們應位於與人員隔離或其他安全位置的區域上方。

A crane operator shall be at the crane controls at all times while a load is suspended. When slings are required to remain suspended from the crane hook while the operator is not present they shall be positioned above an area that is barricaded from personnel or in another safe location.

#### 6.5.8 負載控制引導繩 (Load control tag lines)

- (1) 當負載旋轉在運動過程中會產生危險時，應於吊升負載上設置引導繩。

Tag lines shall be used when load rotation creates a hazard during movement.

- (2) 引導繩應有適當的數量，長度和直徑，以控制負載物。

Tag lines shall be an appropriate number, length and diameter to maintain load control.

- (3) 引導繩不應捆綁在一起以形成較長的引導繩。

Tag lines shall not be tied together to make a longer tag line.

- (4) 引導繩不得與固定物體聯繫在一起。

Taglines shall not be tied to a fixed object.

- (5) 引導繩不得纏繞在工人的手或身體周圍。

Taglines shall not be wrapped around workers hands or body.

- (6) 只有當負載高度低於約 1 米（3 英尺）時，才允許以身體手部接觸來控制負載。並且控制負載的人，必須保持在任何夾撞點之外和避開吊掛物下方陰影區時才可以這樣做，執行時須由吊掛負責人指定同意。

Controlling the load through physical contact shall only be permitted when the load is lifted no higher than approximately 1 meter (3 feet) and the person controlling the load can do so while remaining outside of any pinch points and outside the shadow of the load or as determined by the Person in Charge.

#### 6.5.9 吊掛上方障礙物 (Overhead obstructions)

- (1) 應確定在作業現場和沿著吊掛行動路線上方的所有架空電力線和架空障礙物。

All overhead power lines and overhead obstructions at operational sites and along travel routes shall be identified.

- (2) 電力線高度和工作電壓應在吊掛路徑與電力線交叉口或其附近標明，或者以同樣有效的方式向受影響吊掛人員傳達充足的危害信息。

The power line elevation and operating voltage shall be marked on or adjacent to the power line crossing or that information otherwise communicated in an equally effective manner to effected personnel.

- (3) 應從配電網絡運營商或電力供應公司確定電線安全間隙和禁區距離要求。應考慮基於起重機最大臂長和連接起重機吊臂尖端的負載長度 and 的危害半徑。

Safe clearance distances and exclusion zone requirements should be ascertained from the



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Distribution Network Operator (DNO) or Electricity Supply Company. Consideration shall be given to the collapse radius based on the cranes maximum boom length and length of the load attached and crane tip.

- (4) 應採取適當措施，為這些線路採取斷電、移線、保護和配置電路保護系統。

Appropriate action shall be taken to de-energize, move, guard and configure circuit protection systems for these line segments.

- (5) 在開始電線附近的操作之前，應通知負責線路的組織請求提供所有相關信息，並應要求負責組織的合作配合。

Before starting an operation near electrical lines, the organization responsible for the lines shall be notified and provided with all pertinent information. The responsible organization's cooperation shall be requested.

- (6) 任何時候移動式起重機將在架空電力線路附近運行，而該架空電力線路在工作點沒有斷電且明顯接地，必須依照以下程序：(f1) 必須豎立絕緣屏障，屏障不是起重機的一部分或附件，以防止與電力線接觸。(f2) 書面計劃告知起重機操作員，設置將用於將起重機或負載的任何部分接近與電力線路的間隙時發出警示的方法。

Any time a mobile crane will be operated near to an overhead power lines that has not been de-energized and visibly grounded at the point of work. The following must occur: (f1) Insulating barriers, not a part of or an attachment to the crane must be erected to prevent physical contact with power lines or (f2) A written plan on the methods that will be used to warn the crane operator that any part of the crane or load is approaching the clearance limits.

#### 6.5.10 起重機組裝/拆卸要求(Crane Assembly / Disassembly Requirements)

- (1) 製造商的裝配和拆卸程序必須位於起重機的指定組裝/拆卸的位置。

The manufacturer's assembly and disassembly procedure must be at the location where the crane is being assembled / disassembled.

- (2) 應根據製造商或承包商的起重機裝配和拆卸程序制訂安全工作系統。

A Safety System of Work shall be developed based upon the manufacturers or the Contractors' assembly and disassembly procedure.

- (3) 當通過考慮風險等級而無法避免任何潛在的高度跌落時，應使用個人防墜落系統 (PFAS)。

A personal fall arrest system (PFAS) shall be used when any potential fall from height cannot be avoided through consideration of risk mitigation hierarchy.

#### 6.5.11 現場起重機移動(Moving Cranes On-Site):

- (1) 起重機只能在經工程設計考慮的行走路徑上移動。如果起重機不能工程設計考慮的行走路徑上移動，可以使用非工程行駛路徑，但必須由專業工程師簽署文件並提交給興達海基專案經理，確認地面承重壓力足以滿足起重機的要求。

Cranes shall only be moved over engineered travel paths. In the event a crane cannot be moved

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over an engineered travel path, a non-engineered travel path can be used with documentation signed by a professional engineer and submitted to SDMS project manager that the ground bearing pressure is adequate for the crane.

#### 6.5.12 吊掛索具/起重配件和其他硬體(Rigging / Lifting Accessories and Hardware)

- (1) 所有索具/起重配件應存放在有管理的索具工具間或適當的等效房間中，以防止物理損壞。

All rigging / lifting accessories shall be stored in either a managed rigging loft or suitable equivalent arrangements to protect against physical damage or deterioration.

- (2) 所有起重設備應由合格人員按照檢驗計劃進行徹底檢查。建議的指定間隔：個別用於起重設備相關配件(6 個月)，所有起重設備組合(12 個月)。檢查記錄應包括檢查的項目，檢查的設備的序列號，確定的任何缺陷以及缺陷的改善日期。

All lifting equipment shall undergo thorough examination by a competent person in accordance with an agreed examination scheme. Recommended specified intervals: 6 months for lifting equipment and any associated accessories, 6 months, 12 months for all other lifting equipment. Records of the inspection shall contain the items inspected, the serial number of the equipment inspected, any deficiency that were identified and the date the deficiency was resolved.

- (3) 所有起重吊掛配件/索具應明確標明工作負載荷重限值。

All lifting accessories / rigging shall have the Working Load Limit clearly marked.

- (4) 所有吊帶應有一個永久性標籤，標明各個序列號，額定容量（包含安全工作負載 和最大工作負載限制），材料類型，製造商和長度。

All slings shall have a permanent tag indicating the individual serial number, rated capacity (safe working load/working load limit), type of material, manufacturer and length.

- (5) 除吊帶外，吊鉤下方的所有裝置均應在超過 45 公斤時標明其重量。

All below the hook lifting devices except slings shall be marked with their weight when exceeding 45kg.

- (6) 除非索具製造商的規格另有規定，否則所有起重配件/索具不得在低於-20 度 C (-4 度 F) 的溫度下使用。

All lifting accessories / rigging shall not be used in temperatures below -20C / - 4F unless otherwise specified by the rigging manufacturer's specifications.

- (7) 所有起重設備只能用於起吊。

All lifting equipment shall only be used for the purpose of lifting.

- (8) 所有起重硬件，例如扣環和掛鉤，應永久標記其額定容量和製造商。

All lifting hardware such as shackles and hooks shall be permanently marked with its rated capacity and the manufacturer of the lifting hardware.



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- (9) 任何起重設備中發現的任何缺陷必須報告給興達海基，並不得再使用要明確標記為有缺陷，並從現場拆除或銷毀。

Any defects identified in any lifting equipment must be reported to SDMS and the equipment removed from use, clearly marked as defective, and removed from Site or destroyed.

- (10) 建議根據有效的測試時間並根據當地法規對吊掛鋼索與吊帶進行顏色編碼/標記，張貼顯示有效顏色的可見標誌。

It is recommended that lifting wire and sling is colour coded/marked in accordance to valid test period and in accordance with local legislation. Visible signs showing valid colour should be posted.

#### 6.5.13 吊升計劃要求(Lift Plan Requirements)

- (1) 吊升計劃應在作業前二週提交，並在開始吊升作業之前由興達海基正式審查接受。

Lift plans shall be submitted two weeks prior to mobilization, and formally accepted by SDMS before commencement of the lifting operations.

- (2) 如果與吊升計劃有任何偏差，應停止運行，並將修訂的吊升計劃提交給興達海基進行驗收。

If there are any deviations from the lift plan, the operation shall be stopped and a revised lift plan shall be submitted to SDMS for acceptance.

- (3) 將定期評估所有提升操作，以確定是否符合提交的吊升計劃，並且提交給興達海基的吊升計劃的任何偏差或修訂將導致停止工作，直到修訂的吊升計劃正式提交並被接受為止。

All lifting operations will routinely be assessed to determine compliance to the submitted lift plans and any deviations or revision from the lift plan submitted to SDMS, will result in a stop work until a revised lift plan has been formally submitted and accepted.

- (4) 吊升計劃必須放置在作業現場，承包商必須在每台起重機開始前與所有參與起重作業的員工一起審查吊升計劃，作為所須的作業前準備事項的一部分。

The lift plan must be present on Site and the Contractor must review the lift plan as part of the required Pre task planning together with all employees involved in the lifting operation prior to commencement of each lift.

- (5) 必須簽署並封鎖起重作業區域，以防止不必要和未經授權的人員進入該區域。

Area of Lifting Operations must be signed and cordoned to prevent unnecessary and unauthorized persons from entering the area.

- (6) 只有在操作區域有足夠的照明時才能進行夜間起重吊升操作。

Lifting Operations at night will only be carried out when there is sufficient lighting of the area of operation.

#### 6.5.14 預防性維護要求(Preventive Maintenance Requirements)

- (1) 所有起重機在現場操作之前，應根據當地法律要求定期進行徹底檢查。在使用現場設備和記錄之前，承包商應糾正所有缺陷。

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All mobile cranes shall have a thorough examination carried out in periodically in accordance with local legal requirements prior to being operated on Site. All deficiencies shall be corrected by the Contractor prior to using the equipment and records held on site.

(2) 應為每台起重機提供基於製造商建議和當地法規的書面預防性維護計劃。

A documented preventive maintenance program based on manufacturers' recommendations and local legislation shall be provided for each mobile crane.

#### 6.5.15 海上起重機(Offshore Cranes):

(1) 海上提升作業在作為陸上吊升作業的規劃，記錄和執行方面具有相同的審查程序。但是，由於環境（波浪，水流，船隻移動，疏散時間，通信等）可能會干擾吊升操作並可能導致的不同且不太可預測的環境，因此必須始終特別注意海上升降機的危險情況。在規劃和執行操作和疏散程序時必須考慮到這些情況。這包括根據法規要求降低起重機的吊升負載能力。

Lifting operations offshore have the same review process in respect to planning, documentation and execution of the operation as lifting operations onshore. However, special attention must always be given to offshore lifts as a result of the different and less predictable circumstances due to the environment (waves, current, boat movement, evacuation times, communication etc.) which can interfere with the lifting operations and potentially cause hazardous situations. These circumstances must be taken into consideration during both planning and execution of the operation and evacuation procedures. This includes downgrading the cranes lift capacity according to regulatory requirements.

#### 6.5.16 港口吊桿起重機(Port davit cranes):

(1) 用於裝載碼頭的船員的起重機必須安裝必須在碼頭區的一個位置進行，並具有足夠的承載能力，並對預期的載荷進行分析，以確保夾具在設計時考慮到安全性。起重機的伸展距離和承載能力必須足以使其能夠將所需的載荷從碼頭直接移動到船舶甲板上要固定的位置。

Cranes used for loading of crew vessels at quayside must be installed and used appropriately so as to avoid injury to both the user and other people in the vicinity. Installation must be done at a location on the quayside with adequate bearing capacity, with expected loads being analyzed so as to ensure the fixture is designed with safety in mind. The reach and load capacity of the crane must be enough such that it can move the required loads from quayside directly to the position on the vessel deck where it is to be secured.

### 6.6 危險能源的控制(Control of Hazardous Energy)

6.6.1 承包商應遵守興達海基或由興達海基書面授權，以便控制其所從事的工作範圍內所擁有自己的危險能源系統。

The Contractor shall either adhere to SDMS or shall be authorized in writing by SDMS to have their own control of hazardous energy system in place for the scope of work they are performing.

6.6.2 承包商應提供用於隔離能源的鎖定裝置和鎖，這些鎖不得用於任何其他目的。這些用於能源

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隔離的鎖定裝置必須具有識別裝置，以將它們與項目上的任何其他鎖定裝置區分開。必須向興達海基提供特定的顏色，形狀，配置或大小。

The Contractor shall supply lock-out devices and locks used for the purpose of isolating an energy source and these locks shall not be used for any other purpose. These lock-out devices for energy source isolation must have a means of identification which distinguishes them from any other locking device on the project. The particular color, shape, configurations or size must be provided to SDMS.

6.6.3 斷能鎖定的鎖必須作業人員個別持有鎖的鑰匙，並且在使用時，鑰匙應由放置鎖的人個別保管。

Lock-out locks must be individually keyed, and while in use, the key shall remain in the possession of the individual who placed the lock.

6.6.4 承包商應提供符合國際標準要求的斷能標籤。為了隔離能源，它們應與鎖定裝置一起使用，應採用標準化方式作為突出警告，即[危險!不要操作]。標籤必須具有可標示日期的信息空間，能源種類的識別和放置標籤的名稱。標籤上的結構，標記和書面信息應確保在暴露於天氣和/或腐蝕性環境時不會發生變質。

The Contractor shall supply tags that meet the requirements of international standards. They shall be used in conjunction with lock-out devices for the purpose of isolating an energy source shall be standardized in such a way to serve as a prominent warning, i.e., DANGER - DO NOT OPERATE. The tag must have informational spaces available for date, identification of energy source and name of individual placing tag. The construction, markings and written information on the tag shall be of such to ensure deterioration will not occur when exposed to weather and/or corrosive environment.

6.6.5 不論情況如何，任何隔離裝置均不得使用鎖定裝置及標籤操作。

No isolation device shall be operated with a lock-out device and tag attached, regardless of the circumstances.

6.6.6 任何人不得移走另一人的斷能鎖定或掛牌裝置。

No one shall remove another person's lock-out or tag-out device.

## 6.7 攜帶式直梯的使用(Use of Portable Ladders)

6.7.1 應通過良好的規劃和正確的設備選擇，即使用樓梯或平台作為實際替代方案，消除或減少階梯和斜梯的使用。若在樓梯或平台可能不適合的限制進入的區域，包括在狹小空間內的工作和測試等，必須使用適合攜帶式直梯。

The use of step ladders and leaning ladders should be eliminated or minimized through good planning and correct equipment selection, i.e. the use of stairway or platform as a practical alternative. There will be tasks where stepladders are appropriate including works and testing in small spaces, areas of restricted access where stairway or platform may not fit.

6.7.2 在所有情況下，使用便攜式梯子時，必須滿足以下要求：

In all cases, when using portable step ladders, the following requirement must be fulfilled:

(1) 所有梯子的最大靜載荷必須超 150 kg，並且應由合格人員進行每週檢查。損壞的梯子應立即銷毀或隔離使用。





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All ladders must be rated >150 kg maximum static load and shall be subject to a documented weekly check carried out by a competent person. Damaged ladders shall be destroyed or quarantined from use immediately.

- (2)當需要在電氣設備附近工作時，攜帶式應有電氣絕緣設計。

Ladders shall be electrical insulated when there is a requirement for work in proximity to electrical equipment.

- (3)在任何情況下都不允許使用木梯或損壞捆紮的梯子。

No wooden ladders or damage rigged ladders shall be permitted under any circumstances.

- (4)所有攜帶式梯子應能捆綁固定以防止移動。

All portable ladders shall be tied off and where possible footed to prevent movement.

- (5)梯子只能在乾淨，水平和堅固的地面表面上使用。

Ladders shall only be used on a clean, level and solid surface.

- (6)只有在梯子在完全打開，使得繫桿鎖定的情況下使用。

Stepladders shall only be used in the fully open position with the spreader bars locked.

- (7)用於出入口的梯子應至少延伸至平台頂部 60 公分以上。

Ladders used for access and egress shall extend a minimum of 60 centimeter above the top of a platform or landing.

- (8)所有直梯應垂直使用，比例為 4：1 (與地面角度小於 75 度)。對於每 4 公尺的工作高度，梯子的底部應距離頂部支撐 1 公尺以上。

All extension ladders shall be used within a 4:1 ratio from the vertical (less than 75 degree from ground). For every four meter of working height, the base of ladder should be greater than one meter out from the top support.

- (9)人員爬梯時不允許攜帶工具或設備。

It is not permitted to carry tools or equipment when climbing a ladder.

- (10)一次只能有一個人在梯子上工作。

Only one person shall work from a ladder at one time.

- (11)任何人都不得站在任何伸展梯的頂部兩個梯級或頂部台階上。

No one shall stand on the top two rungs of any extension ladder or on the top step of a step ladder.

## 6.8 堆高機(Lift Trucks)

- 6.8.1指任何人員操作的堆高機，包括可從固定位置或站立位置控制的堆高機，可以是固定式或折疊式。

Lift Trucks includes any truck capable of carrying an operator and includes trucks controlled from both seated and stand-on positions, which may be fixed or fold-away.

- 6.8.2堆高機操作員須由認可發證機構核證其所操作的起重機的類型及容量，證書將在作業現場驗證。

Lift trucks operators shall be certified by a recognized certifying body for the type and capacity of

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the lift truck for which they will be operating. A final verification of the certificate will be done at the project Site.

6.8.3在現場操作之前，承包商應對包括附件在內的所有堆高機設備進行檢查，在使用設備之前，承包商應完成任何缺陷的改善。

All lift trucks equipment including attachments shall be inspected by the Contractor prior to be operated on Site. Any deficiencies shall be corrected by the Contractor prior to using the equipment.

6.8.4所有堆高機應在車輛使用當天進行記錄檢查，至少應包括覆蓋，翻車保護，墜落物體保護，制動器，輪胎，動力單元或燃料，燈光，警告裝置(包括視覺和聽覺)和液壓系統。

All lift trucks shall have a recorded inspection performed on those days the vehicle is being used.

This shall cover restraint, roll over protection, falling object protection, brakes, tires, power pack or fuel, lights, noise, warning devices( including visual and audible), fluid levels and hydraulic system as a minimum.

6.8.5應為每輛堆高機提供基於製造商建議和當地法規要求的預防性維護書面計劃。

A documented preventive maintenance program based on manufacturers' recommendations and local legal requirements shall be available for each fork lift truck.

6.8.6吊索不得直接安裝在貨叉上以便吊裝。

Slings shall not be attached directly to the forks for hoisting purposes

6.8.7使用貨叉進行吊裝時必須使用製造的附件系統，並且必須針對與其一起使用的特定設備進行額定/設計。附件必須標有額定容量和重量。附件必須標有額定容量和重量。應牢固地固定附件，使得附件或固定裝置在升高或降低附件期間不會干擾桅杆結構的任何部分。

A manufactured attachment system must be used when using the forks to hoist, and must be rated / designed for the particular piece of equipment that it is being used with. Attachments must be marked with their rated capacity and weight. Attachments should be securely fastened such that the attachment or securing device does not interfere with any part of the mast structure during raising or lowering of the attachment.

6.8.8由人員操作的堆高機運輸的所有貨物應固定，以防止意外移動。

All loads being transported by rider operated lift truck shall be secured to prevent inadvertent movement.

6.8.9當堆高機倒車時，應有視覺和聽覺警報。

All mobile equipment shall have an visual and audible alarm when the equipment is in reverse.

6.8.10未使用經認可的集成工作平台，不允許任何人員通過堆高機升降。

No personnel shall be permitted to be raised / lowered by a lift truck.

## 6.9 移動式升降工作平台 (Mobile Elevating Work Platforms; MEWP)

6.9.1移動式升降工作平台，包括垂直剪式升降作業機、高空作業車、自走式作業車車輛和拖車式懸臂等。

MEWP is a generic term and includes vertical 'scissor' lifts, aerial work vehicle, self-propelled

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moving vehicle and trailer mounted boom.

#### 6.9.2 承包商應確保在使用移動式升降工作平台MEWP時：

The Contractor shall ensure that where a MEWP is to be used that:

(1) 操作人員應接受公認的國家或國際標準的充分培訓，並能夠提供和作業的移動式升降工作平台的機型的操作培訓的證據。

Operators shall have adequate training to a recognized national or international standard and be able to provide evidence of such training in the operation of the specific type and size of MEWP.

(2) 移動式升降工作平台和任何物料搬運設備必須由合格人員至少每六個月進行一次徹底檢查，或者根據該合格人員制定的檢查計劃以更高的頻率進行徹底檢查。

MEWPs and any material handling devices must be thoroughly examined at least every six months by a competent person, or at an increased frequency in accordance with an examination scheme drawn up by such a competent person.

(3) 在現場操作之前，所有空中升降工作平台應由承包商進行檢查。在使用設備之前，承包商應完成所有缺陷的改善。

All aerial lifts shall be inspected by the contractor prior to being operated on site. All deficiencies shall be corrected by the Contractor prior to using the equipment.

(4) 應為每個空中升降平台定基於製造商建議和當地法規的書面預防性維護計劃。

A documented preventive maintenance program based on manufacturers' recommendations and local legislation shall be developed for each aerial lift.

#### 6.9.3 必須準備好處理任何緊急情況和救援的安排，並向操作員提供簡報並了解安排。應定期進行演習，以確保此類安排有效。

Arrangements for dealing with any emergency and rescue must be prepared with operators being briefed and aware of the arrangements. Regular drills shall be required to ensure such arrangements are effective.

#### 6.9.4 為了阻止人員從工作平台上掉下來，應使用工作約束系統。這應包括連接到繫索的全身背負式安全帶，該繫索連接到移動式升降工作平台工作籃上的錨點。從錨點開始，繫索長度應足夠短，以防止人員到達可能墜落的位置。繫索可能包含一個能量吸收裝置，但仍應僅用作工作約束系統的一部分。

In order to stop a person falling from the work platform, a work restraint system shall be used. This shall comprise a full body harness connected to a lanyard which is connected to an anchor point on the MEWP basket. From the anchor point, the lanyard length should be short enough to prevent a person reaching a position where they could fall. The lanyard may contain an energy-absorbing device, but should still only be used as part of a work restraint system.

#### 6.9.5 如果在水上或靠近水的地方使用移動式升降工作平台，承包商應考慮作為其安全工作系統的一部分，是否應使用包含救生衣的防墜落裝置。

Where a MEWP is being used over or in close proximity to water, the Contractor should consider as part of their safe system of work whether a life jacket together with body harness should be used.





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6.9.6 盡可能將移動式升降工作平台保持在安全的位置或指定的區域內，關閉發動機或電機，工作平台降低到其停放位置並施加制動。如果必須停在斜坡上，車輪應該有車輪擋。

Wherever possible, keep MEWPs in a secure place or in a designated area with the engine or motor switched off, the working platform lowered to its parked position and the brakes applied. If it has to be parked on a gradient, the wheels should be chocked.

6.9.7 移動式升降工作平台的運輸或移動必須考慮周圍的環境和活動。在所有移動式升降工作平台運動期間應使用監視人員。

Transportation or movements of MEWPS must give consideration to surrounding environment and activities. A watchman shall be utilized during all MEWP movements.

6.9.8 使用的工具和設備必須固定於移動式升降工作平台上，以防止成為墜落物體。指定的工作區域應該建立障礙區，防止人們進入。

Tools and equipment being used must be tethered to the user or the MEWPS to protect against becoming a falling object. Barriers should be erected to form a designated working area from which people are prevented from entering.

#### 6.10 機動車輛安全(Motor Vehicle Safety)

6.10.1 所有承包商人員應每週進行一次車輛檢查，留存紀錄。

On a weekly basis all Contractors personnel shall perform a documented vehicle inspection.

6.10.2 在現場駕駛任何車輛或移動設備時，禁止使用行動電話閱讀訊息或與其他通信設備。

Use of mobile phones as communication or information reading devices are forbidden when driving any vehicle or mobile equipment on Site.

6.10.3 現場的每輛車必須配備滅火器，急救箱。配備外部燃油箱的車輛必須配備與火災風險相關的滅火器。

Each vehicle on Site must be equipped with a fire **distinguishes**, first aid kit. Vehicles equipped with an external fuel tank must have a fire **distinguishes** relevant for the fire risk.

6.10.4 所有車輛在現場應以倒車方式停車。

All vehicles shall reverse park at all times while on Site.

6.10.5 在車輛中行駛的人員必須坐在以此目的設計的座椅上，座椅必須配備安全帶。

Personnel travelling in vehicles must be in a seat designed for the purpose and the seat must be equipped with a seat belt.

6.10.6 所有機動車輛應減速到現場的速度限制。

All motor vehicles shall slow to Site speed limits.

#### 6.11 潛水作業(Diving Operations)

6.11.1 如果承包商需要使用潛水員，則適用以下要求：

In case it should be necessary for the Contractor to utilize divers, the following requirements apply:

(1) 根據合理可行的原則 (ALARP) 原則，所有工作必須盡量計劃在不用潛水員的情況下執行。

All works must be planned to be executed without divers according to the As Low as Reasonably

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Practicable (ALARP) principle.

- (2) 某些工程可能需要使用不同的方法/設備進行重新規劃，以避免使用潛水員。

Certain works may have to be re-planned using different methods / equipment in order to avoid the use of divers.

- (3) 如果風險計劃和審查過程表明潛水是絕對必要的，則必須使用經認證符合國家或國際公認標準的潛水公司。

If the risk planning and review process demonstrates that diving is absolutely necessary, a recognized diving company certified to a nationally or internationally recognized standard must be used.

- (4) 潛水承包商應確保有足夠的人員具有適當的能力，具有安全地進行潛水不會危及健康。並預備與潛水項目有關的可合理預見的緊急情況下，可能是必要的行動方案(包括提供急救)。

The diving contractor shall ensure that there are sufficient people with suitable competence to carry out safely and without risk to health, and any action (including the giving of first-aid), which may be necessary in the event of a reasonably foreseeable emergency connected with the diving project.

#### 6.12 消防和預防(Fire Protection and Prevention)

- 6.12.1 應始終保持完全和不受限制地進入緊急出口，消防設備，消防和應急車輛。承包商應提供自己的滅火器，以防止它們引入工作現場的危險。承包商滅火器應由認證人員按照當地要求按頻率進行檢查。每月需要進行目視檢查並由承包商記錄。

Full and unrestricted access to emergency exits, fire-fighting equipment, fire control and emergency vehicles shall be maintained at all times. Contractors shall provide their own fire fire **distinguishes** for protection against hazards they introduce to the work site. Contractor Fire fire **distinguishes** shall be inspected by a certified person on a frequency in accordance with local requirements. A visual inspection is required and documented by the Contractor monthly.

- 6.12.2 未經主管當局或個人授權，承包商不得安裝或改變防火/保護系統。

Contractors shall not install or alter fire prevention/protection systems without authorization from the competent authority or person.

#### 6.13 急救(First Aid)

- 6.13.1 急救包：急救包和用品應由承包商提供，並隨時可供所有員工使用。急救箱應放置在所有機動車輛，現場辦公室和員工可在項目現場履行職責的其他區域。

First Aid Kits - First aid kits and supplies shall be provided by the Contractor and readily available to all employees. First aid kits shall be placed in all motor vehicles, site offices, and other areas where employees may perform their duties at a project Site.

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6.13.2 急救箱應堅固且防風雨，並且包含密封的急救用品包，急救藥品及器材之內容應依據符合勞工健康保護規則之附表六規定。

The first aid kit should be sturdy and weatherproof and contain a sealed first aid kit. The contents of the first aid medicine and equipment should be in accordance with Annex 6 of the Government's Labor Health Protection Rules.

#### 6.14 單人工作和緊急安排(Lone Work & Emergency Arrangements)

6.14.1 一般而言，不允許單獨工作，並且應始終將任務分配給至少包含兩個人的團隊。必須規劃工作任務，以防止或最小化團隊成員的隔離，例如視線或聽覺範圍。

In general, lone working is not permitted and tasks should always be assigned to teams comprising a minimum of two persons. Work tasks must be planned to prevent or minimize the isolation of team members, for example out of sight or hearing range.

6.14.2 為避免疑義，以下任務不能單獨工作：

For the avoidance of doubt, the following tasks cannot be undertaken lone working:

- (1) 電氣作業(Electrical work)
- (2) 高溫作業(Hot work)
- (3) 涉及電動工具的作業(Work involving power tools)
- (4) 吊掛作業(Lifting Operations)
- (5) 重型手動作業(Heavy manual handling)
- (6) 使用化學品作業(Work with chemicals)
- (7) 離岸作業(Working offshore)
- (8) 在高處作業(Working at height)

6.14.3 如果團隊成員在工作期間分開，即使是短暫的，他們必須能夠保持彼此之間的溝通，以確保相互安全，例如行動電話或無線電。緊急程序必須包括與獨立工作人員保持定期聯繫的要求以及任何其他協議，以確保始終安全。

If team members are required to separate during work, even briefly, they must be able to maintain communication with each other to assure of mutual safety e.g. mobile phone or radio. Emergency procedures must include the requirement for maintaining regular contact with independently working personnel and any additional protocols to ensure safety at all times.

6.14.4 但在特殊和非常有限的條件下，基於興達海基接受的適當風險評估，簡單的任務可以作為獨立的工作任務執行。只有合格的人員才能獨立完成工作任務。獨立執行的工作任務應始終要求員工直線經理和書面指定的聯繫人工作許可。

Under special and very restricted conditions, simple tasks can be performed as an independent work task based on provision of a suitable risk assessment accepted by SDMS. Only competent personnel are allowed to carry out work tasks independently. Independently performed work tasks shall always require a permit to work from the employees Line Manager and a contact person appointed in writing.



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#### 6.15 手持式和攜帶式電動工具(Hand and Portable Power Tools)

##### 6.15.1 不得在任何工具上移除或修改防護裝置或安全裝置。

No guards or safety features shall be removed or modified on any tool.

##### 6.15.2 不論傳遞到不同位置或不同人員，工具不可以用拋擲方式傳遞。

Tools should neither be dropped nor thrown from place to place nor from person to person.

##### 6.15.3 工具必須從一個高度升高或降低到另一個高度時，應放在經認可的提升袋中或牢固地連接到手繫繩上。

Tools that must be raised or lowered from one elevation to another shall be placed in an approved lifting bag or firmly attached to a hand-line.

##### 6.15.4 所有需要校準的工具在使用前應進行電流校準並標示校正日期。

All tools requiring calibration shall be in current calibration prior to use and labeled the calibration date.

##### 6.15.5 所有電動工具在不使用時應關閉。

All power tools shall be powered down when not in use.

##### 6.15.6 電動工具電線必須裝設接地故障斷路器（GFCI）或漏電斷路器(RCCB)。

Ground Fault Circuit Interrupters (GFCI) or Residual Current Circuit Breaker (RCCB) shall be used on all power cords.

##### 6.15.7 工具應檢查並保持良好的工作狀態，標記有缺陷的工具應立即從現場移除。

Tools shall be inspected and maintained in good working order and defective tools shall be immediately tagged out and removed from Site.

##### 6.15.8 現場只能使用經批准的工具。

Only approved tools shall be used on-Site.

##### 6.15.9 不得使用自製或工作製作的工具。如果特定任務需要特殊工具，並且不存在可用的現存工具，在製造此類工具之前必須提供適當的工程設計，規格，計算和安全係數。

Homemade or job-made tools shall not be used. In the event a special tool is needed for a specific task, for which no such manufactured tool exists, proper engineering design, specifications, calculations and safety factors must be provided prior to construction of such a tool.

#### 6.16 有害物質的使用(Use of Hazardous Substances)

##### 6.16.1 承包商計劃在現場攜帶的所有化學品清單應與安全資料表（SDS）一起提交，並作為承包商安全工作系統的一部分進行相應的化學品風險評估。

A list of all chemicals the Contractor plans to bring on-Site shall be submitted along with the Safety Data sheets (SDS) and corresponding chemical risk assessment as part of the contractor SSOW.

##### 6.16.2 現場帶來的所有化學品必須經興達海基預先核准。

All chemicals brought on site must be pre-approved by SDMS.

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6.16.3 如果需要將新化學品帶到現場，他們必須獲得興達海基的書面批准。必須向興達海基提供每種產品的SDS和化學品風險評估，並在專案執行期間存儲在現場。

If a new chemical needs to be brought on Site they must obtain written approval by SDMS. SDS and Chemical Risk Assessments must be provided to SDMS for each product and be stored on Site for the duration of the project.

6.16.4 承包商應提供符合興達海基要求的儲存容器和製造商對這些儲存容器的要求。

The Contractor shall provide storage containers that meet the requirements in the SDMS and the manufactures requirements for those storage containers.

6.16.5 化學品必須貼上適當的標籤並隔離儲存，以防止不相容的儲存。

Chemicals must be properly labelled and stored segregated to prevent incompatible storage.

6.16.6 所有化學品和物質必須按照**作業現場**所在國家/地區適用的法律要求進行註冊。

All chemicals substances must be registered in accordance with the legal requirements applicable in the country of the Site.

6.16.7 承包商應確保所有承包商人員了解與所用化學品相關的危險。興達海基可在工作現場提供該國家的相關安全資料表（SDS）或同等材料。承包商或分包商帶入項目現場的每種化學品的安全資料表在專案期間須保留在現場。

Contractors shall ensure that all the Contractor Personnel are made aware of the hazards associated with the chemicals being used. Relevant Safety Data sheets (SDS) or equivalent for that country shall be available to SDMS at the Work site. MSDS for each chemical commodity brought onto the Project Site by the contractor or subcontractors will be kept on site for the duration of the project.

6.16.8 專案完成後，承包商將從現場取走所有未使用的化學物質材料。

Upon completion of the project, all unused chemical materials will be taken off the Site by the Contractor.

6.16.9 在轉移易燃液體之前，應制定風險評估。

Prior to transferring flammable liquids, a risk assessment shall be developed.

6.16.10 當從導電容器（金屬，導電塑料）轉移和/或傾倒易燃液體時，容器應接地並捆綁。

When transferring and/or decanting flammable liquids from containers that conduct electricity (metal, conductive plastics), the containers shall be grounded and bonded.

6.16.11 所有化學品洩漏必須立即報告給興達海基現場管理部門。只有接受過洩漏應急程序培訓的人員才能應變並清理洩漏事故。所有溢出殘留物必須根據當地法律要求適當地儲存和標記。

All chemical spills must be reported to SDMS Site Management immediately. Only personnel trained in spill response procedures may respond to and clean up a spill. All spill residues must be properly contained and labelled according to local legal requirements.

6.16.12 當含有危險液體的設備（如數量大於20升的液壓油或柴油燃料或當地管理機構要求報告之低限值）移動時建立溢出控制和清理計劃，以解決在起重機移動或其他操作期間發生的溢出或來自車輛事故或其他事故的溢出可以即時採取應變行動。該計劃應包括具體的溢出防止控制和現場清理行動，並提及遏製或管理環境洩漏所需的任何設備。該設備可通過非

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現場設備的合約或與在現場維護此類設備的其他現場承包商的正式協議獲得。該計劃可作為環安衛計劃的一部分。

Spill containment and cleanup plans shall be created for mobile equipment containing hazardous liquids such as hydraulic oil or diesel fuel in quantities greater than 20 liters or local regulating agency reporting threshold that address immediate action in response spills occurring during crane movements or during other operations from vehicle accidents or incidents. The plan shall include specific containment / clean-up actions and reference to any earth moving equipment necessary for containing or managing environmental spills. This equipment may be available by contract for offsite equipment or by formal agreement with other site contractors that maintain such equipment on site. This plan can be included as part of the EHS plan.

6.16.13 未經興達海基事先授權，不得將任何可申報物質清單中包含的物質帶入現場。

No substance contained within the list of declarable substances shall be brought onto the Site without prior authorization from SDMS.

6.16.14 承包商應遵守所有適用法律，法規，材料安全資料表和製造商關於存儲和處理所有危險貨物和產品的說明。

The Contractor shall comply with all Applicable Laws, Regulations, MSDS and the manufacturer's instructions for the storage and handling of all dangerous goods and products.

#### 6.17 自然環境和泥土底層的污染(Pollution of Natural Surroundings and Substrata)

6.17.1 不允許污染自然環境和土層，因此必須收集和儲存所有廢物或垃圾，直至可以清除。這是為了確保廢物和垃圾不會被吹走。

Pollution of the natural surroundings and substrata is not permissible, so all waste or refuse must be collected and stored until removal is possible. This is to ensure that waste materials and refuse do not blow away.

6.17.2 在開始使用化學品（例如油）進行任何工作之前，必須確保吸收材料存在於緊鄰的範圍內。

Before beginning any work with chemicals, such as oils, it has to be ensured that absorbent material is present in the immediate reach.

6.17.3 裝有燃料，油或其他化學品的桶和儲罐必須始終存放在防止洩漏的儲區中，該儲區防止洩漏容積至少可容納最大容器容積的110%。

Drums and canisters containing fuel, oil or other chemicals must always be stored in a sealed reservoir that can hold at least as much as the 110% of the volume of the largest container.

#### 6.18 化學品洩漏通報(Procedures for Reporting Chemical Spills)

6.18.1 必須向興達海基現場經理報告所有化學品洩漏。必須停止洩漏源並根據適用的環境法規規定正確儲存和標記所有溢出殘留物。

All chemical spills must be reported to SDMS Site Manager. The source of the spill must be stopped. All spill residues must be properly contained and labelled according to applicable environmental regulations.



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#### 6.19 加油業務(Refueling Operations)

6.19.1 必須避免在海上加油，由於操作原因而必須海上加油必須取得興達海基所發特別許可證。

Refueling offshore must be avoided. Where it must take place for operational reasons, a special permit shall be issued by SDMS.

6.19.2 所有加油車輛必須在進入現場之前向興達海基報告，現場發現的任何加油車輛未先向工地現場辦公室報告，並且取得進入的授權，將從現場移除。

All refueling vehicles must report to SDMS before entering the Site – any refueling vehicle found on-Site without first reporting to the Site office, and receiving authorization to enter, will be removed from the Site.

6.19.3 興達海基工地不允許使用可鎖定的燃油噴嘴。

Lockable fuel nozzles are not permitted on SDMS Sites.

6.19.4 必須使用盛水盤或類似的工具來防止在加油期間的溢出物。

Drip trays or similar tools must be used to prevent spillages outside of containment during refueling.

6.19.5 使用帶蓋的容器處理和轉移油品過程中溢出的風險。

Use containers with lids to minimize the risk of spillage during handling and transfer.

6.19.6 在加油點準備足夠數量的洩漏處理套件。

A sufficient number of spill kits must be at the point of refueling.

6.19.7 所有加油操作都需要在進行加油行動之前建立安全的工作系統。

All refueling operations will require a Safe System of Work to in place prior to refueling activities taking place.

#### 6.20 飲用水和廁所(Drinking Water and Toilets)

##### 6.20.1 飲用水(Drinking Water)

(1) 應在所有工作場所提供充足的飲用水。

An adequate supply of drinking water shall be provided at all work locations.

(2) 用於分配飲用水的便攜式容器應能夠緊密關閉並配備水龍頭。水不得從容器中滴漏。

Portable containers used to dispense drinking water shall be capable of being tightly closed and equipped with a tap. Water shall not be dipped from containers.

(3) 任何用於分配飲用水的容器應清楚標明其內容的性質，不得用於任何其他目的。

Any container used to distribute drinking water shall be clearly marked as to the nature of its contents and not used for any other purpose.

(4) 不允許使用公共使用的飲水杯。

A common drinking cup is not permitted.

(5) 如果提供單次使用的杯子，則應提供未使用杯子的衛生容器和處理用過的杯子的容器。

Where single service cups (used once) are supplied, both a sanitary container for the unused cups and a receptacle for disposing of the used cups shall be provided.

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#### 6.20.2廁所(Toilets)

(1)準備有足供 20 名員工使用的廁所設施。

Toilets shall be provided for employees based upon 20 employees for one portable toilet.

(2)廁所應放置在正在進行工作的現場附近。

Toilets shall be strategically placed near the Site where the work is being performed.

(3)廁所應至少每周清潔一次或根據需要更頻繁地清潔。

Toilets shall be cleaned as a minimum once a week or more frequent as needed.

#### 6.21 工地整理整頓(Housekeeping)

6.21.1臨時供電電纜不得經過任何尖銳邊緣。

No temporary electrical supply cables shall be run over any sharp edge.

6.21.2出口通道應沒有障礙物或阻擋出口通道的物品。

The egress path shall be free of obstructions or items blocking an exit route.

6.21.3應妥善放置作業區域未使用的所有設備和材料。所有工作區域應沒有棄置雜物、突出的釘子和正在進行的工作所不需要的尖銳物體。

All equipment and materials that are not in use at active work areas shall be organized. All work areas shall be clear of debris, projecting nails, and sharp objects not necessary for the work in progress.

6.21.4儲存容器應按順序保存，包括進出容器的通道。

Storage containers shall be kept in order including a clear passageway for getting into and out of the containers.

6.21.5所有可燃材料應在施工過程中每班結束時移除。

All combustible material shall be removed at the end of each shift during the course of construction.

6.21.6應提供容器，用於收集和分離廢物，垃圾，油性和廢舊抹布以及其他廢物。

Containers shall be provided for the collection and separation of waste, trash, oily and used rags, and other wastes.

6.21.7工具和設備應妥善儲存或固定，特別是在移動車輛或拖車中。這對於防止鬆動的工具或物品在車輛突然停止或交通事故時成為飛落物品尤其重要。

Tools and equipment shall be properly stored or secured, especially in mobile vehicles or trailers. This is especially critical to prevent loose supplies and hazardous tools from becoming airborne missiles in the event of a sudden stop or vehicle accident.

#### 6.22 廢物管理和能源使用(Waste Management & Energy Use)

6.22.1所有廢物或垃圾必須在每班結束時收集並存放在批准的容器中。

All waste or refuse must be collected and stored in approved containers at the end of each shift.

6.22.2廢物回收是興達海基的優先事項，承包商必須符合興達海基的回收系統。

Recycling of waste is SDMS priority and the Contractor must fulfill recycling systems provided by SDMS.

6.22.3承包商應書面通知興達海基在工作期間應產生的任何危險廢物。承包商直接負責照當地法律

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要求進行處置並現場維護這些廢物的正確儲存。

The Contractor shall notify SDMS in writing of any hazardous waste that shall be generated during performance of their work. The Contractor has the direct responsibility of maintaining proper storage of these wastes on Site in accordance with local legal requirements.

6.22.4 用於收集危險物和其他受管制廢物的容器，應沒有可能影響其完整性的孔，摺痕，內部污染，嚴重凹痕和生鏽。

Containers used for hazardous and other regulated waste collection shall be free from holes, creases, ballooned ends, internal contamination, severe dents and rust that may affect their integrity.

6.22.5 所有裝有危險物和其他受管制廢物的容器，應在容器的上三分之一處放置所需的標記和標籤，並配置標籤清晰可見以便檢查。一旦廢物放入容器內，容器應貼上標籤並加以標記。

All containers that hold hazardous, universal and controlled waste (non-regulated) shall have the required markings and labels placed on the upper third of the containers and configured that the labels are clearly visible for inspections. The containers shall be labelled and marked as soon as waste is placed inside the container.

6.22.6 必須在收集點隨時提供經認可的危險廢物桶。

Certified drums for hazardous waste must be available at all times at collection points.

6.22.7 廢物容器應保持關閉，除非添加或移除廢物。注意：興達海基同意後，木材和金屬廢物容器可免除此要求。

Waste container shall be kept closed except when waste is being added or removed. Note: waste containers for woods and metals may be exempt from this requirement upon agreement with SDMS.

6.22.8 必須保護金屬，合金和電纜等高價值的廢棄物，防止被盜。

The high valuable waste fractions as metals, alloys and cables have to be kept secured from theft.

6.22.9 如果危險廢物儲存在運輸容器內，該容器必須有足夠的通風，以確保廢物不會對需要進入容器的人造成健康危害。

Where hazardous waste is stored within a shipping container, that container must have adequate ventilation to ensure that the waste does not introduce a health hazard to those needing to access the container.

6.22.10 危險氣噴霧罐廢物容器應標有“僅限氣噴霧罐”字樣。

Hazardous waste aerosol cans accumulation containers shall be marked with the words “Aerosol Cans Only”.

6.22.11 堆積廢油的容器應標明“廢油”。用過的油容器應存放在安全儲區中，該安全儲區的體積容量至少是最大廢油容器容量的110%。

Containers accumulating used oils shall be marked “Used Oil”. Used oil containers shall be stored in secondary containment that is 110 percent of the capacity of the largest container.

6.22.12 如果當地的法律要求或其他要求明確說明在回收之前需要隔離的廢物，則應採取措施將不同種類危險廢物分開儲放。在沒有法律要求的情況下，廢物至少應分為具有金屬價值的廢物，危險廢物（按類型分類，乾混廢物，濕廢物和一般廢物）。

Where there are local legal requirements or other requirements specifically stating waste stream



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that need to be segregated prior to recycling, then measures shall be taken to segregate one hazardous waste from another hazardous or non-hazardous waste. At a minimum where no legal requirements, waste should be segregated as waste with metal value, hazardous waste (segregated by types, dry mixed waste, wet waste, and general waste).

6.22.13 固體和液體不得混入同一廢物容器中。

Solids and liquids shall not be mixed into the same waste container.

6.22.14 危險廢物溢出處理工具套件應位於廢物分類區域周圍。

A hazardous waste spill kit shall be located around the waste segregation area.

6.22.15 容器安全儲區應妥善保養，不得有任何液體。如果檢測到安全儲區有液體洩漏或危險情況，應盡快安全地按照時間表對安全儲區中液體的積累進行目視檢查和處理以遏制風險。

Secondary containment shall be properly maintained and free of liquids. Accumulation of liquids in secondary containment shall be visually inspected and disposed of per the following schedule as soon as safely possible if hazardous conditions are detected or the integrity of the secondary containment is at risk.

6.22.16 在廢物移動之前，承包商應檢查當地的運輸法律要求，並確保必須批准運輸廢物。批准可能因項目地點，廢物類型和當地法規而異。批准記錄應存儲在項目的工作區站點中。

Prior to waste movement, the contractor shall check local legal requirements for transport and ensure that approvals for transport of waste must be in place. Approvals may vary depending on the project site, type of waste and local legislation. The approvals records shall be stored on the workspace site for the project.

6.22.17 在環安衛專業人員的支持下，承包商應不斷審查現場廢物管理，以確保符合本程序、現場廢物管理計劃和當地法規等的要求。

Contractor with the support of EHS professional shall continuously review of waste management practices on-site to ensure compliance with the requirements of this procedure, the Site Waste Management Plan, local legislation, etc.

#### 6.23 灰塵和煙霧(Dust and fumes)

6.23.1 承包商必須採取措施控制灰塵和煙霧的排放，最好通過局部提取灰塵和煙霧。如果不可避免地產生灰塵或煙霧，則必須佩戴適當的個人防護具及將製造煙霧或灰塵的設備放置在不會對人員造成傷害的位置。

The Contractor is required to take steps to control the emission of dust and fumes, preferable by extracting the dust and fumes locally. Where creation of dust or fumes is unavoidable, appropriate PPE must be worn, and/or the equipment making the fumes or dust must be placed at a location where it can do no harm to personnel.

#### 6.24 局限空間作業(Confined space working)

6.24.1 局限空間作業現場應有受訓合格的缺氧作業主管、監視人員與急救人員。

The confined space job site should have qualified operation supervisors, surveillance personnel and emergency rescue personnel.

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#### 6.24.2 施工時進行注意事項：

##### Precautions during working：

- (1) 依法規要求於作業前向勞動檢查機關作業報備。

Reporting to the labor inspection agency before start to work as required by labor inspection agent.

- (2) 局限空間出入口前，張掛局限空間作業警示牌。人員進出必須於現場簽名紀錄。

Before start to work, build confined space operation warning sign near the entrance. All worker's entrance and exit shall be recorded on site.

- (3) 局限空間作業前，應執行氧氣或可燃性氣體濃度測定，確認氧氣濃度在 18%~21% 間、一氧化碳濃度在 35ppm 以下、硫化氫濃度在 10ppm 以下或可燃性氣體濃度 30%LEL(爆炸下限)以下時，才供勞工進入。作業中至少每 1 小時測定氣體濃度乙次，並記錄於紀錄表。

Before the confined space operation, the oxygen or flammable gas concentration should be measured to confirm that the oxygen concentration is between 18% and 21%, the carbon monoxide concentration is below 35 ppm, the hydrogen sulfide concentration is below 10 ppm, or the flammable gas concentration is 30% Lower Explosion Limit (LEL). Measure the gas concentration at least once every hour during the operation and record it on the record Sheet.

- (4) 應架設通風設施並使其正常運轉，並確認測定儀器功能維持正常。

Ventilation facilities should be implemented and operated normally, and confirm the measuring instruments remain functional.

- (5) 作業現場必須有自負式呼吸器、人員吊升設備等人員搶救設備。如發現作業人員有身體不適或缺氧等症狀時，應緊急通報急救人員，立即予以檢視或送醫救治，另通報興達海基現場經理及雇主採取緊急應變措施。

Self-contained breathing apparatus (SCBA) and rescue lifting apparatus shall be ready on site. If the operator is found to have symptoms such as physical discomfort or lack of oxygen, the emergency personnel should be urgently notified, immediately examined or sent to the hospital for medical treatment, and the SDMS site manager and employer should be notified to take emergency measures.

#### 6.25 部件運輸(Transportation of components)

- 6.25.1 承包商必須準備運輸製造部件的計劃和程序，計劃和程序必須包括如何將組件運輸到安裝/施工製造現場，該計劃必須包括道路和區域的計算/佈局/維護。

The Contractor must prepare a plan and procedure for transporting the manufactured components.

The plan and procedure must entail how the components will be transported to the installation/construction Fabrication Site. The plan must include calculation/layout/maintenance of roads and areas.

- 6.25.2 如果組件要通過海運，則雇主對海上緊固有以下額外要求。

If the components are to be transported by sea, the Employer has the following additional

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requirements in regards to sea fastening.

- (1) 必須使用螺栓中帶銷的海上專用扣件。

Offshore shackles with pins/splits in the bolts must be used.

- (2) 重量超過 10 公斤的所有鬆散物品（桶，盒等）必須標明/標記重量。

Weight must be stated/marked on all loose items with weight more than 10kg (barrels, boxes, etc.).

## 6.26 臨海與海上作業(work over/near sea)

### 6.26.1 使用救生衣與救生圈

Safe use of lifejackets and buoyancy aids

- (1) 有可能掉入水中的作業勞工應穿著並佩戴救生衣或浮力輔助設備。每次使用前，應由使用者徹底檢查救生衣。

Lifejackets or buoyancy aids should be provided to and worn by workers with risk of falling into water, and should be thoroughly checked by the user before each use.

- (2) 救生衣/浮力輔助裝置應符合 ISO 12402-1,2,3 或 4，或其他國際標準。

Lifejackets and buoyancy aids should conform to ISO 12402-1, 2, 3 or 4, or other standards according to working conditions.

- (3) 於海岸邊存在可合理預見的墜落的風險應提供具有足夠救命索長度（不少於 30 米）的救生圈，並且救生圈的位置應沿著在進行工作的地方的邊緣間隔小於 50 米設置。為避免任何延誤救援行動，救生圈不應與吊掛桿過於緊密細綁。

A lifebuoy with sufficient lifeline (not less than 30 meters) should be provided and the locations of the lifebuoys should be at less than 50-metre intervals along the edges of places where work is being carried out over side or in an exposed position on vessels where there is a reasonably foreseeable risk of falling or being washed overboard. To avoid any delays to rescue operations, lifebuoys should not be tightly tied to posts.

- (4) 救生衣或浮力輔助設備應設有哨子和自激燈(夜間工作時)，以幫助定位穿著者並便於救援。

The lifejacket and buoyancy aid should preferably be provided with a whistle and a self-activating light (for night work) in order to aid locating the wearer and facilitating rescue.

- (5) 救生衣/浮力輔助設備應由至少每年由授權代理商或合格人員定期檢查。

The lifejackets/buoyancy aids should be inspected and checked periodically by a competent person or authorized agent.

### 6.26.2 救生緊急應變訓練與演練

Falling rescue and emergency arrangements

- (1) 應向作業勞工提供針對臨海與海上特定工作的安全培訓和定期進修培訓與演習，以加強他們對於臨海與船上工作相關的潛在危害的安全意識與救援程序和救援設備使用，包括在惡劣天氣下的工作應變知識。

Near sea working job specific safety training and emergency rescue training should be provided to





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workers to enhance their safety awareness and rescue equipment operation capability of potential hazards associated with work over water, near water, on vessels, including those during inclement weather.

- (2)應向工人提供有關救生衣使用和檢查程序的特殊安全培訓，以及對落水人員的救援安排。  
Specific safety training should be provided to workers on the use and checking procedures of lifejackets, and rescue arrangements for persons who fell into water.

## 7. 人員培訓和配員要求(Training and Manning Requirements)

### 7.1 人員(Personnel)

- 7.1.1 承包商應為每場地指定一名現場安全管理代表。如果承包商在現場有10名或更多人員，無論是員工還是分包商，承包商應提供一名全職環安衛專業人員。此人必須具備合格，適合和經驗，以管理工程的所有環安衛工作，並具有符合當地有關部門標準和要求的適當資格。

The Contractor shall appoint an on-Site safety representative for each Site. If the Contractor has 10 or more personnel on Site at any time, whether employees or subcontractors, the Contractor shall provide one full time HSE Professional. This person must be qualified, suitable and experienced to manage all HSE aspects for the Works and shall have the suitable qualification according standards and requirements of the local authorities.

- 7.1.2 如果承包商打算使用兩台主起重機，承包商須在現場額外提供有一名經過承包商起重管理系統培訓的起重技術專家。

If the Contractor is going to use two main cranes, the Contractor will supply an additional lifting specialist on site who is trained in the Contractor's Lifting Management System.

- 7.1.3 環安衛專業人員必須在工作期間到現場。該環安衛專業人員應全時為承包商提供建議，監督和協調所有環安衛事宜，並確保其分包商也遵守客戶的要求。

The HSE professional must be on Site while the work is being performed. This HSE professional shall advise, supervise and coordinate all HSE matters for the Contractor on a full-time basis and shall ensure adherence to the Customer's requirements also for his subcontractors.

- 7.1.4 如果項目正在進行第二班，在現場有超過10名或更多人員，無論是自己的員工還是分包商，還應由項目承包商指定一名額外的全職環安衛專業人員。

An additional full time HSE professional shall be assigned by the Contractor to the project if the project is working a second shift that has more than 10 or more personnel on-Site whether own employees or subcontractors.

- 7.1.5 全職環安衛專業人員必須具備最新的高空作業和救援培訓。

Full time dedicated HSE specialists must have up to date working at heights and rescue training.

### 7.2 最低配員要求(Minimum Manning Requirements)

- 7.2.1 承包商必須確定以安全的方式操作現場的最低配員要求。

The Contractor has to identify the minimum manning requirements to operate the Site in a safe

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manner.

7.2.2 承包商必須根據當地法律確定操作人員所需的環安衛培訓和證書，並確保在開始工作前滿足要求。

The Contractor has to identify the required HSE training and certificate for operation personnel according to the local laws, and make sure fulfill the requirements before start to work.

## 8 環安衛績效評估和檢查(HSE Assessments and Inspections)

### 8.1 環安衛評估與檢查(HSE evaluation and inspection)：

8.1.1 興達海基保留在合約期限內執行或由第三方執行其認為必要的任何評估和/或檢查的權利，這些評估可以在工作現場或或承包商的場所進行，發現的任何缺陷應由承包商自行承擔風險和改善成本。

SDMS reserves the right to carry out or have carried out by a third party any assessment and/or inspections it considers necessary during the contract duration. These assessments may take place at the work site or the Contractor site. Any deficiencies found in the Contractors management of EHS matters shall be immediately rectified by the Contractor at its own risk and cost.

8.1.2 承包商還應進行與其工作範圍相關的工作場所環安衛檢查，檢查應至少每二週進行一次檢查，並記錄任何缺失，並由承包商以合宜的方式結案。

The contractor shall in addition conduct workplace HSE inspections relevant to its scope of work. The inspections shall be done with a minimum frequency of at least one per two weeks with any deficiency documented and closed out in an expedient manner by the Contractor.

8.1.3 興達海基對承攬商的稽查檢查或是承包商進行與其工作範圍相關的工作場所環安衛檢查，可以使用承攬商環安衛稽查與檢查紀錄表(QP-M21-A19-01)，或是直接登錄於中鋼集團巡視檢查追蹤管理資訊系統，承攬商得使用該公司所自行規定的環安衛檢查紀錄表。

SDMS to contractor audit or inspection result can be recorded on SDMS's contractor audit and inspection record (Form no. QP-M21-A19-01), or key-in to the CSC group site inspection tracing MIS system. SDMS's contractor can use his own inspection record form.

### 8.2 承攬商投標前評鑑項目(Contractor's before tender evaluation).

8.2.1 是否曾經被相關機關表揚或責罰。

Having been praised or punished by the relevant authorities.

(1) 過去三年受政府機關或業主獲頒獎狀表揚實績。

Have been awarded by government authorities or the client in the past three years.

(2) 過去三年有受政府機關或業主開單告發實績。

Have been bad recorded by government agencies or client in the past three years.

(3) 過去三年有發生失能以上事故。

In the past three years, there have occurred disability accidents.

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#### 8.2.2環安衛組織設置與通過相關認證。

HSE organization set up and passed HSE related accreditation.

- (1) 依法設置安全衛生管理人員及安全衛生工作守則報備。

Set up safety and health management personnel and safety and health work regulations in accordance with the law.

- (2) 有特殊作業主管執照。

Person with a special operation supervisor license.

- (3) 通過 OHSAS 18001/ISO 45001/ISO14001 驗證。

Pass the OHSAS 18001/ISO 45001, ISO 14001 accreditation.

- (4) 指定本專案的專職環安衛管理人員。

Designated full time HSE personnel for this project.

#### 8.2.3環境管理程序

Environmental management procedures.

- (1) 有實施環境面考量記錄。

Implementing environmental impact evaluation record.

- (2) 有洩漏與排放管理程序書。

Have leakage and emissions management procedures.

- (3) 有洩漏與排放監測記錄。

Have leak and emissions monitoring record.

#### 8.2.4工安管理程序

Safety management procedures.

- (1) 有實施危害辨識風險評估記錄。

Implement the hazard identification risk assessment record.

- (2) 有訂定高架、焊接、吊掛、噴塗作業之安全程序書

Setting up high working, welding, lifting and painting safety operation procedure.

- (3) 有緊急應變與事故調查程序書

Setting up emergency response and accident investigation procedure.

- (4) 有實施事故通報與調查制度

Implementation of the accident notification and investigation system.

#### 8.2.5 員工安全衛生教育訓練與衛生健康管理實施

Employee HSE training and health management implementation.

- (1) 依法辦理安全衛生教育訓練及記錄者。

Implementing safety and health training and recording according to law.

- (2) 依法取得必要工安環保證照。

Obtain the necessary HSE certificates in accordance with the law.

- (3) 每年實施緊急應變演練。



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Yearly implementation of emergency response drill.

(4) 有化學品分級管理紀錄。

Have chemical classification management records.

(5) 有環測與健康檢查管理紀錄。

Have workplace surveillance test and employee health check management.

8.2.6 興達海基對承攬商的評鑑結果，可以使用承攬商環安衛評鑑表(QP-M21-A19-02)。

SDMS Contractor HSE Evaluation Record ([QP-M21-A19-02](#))，

## 9.相關文件(Relevant Document)

### 9.1 相關程序書(Relevant Procedure)

(1) 興達海基承攬商環安衛管理程序書(編號：QP-M21-A18)

SDMS Contractor Environment, Safety and Hygiene (HSE) Management Procedure (QP-M21-A18)

### 9.2 相關表單 (Relevant Form)

(1) 承攬商環安衛稽查與檢查紀錄表 (表單編號：QP-M21-A19-01)

SDMS's contractor audit and inspection record (Form no. QP-M21-A19-01)

(2) 承攬商環安衛評鑑表(表單編號：QP-M21-A19-02)

SDMS Contractor HSE Evaluation Record (Form no. QP-M21-A19-02)