



เอกสารแนบ 43

คู่มือความปลอดภัย

คู่มือความปลอดภัยในการทำงาน SAFETY HANDBOOK



1

การผ่านเข้า- ออก สำหรับ ผู้รับเหมา/การนำวัสดุผ่านเข้า-ออก โครงการ

1. ผู้ประสานงานของ ผู้รับเหมา ถ่ายรูปเพื่อใช้ทำบัตร Take Photo for your ID card.
2. ติดบัตรตลอดเวลาที่อยู่ในหน่วยงาน Keep your card at all time.
3. แสดงบัตรต่อเจ้าหน้าที่รักษาความปลอดภัยเมื่อผ่านเข้าออกโครงการฯ Present your card at security gate.
4. บัตรหายให้รีบแจ้ง บริษัทฯ ด่วนสังกัดโดยด่วน Lost card inform Subcontractor Company.
5. ห้ามใช้บัตรของผู้อื่นโดยเด็ดขาด Don't use other person card, Use your owner card.
6. ให้ความเร็วรถ ตามที่กำหนด และปฏิบัติตามกฎจราจร คาดเข็มขัดนิรภัย สวมหมวกกันน็อค Follow speed limit and wear safety belt safety helmet.
7. วัสดุ อุปกรณ์ สิ่งของที่จะนำเข้าพื้นที่โครงการฯ ต้องทำใบอนุญาตให้เข้า (Material Entry Pass) พร้อมทั้งภาพถ่ายรายการวัสดุ อุปกรณ์
8. วัสดุ อุปกรณ์ สิ่งของ ที่นำออก ถ้ามีรายการวัสดุ อุปกรณ์ สิ่งของใน 12 ชั่วโมงไม่ต้องทำใบอนุญาตให้นำวัสดุสิ่งของผ่านออกจากโครงการ (Material Exit Gate Pass) ใช้ใบนำเข้าเป็นหลักฐานนำออกได้เลย
9. เมื่อต้องการนำวัสดุ เครื่องมืออุปกรณ์ออกนอกโครงการ ต้องเขียนใบอนุญาตนำวัสดุผ่านออกจากโรงงาน Material (Exit Gate Pass) พร้อมทั้งแนบภาพถ่าย ยานพาหนะ, หมายเลขทะเบียน ยานพาหนะ และใบอนุญาตขับขี่ของคนขับรถ และรายการวัสดุ อุปกรณ์ สิ่งของที่จะนำออกพื้นที่โครงการฯ แบบกับใบอน วัสดุเข้าสู่ให้เจ้าหน้าที่ PCs ปกตรวจสอบของ

3

เอสพีซีซี เจวี (ไซเป็ม ซีทีซีไอ จอยเวนเจอร์) SPCC JV (SIPEM CTCI JOINT VENTURE)

มีการประกาศนโยบายด้านความปลอดภัยและลงชื่อโดยผู้บริหารโครงการ โดย ซึ่งมี เป้าหมายของโครงการดังนี้

เป้าหมายของโครงการ PROJECT SHE GOALS AND OBJECTIVES.

ไม่เกิดอุบัติเหตุถึงขั้นเสียชีวิต
NO FATALITIES

ไม่มีการบาดเจ็บขั้นรุนแรง
NO SERIOUS INJURIES TO PERSONAL

ไม่มีอุบัติเหตุถึงขั้นหยุดงาน
NO LOST TIME ACCIDENT OR INCIDENT

ไม่มีอุปกรณ์หรือทรัพย์สินเสียหาย
NO MATERIAL / PROPERTY DAMAGE

ไม่มีข้อร้องเรียนทางด้านสิ่งแวดล้อม
NO COMPLAINTS TO ISSUE ENVIRONMENT

2

ระเบียบความปลอดภัย Basic rule สิ่งต้องห้ามในที่ทำงาน PROHIBITED AT SPCC



ห้ามพกพา ไฟแช็คไม่ขีดไฟ เข้าในโครงการ หรือ พื้นที่ก่อสร้าง
Not allow bring lighters



ห้ามดื่ม หรือพกพาเครื่องดื่ม มีนเมา ทุกชนิด
No ALCOHOL



ห้ามรับประทานอาหารในเขตก่อสร้าง Not allow eating on site.



ห้ามนำสัตว์เลี้ยงเข้ามาในโครงการ
Pet.



ห้ามใช้โทรศัพท์ ในพื้นที่ก่อสร้าง และเขตควบคุม Do not phone at restricted area.



ห้ามเล่นการพนัน
Do not gambling.



ห้ามนอนหลับพักผ่อนในพื้นที่ทำงาน
Not allow to sleep on working area.

4

อุปกรณ์ป้องกันอันตรายส่วนบุคคล Personal Protective Equipment (PPE)



ความปลอดภัยในหน่วยงาน Safe work at job site

1. ระลึกเสมอว่าความปลอดภัยเป็นหน้าที่ของทุกคน
Safety is everyone's responsibility.
2. ตั้งใจฟังคำแนะนำด้านความปลอดภัยจากหัวหน้างาน หรือ เจ้าหน้าที่ความปลอดภัย
Listen and act on safety advice from your supervisor or safety supervisor.
3. ทำความเข้าใจกับกฎระเบียบและปฏิบัติตามอย่างเคร่งครัด
Understand regulations and follow them.
4. สวมใส่อุปกรณ์ป้องกันอันตรายส่วนบุคคล
Always wear correct PPE.
5. ทำงานอย่างปลอดภัยและกลับบ้านอย่างปลอดภัย
Work safely and return home safely

การสื่อสาร Communication



1. ตั้งใจฟังคำแนะนำด้านความปลอดภัยก่อนเริ่มงาน Listen to pre-start meeting and tool box meeting (JSEA Talk) carefully for safety advice before work.
2. อ่านข่าวสารด้านความปลอดภัยและข้อเสนอแนะของหน่วยงาน Read and understand safety report and safety bulletin.
3. อ่านหนังสือแนะนำ (คู่มือ) Read safety handbook.
4. หากมีข้อสงสัย หรือข้อเสนอแนะ ให้แจ้งหัวหน้าหรือเจ้าหน้าที่ความปลอดภัยทันที
Any question or suggestion, please inform your supervisor or your safety officer.



*** คุณมีสิทธิปฏิเสธงานหากเห็นว่าไม่มีความปลอดภัยเพียงพอ
 You have the authority to stop a task if you believe it is an unsafe act.

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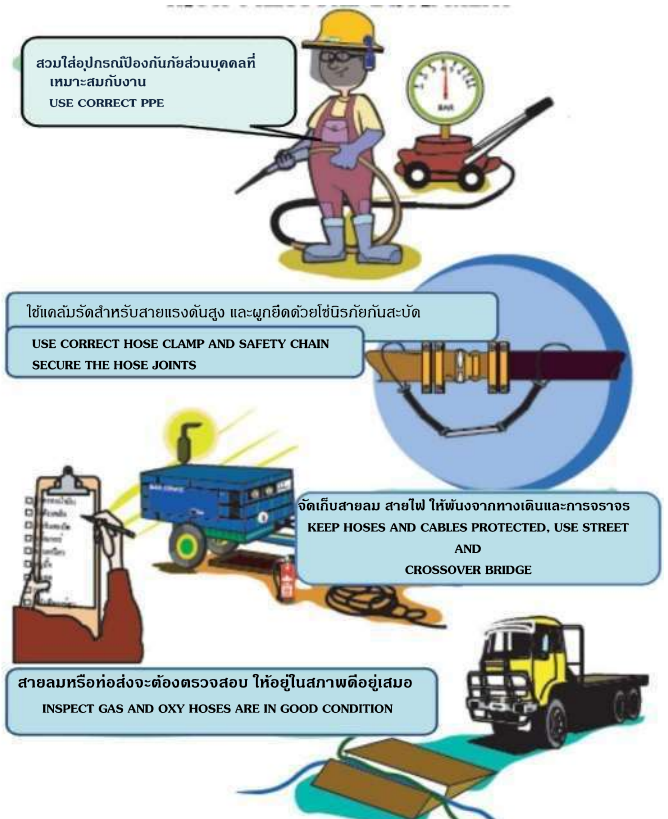
การใช้เครื่องมืออย่างปลอดภัย Hand tools – Power tools



1. เครื่องมือและอุปกรณ์ไฟฟ้าต้องทำการตรวจสอบและติดป้าย
Ensure tool & equipment have safety color tag before use.
2. การใช้เครื่องมือที่ไม่ปลอดภัยทำให้ได้รับบาดเจ็บหรือเสียหาย
DANGER Using unsafe tools & equipment causes injury or damage.
3. ใช้สายไฟที่ชำรุดเป็นเหตุที่ทำให้เสียชีวิตได้
DANGER Using damaged power cable cause fatalities.
4. ตรวจสอบเครื่องมือทั้งหมดก่อนใช้งาน
Inspect all tools before use
5. ใช้เครื่องป้องกันอันตรายจากเครื่องจักร
Use guards to protect worker on all machine.
6. ให้ส่งคืนเครื่องมือที่ชำรุดหรือเสื่อมสภาพ
Take damaged tools to store.



การใช้เครื่องมือแรงดันสูง HIGH PRESURE EQUIPMENT



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การตัดแยกแหล่งพลังงาน-งานซ่อมบำรุง

LOG OUT /TAG OUT & MAINTENANCE

ติดป้ายเตือนบริเวณที่มีงานซ่อมบำรุง
POST WARNING SIGN AT MAINTENANCE AREA



9

วิธีปฏิบัติ ที่ไม่ปลอดภัย

SUBSTANDARD PRACTICE



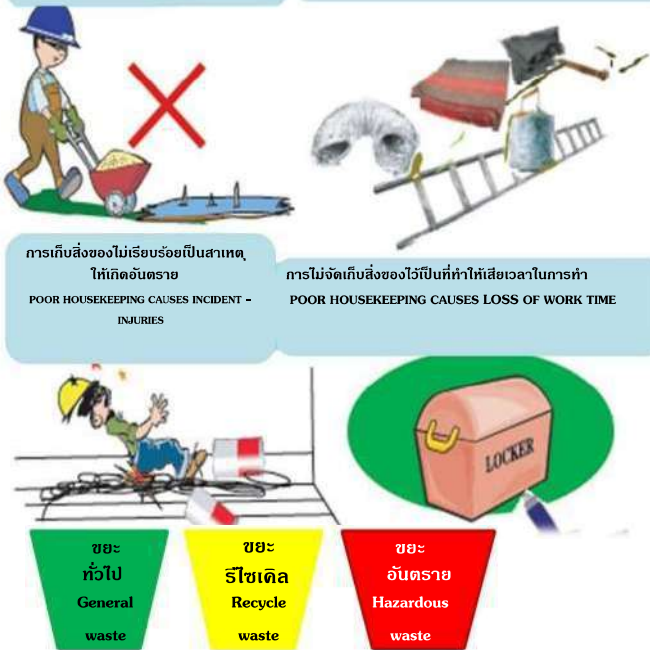
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การทำความสะอาด

Housekeeping

ต้องถอนตะปูออกจากเสียมไม้
REMOVE NAILS FROM WOOD

จัดมูลฝอยวัสดุเหลือใช้ออกจากพื้นที่ทำงาน
COLLECT WASTE AND MOVE OUT



หน่วยงานที่สะอาดเรียบร้อย ช่วยทำให้เกิดความปลอดภัย
Good housekeeping can prevent incident-Injury

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การตรวจสอบความปลอดภัยในการทำงาน

SITE SHE INSPECTION



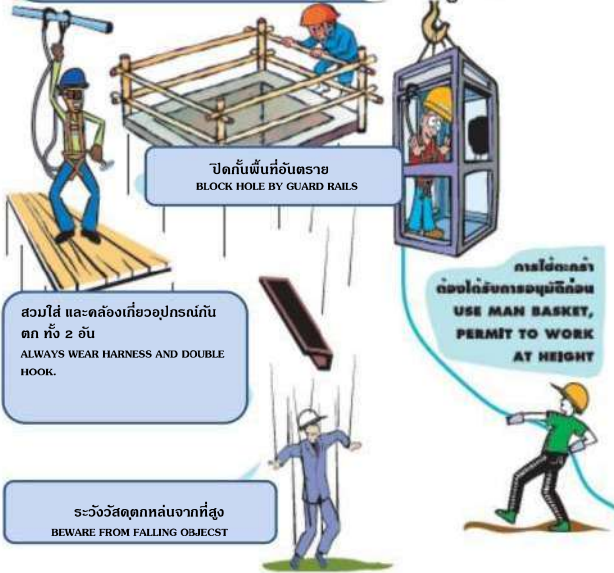
12

การทำงานบนที่สูง WORK AT HEIGHT

ห้ามเคลื่อนย้ายหรือรื้อถอนนั่งร้านและปี ดพื้นที่ยาง อนุญาต มีข้อปฏิบัติดังนี้

1. ดำเนินการโดยทีมงานนั่งร้านเท่านั้น
2. ใช้ใบอนุญาตทำงานเพื่อควบคุม
3. ใส่ราวกันตกบริเวณที่ปี ดโล่ง
4. คล้องเกี่ยวสายช่วยชีวิต ตลอดเวลาที่ทำงานบนที่สูง
5. หัวหน้างานจะต้องดูแลและเอาใจใส่ใกล้ชิดตลอดเวลา

1. WORK TO BE PERFORMED BY SCAFFOLDER
2. USE WORK PERMIT TO CONTROL
3. INSTALL HARD BARRIER FOR FALL PROTECTION
4. WEAR HARNESS AND HOOK
5. FOREMAN , SUPERVISOR LEADER MUST BE CAREFUL AND PAY ATTENTION ALL THE TIME



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การขนย้ายวัสดุ TRANSPORTATION

จะต้องมีผู้ควบคุมการขนย้ายวัสดุของ
CONTROL LOAD & UNLOADING OF MATERIALS BY SUPERVISOR

ปี ดตู้คอนเทนเนอร์ระวัง
BEWARE WHEN UNLOADING CONTAINER



14

งานยกวัสดุ LIFTING & RIGGER

ห้ามอยู่ใต้วัสดุที่กำลังยก
NEVER STAND UNDER HOISTED MATERIALS OR LIFTED LOADS



15

บันจั้น CRANE

ตรวจสอบว่า ทางขาตั้งออกสุดหรือไม่ บันจั้นได้ระดับและตั้งบนพื้น ที่มั่นคงแข็งแรง
CHECK OUTRIGGERS AND LEVELLING ENSURING GROUND STABILITY



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การขนย้ายวัสดุด้วยแรงต

MANUAL HANDING

อย่าก้มโค้งลำตัวยกวัสดุอาจทำให้ได้รับบาดเจ็บที่หลังได้
DO NOT BEND YOUR BODY WHEN LIFTING AS IT GIVE RISE TO BACK INJURY

วางแผนก่อนการยก(น้ำหนัก, เส้นทาง, สิ่งกีดขวาง)
PLAN FOR WEIGHT, ROUTE AND OBSTRUCTIONS



ให้ใช้เท้าจากส่วนขารับน้ำหนัก
USE LEGS FOR SUPPORT WEIGHT

มองเห็นเส้นทางที่ต้องเดินไป
SEE CLEAR WALKWAY AND PLAN



ช่วยกันยกของที่หนัก (มากกว่า 20 กก.)
HEAVY MATERIALS ASK FOR HELP (MAX 20 KG.)

17

สุขภาพ งานสี สารเคมี HEALTH-PAINTING-CHEMICAL

ห้ามรับประทานอาหารด้วยมือที่ไม่สะอาดหรือเปรอะเปื้อน
DO NOT EAT WITH DIRTY HANDS



ปฏิบัติตามข้อมูลความปลอดภัยสารเคมี
WHEN HANDLING CHEMICAL FOLLOW THE SDS REPORT



พื้นที่สีที่มีขีดจำกัดจัดไว้ และควบคุมโดยใบอนุญาตทำงาน
SPRAY PAINTING MUST HAVE WORK PERMIT WHEN SPRAY PAINTING

ล้างมือให้สะอาดก่อนรับประทานอาหารทุกครั้ง
WASH HANDS BEFORE EATING



อย่าปล่อยให้สารเคมีหกและในบริเวณที่ทำงานหรือรอบ ๆ บริเวณที่
DO NOT SPILL PAINT THE WORKING AREA



สถานที่อับอากาศ

CONFINED SPACE

ผู้เฝ้าระวัง / ผู้ช่วยเหลือ
FIRE WATCH MAN / RESCUE

เครื่องดับเพลิง
Fire Extinguisher

สายช่วยชีวิต
Life Line

ป้ายเตือนอันตราย
Warning notice

เครื่องวัดปริมาณก๊าซ
Gas Detector

ระบบระบายอากาศ
Ventilator

ต้องขออนุญาตก่อนเข้าทำงานในที่อับอากาศ
REQUIRE WORK PERMIT BEFORE ENTRY

WORK PERMIT? JSEA?
WATCH MAN?
RESCUE TEAM?
EMERGENCY PLAN?
ใบอนุญาตทำงาน
ในอับอากาศ
วิเคราะห์อันตราย
ผู้เฝ้าระวัง
ผู้ช่วยเหลือ
แผนฉุกเฉิน

ตรวจปริมาณ
อากาศและแก๊ส
พิษ ก่อน
ปฏิบัติงาน
DETECT OXYGEN
AND OTHER
TOXIC BEFORE
WORKING

ปิดใบอนุญาตไว้ ณ สถานที่ทำงาน
WORK PERMIT SHEET AT WORKING AREA

ปฏิบัติตามข้อกำหนด และกฎการทำงานในที่อับอากาศอย่างเคร่งครัด
FOLLOW CONFINED SPACE PROCEDURE AND OTHER REQUIREMENT

การป้องกันเสียงดัง HEARING PROTECTION

การมีชีวิตอยู่โดยสูญเสียการได้ยินเสียงเป็น
เรื่องที่เลวร้ายมาก
It is terrible life of loose your hearing



สวมใส่เครื่องป้องกัน
Use hearing protection

ใส่ปลั๊กอุดหู หรือครอบหูลดเสียง
USE EAR PLUGS OR EAR MUFF

ป้องกันอันตรายของหู จากเสียงดัง
PROTECT HEARING FROM NOISE

ตรวจสอบสมรรถนะการได้ยินอย่างน้อยปี ละ 1 ครั้ง
ANNUAL HEARING TEST



สารกัมมันตรังสี RADIOACTIVE MATERIALS



สารกัมมันตรังสีเป็นอันตรายต่อเม็ดเลือด, ระบบสืบพันธุ์, การกลืนหรือการปนเปื้อนสู่เด็ก, พารกในครรภ์เป็นสารก่อมะเร็ง
RADIOACTIVE MATERIALS CAN DAMAGE YOUR BLOOD, REPRODUCTIVE SYSTEM, GENES, INTERNAL ORGANS AND CAN CAUSE CANCER

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วัตถุไวไฟ FLAMMABLE MATERIALS

ห้ามสูบบุหรี่หรือก่อประกายไฟบริเวณที่มีวัตถุไวไฟ
NO SMOKING OR NAKED FLAMES NEAR FLAMMABLE MATERIALS

ตรวจสอบ

1. ตรวจสอบความดัน
 2. ใส่ตัวป้องกันเปลวไฟย้อนกลับ
 3. สายลม สายแก๊ส ต้องอยู่ในสภาพดี
- CHECK OXY CUTTING EQUIPMENT
1. PRESSURE GAUGE
 2. INSTALL FLASH BACK ARRESTER
 3. OXYGEN AND GAS HOSES MUST BE IN GOOD CONDITION & LEAK PROOF



เตรียมถังดับเพลิงสำหรับงานความร้อนและป้องกันลูกไฟ ด้วยหน้ากากกันไฟ
PROVIDE FIRE EXTINGUISHER AND PROTECT EQUIPMENT WITH



แยกวัตถุไวไฟ ออกจากงานที่มีความร้อน
SEPARATE FLAMMABLE MATERIALS FROM HOT WORK



เตรียมอุปกรณ์ดับเพลิงเพียงพอ ใบพื้นที่เก็บสารไวไฟ และติดตั้งป้ายเตือนเพื่อความปลอดภัย

FLAMMABLE STOCK REQUIRED PROTECTION WITH FIRE EXTINGUISHERS AND POSTED WARNING SIGNS.



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สัญญาณความปลอดภัย

สีเพื่อความปลอดภัย	ความหมาย	สีตัด	ตัวอย่างการใช้งาน
สีแดง	หยุด	สีขาว	เครื่องหมายหยุด เครื่องหมายอุปกรณ์หยุดฉุกเฉิน เครื่องหมายห้าม
สีฟ้า	บังคับให้ต้องปฏิบัติตาม	สีขาว	บังคับให้ต้องสวมใส่เครื่องมือป้องกันส่วนบุคคล เครื่องหมายบังคับ
สีเขียว	แสดงสถานะปลอดภัย	สีขาว	ทางหนี ทางออกฉุกเฉิน ป้ายชำระล้างฉุกเฉิน
สีเหลือง	ระวังอันตราย	สีดำ	ขีปนาวุธอันตราย เช่น ไฟ, วัตถุระเบิด, ภัยอันตรายทางรังสี, วัตถุพิษ และอื่นๆ ขีปนาวุธอันตราย, ทางผ่านที่มีอันตราย, เครื่องกล, ขาว, เครื่องหมายเตือน

ปฏิบัติตามป้าย บ่งชี้ด้านความปลอดภัยอย่างเคร่งครัด

ป้ายเตือนให้ระมัดระวัง



ป้ายให้ปฏิบัติตาม



ป้ายห้ามและป้ายแสดงอุปกรณ์ฉุกเฉิน

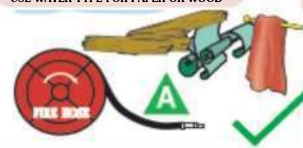


ป้ายความปลอดภัย



การใช้อุปกรณ์ดับเพลิง FIRE FIGHTING

เครื่องดับเพลิงแบบน้ำสำหรับเพลิงไหม้กระดาษหรือไม้
USE WATER TYPE FOR PAPER OR WOOD



เครื่องดับเพลิงชนิดโฟม สำหรับเพลิงที่เกิดจากของเหลวติดไฟหรือน้ำมัน
USE FOAM TYPE FOR FLAMMABLE LIQUID



เครื่องดับเพลิงประเภทคาร์บอนไดออกไซด์ หรือ ไนโตรเจน สำหรับเพลิงจากอุปกรณ์ไฟฟ้า
USE CO2 OR N2 TYPE FOR ELECTRICAL EQUIPMENT



เครื่องดับเพลิงเคมีแห้ง ดับเพลิงได้ทั้งจากกระดาษ ไม้ และอุปกรณ์ไฟฟ้า
USE DRY CHEMICAL TYPE FOR WOOD PAPER, OIL AND ELECTRIC



ห้ามใช้ถังดับเพลิงประเภทคาร์บอนไดออกไซด์ในพื้นที่อับอากาศ
DO NOT USE CO2 TYPE AT CONFINED SPACE AREA

ห้ามใช้เครื่องดับเพลิงประเภทน้ำหรือโฟมดับเพลิงจากอุปกรณ์ไฟฟ้า
DO NOT USE WATER AND FOAM TYPE FOR ELECTRICAL



24

การรายงานอุบัติเหตุ-การบาดเจ็บ

INCIDENT - INJURY REPORT

รายงานกรณีทรัพย์สินเสียหาย

REPORT ANY PROPERTY DAMAGED CASES



รายงานอุบัติเหตุโดยตรงต่อผู้บังคับบัญชา ทางโทรศัพท์หรือวิทยุสื่อสาร
REPORT DIRECT TO YOUR SUPERVISOR BY PHONE OR RADIO



เมื่อเพลิงไหม้ กดสัญญาณเตือนภัย และทำการดับไฟโดยเร็ว หากทำได้
IN CASE OF FIRE PUSH FIRE ALARM OR USE FIRE EXTINGUISHER

IN CASE OF FIRE PUSH FIRE ALARM OR USE FIRE EXTINGUISHER



หากได้รับบาดเจ็บเล็กน้อยให้แจ้งหัวหน้าก่อน
IF YOU ARE INJURED, INFORM YOUR SUPERVISOR FIRST

จากนั้นให้ส่งตัวไปที่ห้องพยาบาล
FIRE AID CASE WILL INFORM SUPERVISOR AND GO TO FIRST AID ROOM



ห้ามเคลื่อนย้ายผู้ป่วยที่ได้รับการช่วยเหลือจากพื้นที่ การช่วยเหลือปฐมพยาบาลการทำให้โดย พยาบาล หรือ ผู้ที่ผ่านการฝึกอบรมเท่านั้น
DO NOT MOVE PATIENT OTHER THAN EXTREME CASE-WITHOUT DOCTOR, NURSE OR RESCUE TEAM PRESENT

FOR SERIOUS INJURIES DO NOT MOVE PATIENT OTHER THAN EXTREME CASE-WITHOUT DOCTOR, NURSE OR RESCUE TEAM PRESENT



25

การสื่อสารหากเกิดเหตุฉุกเฉิน

Emergency Response

Emergency Communication

การสื่อสารกรณีฉุกเฉิน

Emergency Coordinator

086-3243174

Emergency Radio Channel 9

วิทยุฉุกเฉินช่อง 9

Call Safety in working area

แจ้งเจ้าหน้าที่ความปลอดภัยในพื้นที่ทำงาน

27

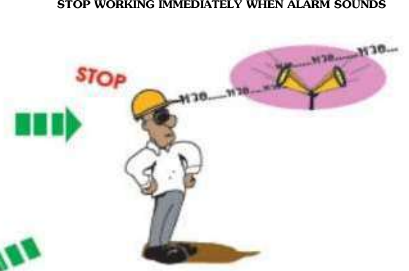
การอพยพหนีไฟ

EVACUATION

เมื่อเกิดเหตุกดสัญญาณเตือนภัย
Push alarm button



หยุดงานทันทีที่ได้ยินสัญญาณเตือนภัย
STOP WORKING IMMEDIATELY WHEN ALARM SOUNDS



ปิดเครื่องจักรทั้งหมด SHUTDOWN ALL MACHINES AND ELECTRICAL TOOL



อย่าตกใจ ให้ออกไปรวมตัวกันที่จุดรวมพล
GO TO MUSTER POINT

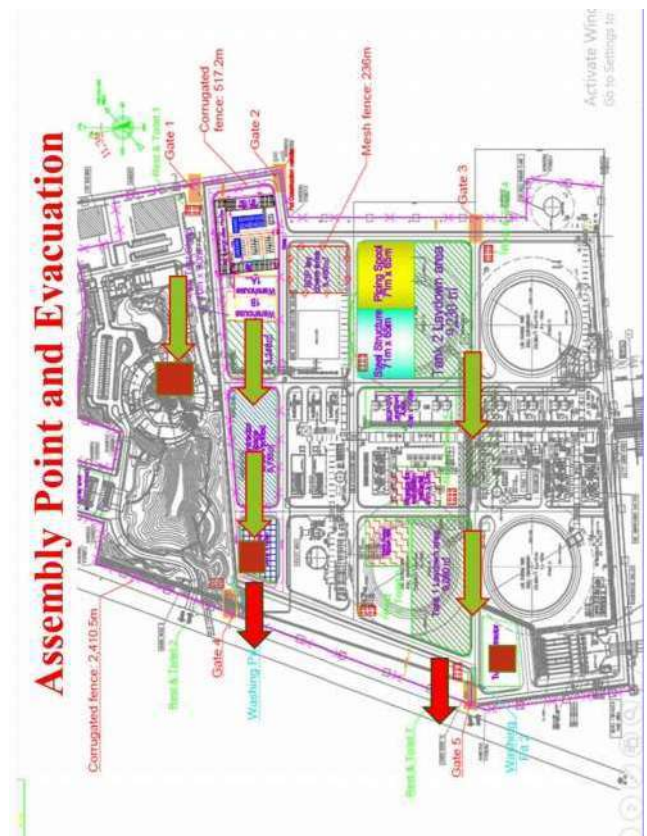


ห้ามวิ่ง
DO NOT RUN

คอยฟังคำสั่ง
WAIT FOR NEXT INSTRUCTION

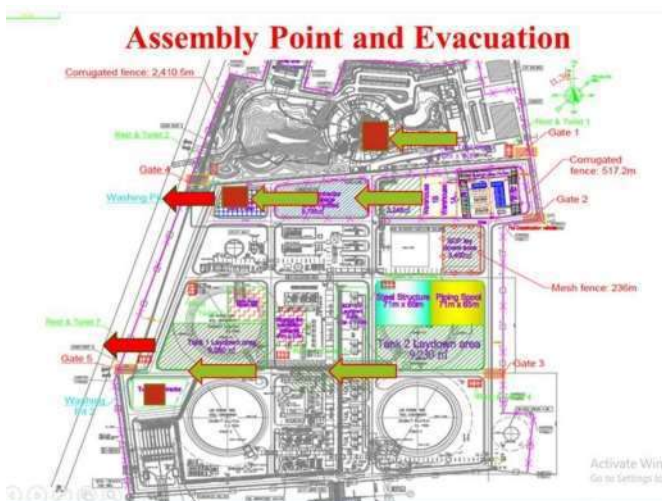
26

การสื่อสารหากเกิดเหตุฉุกเฉิน



28

เส้นทางไปจุดรวมพล



เบอร์โทร จังหวัด,

Public Network in Emergency

- **General Information (ข้อมูลทั่วไป) :**
 SHE Department (ฝ่ายความปลอดภัย)
 Emergency Control Center (PTTLNG)
 Fire Station : (PTTLNG)
 First Aid center (PTTLNG)
- **Police Station (สถานีตำรวจ) :**
 Emergency Call (ฉุกเฉิน)
 Map Ta Phut (มาบตาพุด)
 Huay Pong (ห้วยโป่ง)
 Ban Chang (บ้านฉาง)
- **Fire Station (สถานีดับเพลิง) :**
 Emergency Call (ฉุกเฉิน)
 Map Ta Phut Municipality (เทศบาลมาบตาพุด)
 Ban Chang Municipality (เทศบาลบ้านฉาง)
 Rayong Municipality (เทศบาลระยอง)
- **Hospital (โรงพยาบาล) :**
 Map Ta Phut (มาบตาพุด)
 Ban Chang (บ้านฉาง)
 Mongkut-Rayong (มงกุฎระยอง)
 Rayong (ระยอง)
 Somdej Phanangchaosirikit (สิริกิติ์)
 Bangkok-Rayong (กรุงเทพ-ระยอง)
- **Medical Emergency Call :**
 (กู้ภัยฉุกเฉิน)
- **IEAT (Industrial Estate Authority of Thailand) :**
 (การนิคมอุตสาหกรรมแห่งประเทศไทย)
 Map Ta Phut Industrial Estate
 นิคมอุตสาหกรรมมาบตาพุด
 Global Utilities Services Company Limited
 บริษัท โกลบอล ยูทิลิตี้ เซอร์วิส จำกัด (GUSCO)

หลังจากเลิกงาน

AFTER WORK

ต้องพักผ่อนให้เพียงพอ

REST ENOUGH



รับประทานอาหารที่มีประโยชน์ต่อร่างกาย
EAT GOOD FOOD

EAT GOOD FOOD



เตรียมพร้อมเสนอในการทำงาน
READY TO WORK

READY TO WORK



ระลึกถึงความปลอดภัยทั้งที่บ้านและบนถนน
THINK SAFE AT ALL TIME

THINK SAFE AT ALL TIME



เราทุกคนต้องกลับถึงบ้านด้วยความปลอดภัย
RETURN HOME SAFELY

RETURN HOME SAFELY



SAFETY HANDBOOK

NOTE

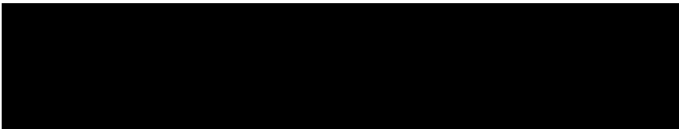



เอกสารแนบ 44

สรุปปริมาณถังน้ำสำรองภายในพื้นที่โครงการ

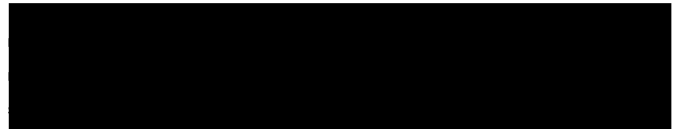
In-plant Generator for Nong Fab LNG Receiving Terminal Project			
			
Summary Water Storage Tank on site/สรุปปริมาณถังน้ำสำรองภายในพื้นที่โครงการ Month: July 2022 / ประจำเดือน: กรกฎาคม 2565			
2022	Total		
	Manpower	Existing	Regulation Require (Liter)
			(70 Liters per person for 3 days)
July	390	150,000	81,900
Total	390	150,000	81,900


*ข้อมูลเมื่อวันที่ 27 กรกฎาคม 2565



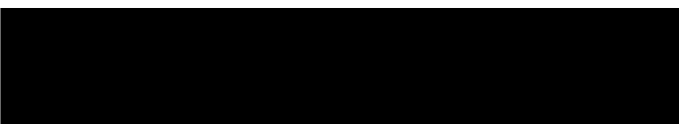
In-plant Generator for Nong Fab LNG Receiving Terminal Project			
			
Summary Water Storage Tank on site/สรุปปริมาณถังน้ำสำรองภายในพื้นที่โครงการ Month: August 2022 / ประจำเดือน: สิงหาคม 2565			
2022	Total		
	Manpower	Existing	Regulation Require (Liter)
			(70 Liters per person for 3 days)
August	164	150,000	34,440
Total	164	150,000	34,440


*ข้อมูลเมื่อวันที่ 29 สิงหาคม 2565



In-plant Generator for Nong Fab LNG Receiving Terminal Project			
			
Summary Water Storage Tank on site/สรุปปริมาณถังน้ำสำรองภายในพื้นที่โครงการ Month: September 2022 / ประจำเดือน: กันยายน 2565			
2022	Total		
	Manpower	Existing	Regulation Require (Liter)
			(70 Liters per person for 3 days)
September	125	50,000	26,250
Total	125	50,000	26,250


*ข้อมูลเมื่อวันที่ 29 กันยายน 2565



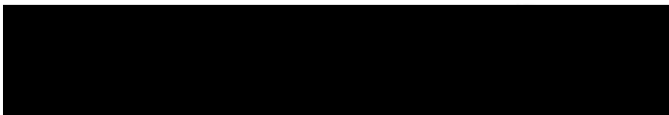
In-plant Generator for Nong Fab LNG Receiving Terminal Project			
			
Summary Water Storage Tank on site/สรุปปริมาณถังน้ำสำรองภายในพื้นที่โครงการ Month: October 2022 / ประจำเดือน: ตุลาคม 2565			
2022	Total		
	Manpower	Existing	Regulation Require (Liter)
			(70 Liters per person for 3 days)
October	127	50,000	26,670
Total	127	50,000	26,670


*ข้อมูลเมื่อวันที่ 29 ตุลาคม 2565



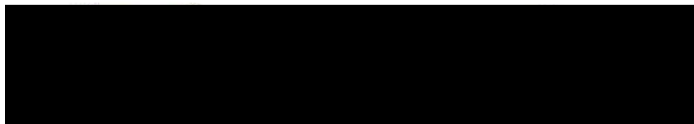
In-plant Generator for Nong Fab LNG Receiving Terminal Project			
			
Summary Water Storage Tank on site/สรุปปริมาณถังน้ำสำรองภายในพื้นที่โครงการ Month: November 2022 / ประจำเดือน: พฤศจิกายน 2565			
2022	Total		
	Manpower	Existing	Regulation Require (Liter)
			(70 Liters per person for 3 days)
November	95	50,000	19,950
Total	95	50,000	19,950

*ข้อมูลเมื่อวันที่ 21 พฤศจิกายน 2565



In-plant Generator for Nong Fab LNG Receiving Terminal Project			
			
Summary Water Storage Tank on site/สรุปปริมาณถังน้ำสำรองภายในพื้นที่โครงการ Month: December 2022 / ประจำเดือน: ธันวาคม 2565			
2022	Total		
	Manpower	Existing	Regulation Require (Liter)
			(70 Liters per person for 3 days)
December	68	50,000	14,280
Total	68	50,000	14,280




*ข้อมูลเมื่อวันที่ 20 ธันวาคม 2565








เอกสารแนบ 45

SHE Plan & SHE Procedure

  		SHE PLAN FOR CONSTRUCTION		PTTLNG Doc. No.: 122018-SPCC-C-SH-PR-0031	
				SPCC Doc. No.: XA74-0000-031	
				Revision : F1 Status : IFF	
Contractor Project : PTTLNG Nong Fab LNG Receiving Terminal Project				Rev. Date : 07/12/2018	
Contractor Discipline : SH		Contractor Phase : EPCC Phase		Page 1 of 62	


PTTLNG Nong Fab LNG Receiving Terminal Project		
		

SHE PLAN FOR CONSTRUCTION

Doc Class Z

REV.	STATUS	DATE	REVISION DESCRIPTION	BY	CHK.	APPR.
F1	IFF	07/12/2018	Issued For Final			
R1	IFR	29/09/2018	Issued For Review			




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   SHE PLAN FOR CONSTRUCTION		PTTLNG Doc. No.: 122018-SPCC-C-SH-PR-0031	
		SPCC Doc. No.: XA74-0000-031	
		Revision: F1	Status: IFF
Contractor Project : PTTLNG Nong Fab LNG Receiving Terminal Project		Rev. Date : 07/12/2018	
Contractor Discipline : SH	Contractor Phase : EPCC Phase	Page 3 of 62	

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5.	DOCUMENT UPDATING AND DISTRIBUTION	15
6.	SHE POLICIES	15
7.	SHE MANAGEMENT SYSTEM	19
8.	SHE ACTIVITIES	27

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  		SHE PLAN FOR CONSTRUCTION		PTTLNG Doc. No.: 122018-SPCC-C-SH-PR-0031	
				SPCC Doc. No.: XA74-0000-031	
				Revision: F1	Status: IFF
Contractor Project : PTTLNG Nong Fab LNG Receiving Terminal Project				Rev. Date : 07/12/2018	
Contractor Discipline : SH		Contractor Phase : EPCC Phase 2		Page 2 of 62	

Revision list:

Rev. Nr	Modifications:
R1	First Issue
F1	Issue for Final implementing Client's comments received and improved sec: 10 and 11

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   PTT LNG TGES CTCI General SPCC Joint Venture		SHE PLAN FOR CONSTRUCTION		PTTLNG Doc. No.: 122018-SPCC-C-SH-PR-0031			
				SPCC Doc. No.: XA74-0000-031			
				Revision: F1		Status: IFF	
Contractor Project : PTTLNG Nong Fab LNG Receiving Terminal Project				Rev. Date : 07/12/2018			
Contractor Discipline : SH		Contractor Phase : EPCC Phase		Page 4 of 62			

1. SCOPE

This Plan is the main document for the application of the Safety Health and Environmental Management System (SHE MS) during the Construction phase of the PROJECT, for the scope of the present document the Environmental issue relevant to the planning activities have been reported into the details within the Environmental Management Plan doc n 122018-SPCC-C-SH-PR-0032.

Purpose of the present document is define the programs that shall be developed to enable the CONTRACTOR management to effectively sustain its commitment to Safety and Health throughout the construction phase.

Ensure the Health and Safety of the people and protection of the Environment throughout each phase of the Project will be a management responsibility and a prime consideration in all operations and activities undertaken under CONTRACTOR responsibility.

Scope of this document is:


- Identify and comply with all applicable SHE Local Laws, **EIA Requirement**, Project Standards and Contractual requirements, to ensure that the Project complies with them;
- Ensure the application of the CONTRACTOR Health and Safety Management System
- Define the SHE organization of the Project
- Define the SHE objectives of the Project;
- Define the SHE deliverables foreseen for the Project
- Define the SHE activities will be carried out during the Project execution, in order to reach the SHE objectives and meet the identified requirements.
- Define SHE data to be monitored and reported (number of injuries, number of SHE meetings, number of spills etc.) in order to immediately correct any deficiency of the System so ensure the continuous improvement of the SHE performance.

This SHE Plan is intended to be complimentary to the general code of practice and to the existing statutory regulations of Local Authorities, including Labour Code, Legislation with regard to medical, **first aid, safety and training requirements**.

All CONTRACTORS / SUBCONTRACTORS shall adhere to this SPCC SHE Plan and appoint their **SHE Manager(s) and SHE Officers or so acting that** must be approved prior to commencement of the work they are contacted to perform for SPCC.

The SPCC Site Manager will ensure that this document is regularly reviewed at site. All parties will be informed of subsequent revisions.

This document is the property of SPCC who will safeguard its rights according to the civil and penal provisions of the Law.

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				SPCC Doc. No.: XA74-0000-031
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2. DEFINITIONS AND ABBREVIATION

General Project description are reported in "Project Description, Abbreviations and Definitions" (Doc. no.122018-SPCC-C-PM-GE-0002).

2.1. Definition and abbreviation specific for this document









LIHS	Leadership in Health & Safety
HRA	Health Risk Assessment
LSR	Life Saving Rules

3. CONTRACTOR LIFE SAVING RULES (LSR)

	Permit to Work
	Seat Belt
	Smoking
	Alcohol and Drugs
	Confined Space
	Cell Phone Use and Speed Limits
	Dropped Objects
	Excavation
	Personal Flotation Devices
	Gas Test

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				SPCC Doc. No.: XA74-0000-031
		Revision : F1	Status : IFF	
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	Journey Management
	Lift Plan
	Overhead Electric Power Lines
	Moving and Energised Equipment
	Suspended Loads
	System Override
	Verify isolation
	Working at Height

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4. REFERENCE DOCUMENTS

4.1. PTTLNG Documentation

PTTLNG'S References	Doc. N°
1602088-32016-CV-TS-003-F0	Specification for Drainage System
1602088-32016-GE-005-F0	PROJECT Reference Codes and Standards
1602088-32016-MG-TS-004-F0	Specification for Acoustical Insulation
1602088-32016-PM-GE-001-F4	PROJECT Procedures and Administrative Requirements (General PROJECT Requirement) Section 9. SHE
1602088-32016-PM-GE-008-F0	List of Documents to be Submitted During Detail Design for Each Discipline. Appendix F. Section 1.5 SHE
1602088-32016-PM-GE-015-F0	Site Safety and Security Procedure (Template)
1602088-32016-PM-GE-019-F0	Change Procedure
1602088-32016-PM-GE-028-F0	Environmental Impact Assessment (EIA). Appendix E-1 REPLACED by the Approved EIA
1602088-32016-PM-RPT-103-F0	PTT Environmental Management Plan
1602088-32016-PM-RPT-104-F0	PTT Personnel Protection
1602088-32016-PM-RPT-105-F0	PTT Environmental Specification
1602088-32016-PM-RPT-106-F1	PTT SHE Legislation
1602088-32016-PM-RPT-109-F1	PTT Corporate Worksite Health, Safety & Security Requirements
1602088-32016-PM-RPT-110-F0	PTT Corporate SH&E Pre-Qualification Expectations
1602088-32016-PM-RPT-111-F0	PTT Corporate Work Site Environmental Requirements
1602088-32016-PM-RPT-113-F0	PTT Safety and Health Management Plan
1602088-32016-CS-RPT-024-F0	Guideline for SIL Study
1602088-32016-CS-RPT-025-F0	Safety Requirement Specification (SRS)
1602088-32016-PM-RPT-009-F2	QRA Report

4.2. CONTRACTOR Project Documentation

Main documents of CONTRACTOR applicable to the Construction activities:

PROJECT SHE Plan	122018-SPCC-C-SH-PR-0001
SHE Procedures (detail sect 3.2.1)	122018-SPCC-C-SH-PR-0002
SHE Training procedure	122018-SPCC-C-SH-PR-0003
Environmental Management Procedure	122018-SPCC-C-SH-PR-0004
Health Management Procedures and Planning	122018-SPCC-C-SH-PR-0005
PPE Management procedure	122018-SPCC-C-SH-PR-0006
Confined Space Procedure	122018-SPCC-C-SH-PR-0007
Crane, Rigging and lifting, Scaffolding, Excavation work safe Procedure	122018-SPCC-C-SH-PR-0008
Hazardous Chemicals and Substance Procedure	122018-SPCC-C-SH-PR-0009
Emergency Preparedness and Response Procedure	122018-SPCC-C-SH-PR-0010
Hand Tools and Machinery Safety Procedure	122018-SPCC-C-SH-PR-0011
Work Permit Program	122018-SPCC-C-SH-PR-0012

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		SHE PLAN FOR CONSTRUCTION		PTTLNG Doc. No.: 122018-SPCC-C-SH-PR-0031
				SPCC Doc. No.: XA74-0000-031
		Revision : F1	Status : IFF	
Contractor Project : PTTLNG Nong Fab LNG Receiving Terminal Project		Rev. Date : 07/12/2018		
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<ul style="list-style-type: none"> SHE AUDIT procedure Incident Notification and Investigation procedure Simultaneous Operation Procedure SHE Action Tracking System Report Emergency Preparedness and Response Plan for construction 	122018-SPCC-C-SH-PR-0013 122018-SPCC-C-SH-PR-0014 122018-SPCC-C-SH-PR-0015 122018-SPCC-C-SH-RPT-0016 122018-SPCC-C-SH-PR-0017
<ul style="list-style-type: none"> SHE RISK Assessment and JSEA procedure Safety Health Environment Policy SHE Requirements for SUBCONTRACTOR and Vendors 	122018-SPCC-C-SH-PR-0018 122018-SPCC-C-SH-PR-0019 122018-SPCC-C-SH-PR-0020
<ul style="list-style-type: none"> Alcohol & Drug Policy Waste Management Plan Environmental Monitoring Plan Spill Contingency Plan Security Plan SHE Construction Manual Environmental Management Plan SHE Monthly Report 	122018-SPCC-C-SH-PR-0022 122018-SPCC-C-SH-PR-0023 122018-SPCC-C-SH-PR-0024 122018-SPCC-C-SH-PR-0025 122018-SPCC-C-SH-PR-0029 122018-SPCC-C-SH-PR-0030 122018-SPCC-C-SH-PR-0032 122018-SPCC-C-SH-PR-0037

4.2.1. SHE Procedures detail content of doc n. 122018-SPCC-C-SH-PR-0002

Detail content of the SHE Procedures doc n. 122018-SPCC-C-SH-PR-0002

Competent Designation Form
Disciplinary actions
Heat stress Preventions
Incentive Scheme Program
Safety Inspection
Management Safety Walk
Night Work Control
Office Safety
Noise
Preventive Maintenance Program
Safety Observation Program
Safety Signs
Color Coding
Lock Out – Tag Out
Control and Use of Plant Equipment
Fall Prevention and protection Program
Housekeeping
Manual handling
Portable tools
Access control requirement in hazardous classified areas
Safe transportation
Site SHE Committee Meeting

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		PTTLNG Doc. No.: 122018-SPCC-C-SH-PR-0031
SHE PLAN FOR CONSTRUCTION		SPCC Doc. No.: XA74-0000-031
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4.3. National Laws and Regulations

Please refer to PROJECT SHE Plan doc n, **122018-SPCC-C-SH-PR-0001**

4.4. OTHER CONTRACTOR's SHE Documentation

- "Leadership in Health and Safety" (LIHS)
- CONTRACTOR Life Saving Rules (LSR)

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5. ROLES AND RESPONSIBILITIES

5.1. Project SHE Team

A dedicated SHE Team appointed for the Project will ensure to meet the Project SHE Objectives through implementation of procedures and technical activities.

This Team will interface with all relevant departments to guarantee that all documents produced and activities performed during the execution of the Project comply with the SHE Plan, SHE Requirements and objectives.

The SHE Team and names, along with the functions and responsibilities, is detailed in the specific Project Document "Project Organization Procedure" section attachment Site - S2

5.2. Main Management Roles and Responsibilities

According to the scope of this document, Construction phase, the following roles are responsible for:

5.2.1. CONTRACTOR Project Director (PD)

The most senior position in the overall project is the Project Director

The overall Project Director ensures the achievement of established project health and safety objectives assigned.

The Project Director function includes:

- representing CONTRACTOR with the PTTLNG, Licensors, Partners and SUBCONTRACTORS, and managing all the SHE contractual aspects;
- ensuring the review of SHE contractual documents;
- defining SHE project strategies;
- supervising site activities;
- supervising project activities regarding aspects relating to health, safety and environmental protection, through the project organization positions;
- promoting LIHS and Life Saving Rules campaigns implementation during project execution;
- Add other duties if deemed necessary.

5.2.2. CONTRACTOR SITE Manager (SM)

The SM for Construction phase/activity ensures, reporting to the Project Director the achievement of the established health and safety objectives for the assigned phase/activities in order to meet the contractual obligations, objectives set by CONTRACTOR Organization and help achieve the overall objectives for the project managed by the Project Director.

Duties include:

- representing, insofar as within remit, the CONTRACTOR with PTTLNG, Licensors, Partners and SUBCONTRACTORS, and also managing all the SHE contractual aspects;
- ensuring, insofar as within remit, the review of SHE contractual documents;

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- defining, based on the instructions of the Project Director and in accordance with the project's overall objectives and strategies, the SHE strategies for assigned phase/activities and supervising the planning and scheduling of activities
- approval of Construction Safety Manual, ensuring its implementation;
- ensuring compliance with applicable and/or local SHE laws and regulation,
- undertaking a leadership role in the SHE process;
- Chair the site safety Committee dealing directly with the SHE Officer in professional level nominated for the project.
- setting standards for safe and healthy execution of construction works, and ensure full dedication by all personnel to Zero Accident Tolerance;
- ensuring that all line management and supervision conduct their duties in a manner which supports the Zero Accident Tolerance philosophy;
- ensuring the safe and healthy completion of all construction activities;
- ensuring sufficient resources are available, in terms of equipment and qualified personnel, to effectively manage SHE issues;
- ensuring that all site personnel are competent, qualified and adequately trained to perform duties given to them during the course of the construction phase;
- ensuring the provision of adequate fire prevention and protection measures and equipment;
- ensure that basic site medical facilities (first aid) and medical support are in place before and throughout construction activities;
- ensuring that the project ERP is fully implemented;
- ensuring that CONTRACTOR line management participates, contributes actively and exercises leadership in its respective individual and collective project safety meetings;
- ensuring the CONTRACTOR PPE needs are adequately funded;
- ensuring that every work activity performed by the SUBCONTRACTOR, vendors and suppliers (if any) is executed in a safe and controlled manner;
- establishing and maintaining a direct line of communication with the CONTRACTOR Field SHE manager (FSHEM);
- implementing an employee incentive scheme;
- conducting unscheduled meetings as necessary at his discretion or on request of the CONTRACTOR Field SHE Manager (FSHEM);
- leading investigations into serious accidents or potentially serious incidents;
- supporting "accident reporting" motivation;
- implementing LIHS and Life Saving Rules campaigns during the execution of the project;

Note: in case SM is temporary not be available at Site, he will nominate a substitute and will communicate it to all concerned.


Site Manager is responsible for the interfaces with:

- PTTLNG
- Police, Civil defence and Hospital;
- Local Authorities, Municipality;
- SUBCONTRACTORS;
- Suppliers and Vendors.

Site Manager case by case avails himself of the support of the Community and Interface Manager

5.2.3. CONTRACTOR SHE Manager (SHEM)

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The project SHE Manager (SHEM), reporting to the senior position in the overall Project Director (PD), shall manage and supervise Project activities within their remit relating to health, safety and the environment during Project development phase, ensuring that the SHE MS is correctly applied.

Construction's phase duties include:

- definition of Project SHE objectives in accordance with PTTLNG and CONTRACTOR SHE Policy and contractual requirements;
- ensuring preparation and the first release of the SHE Plan and Manual for the construction phase;
- coordinate and lead SHE Audit and Review activities for the project (Home Office and site);
- be the prime SPCC contact for SHE matters.

5.2.4. CONTRACTOR DEPUTY SHEM

Deputy SHE Manager acting as SHE Manager during his absence at site, reports to the senior position at site Site Manager (SM), he shall manage and supervise Project activities within their remit relating to health, safety and the environment during Project starting from the Construction phase, ensuring that the Project SHE MS is correctly applied.

- assisting construction teams in Risk Management and Occupational Safety Risk Assessment;
- ensuring that CONTRACTOR SITE Manager (SM), Construction manager (CM) and Discipline Superintendents (DS) are supported in the field controls of CONTRACTORS/Suppliers with regard to SHE aspects;
- ensuring the qualification of the set of authorization processes relevant to SHE areas required for the site (e.g. water discharges, waste, etc.) and responsibilities for their implementation;
- updating the specific site's SHE Plans, and procedures and checks that they are correctly implemented by CONTRACTOR and SUBCONTRACTOR personnel through periodic audit at site.
- Checking all SUBCONTRACTOR's documentation in order to meet the client requirement for the Construction activities.
- Assuring weekly checks of safety conditions and monthly checks of work equipment and protective devices;
- defining emergencies scenarios, Emergency Response Plans and arrange emergency drills;
- Update and check the CONTRACTORS' SHE Plan and Manual for Construction and submits them to the CONTRACTOR Site Manager (SM) for approval;
- providing information and training of PTTLNG personnel and CONTRACTOR managers responsible for SHE;
- participating in the analysis of the causes of any accidents or injuries and also ensures the collection of data;
- supporting Project Director for the implementation of LIHS and Life Saving Rules campaigns at site.
- Verify the reports coming from the SHE Officers/Engineers
- Verify and issue the SHE Monthly report according to the contractual information required by 7th of each month to PTTLNG through the CONZOL system.
- Ensure the CONTRACTOR internal reporting according to Annex 1 by the 3rd day of each

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- month;
- ensure that reporting of mandatory SHE matters to the appropriate regulatory.
 - authorities is timely and accurate.
 - liaise with the SUBCONTRACTORS' SHE Manager(s);
 - notifying the SHEM and the SM, of any SHE related incident/accident involving personnel, equipment, property or environment;
 - DSHEM is responsible for deliver SHE documents and information at site to SUBCONTRACTORS and requests to them to sign on the first page of each document shared in order to onfirm the receipt.

for the Emergency Response Plan:

- report SHE incidents immediately to the SM;
- ensure plan update (scenarios, names, numbers, positions etc) and exist for dealing with potential emergency situations;
- ensure SUBCONTRACTORS have appropriate fire prevention procedures in their SHE documents, and that they apply them;
- investigate injury, damage and near miss, accidents independent of SUBCONTRACTORS SHE Manager and/or jointly with them.

for the SHE Meetings the deputy SHE manager:

- prepare and minute the Site Management Safety Meeting;
- organise, attend and participate in relevant SHE Meetings (Supervisor's Safety Meeting);
- support supervisors and foremen with specific meeting format and content as necessary;
- generate a monthly log of meetings scheduled, meetings held, topics and attendance and submit the log to the SHEM and the SM.

He/She shall conduct regular site SHE Audits, Reviews and Inspections according to this plan. The objectives are detailed in the following:

- check implementation/compliance with the SHE documentation (updating and reviewing, as required);
- conduct regular Inspections;
- check the implementation, content, participation and effectiveness of specific dedicated meetings (see 10.3 sections) verifying compliance with SPCC SHE requirements;
- examine accident reports, perform statistical analyses and publicise the results as necessary;
- prepare a monthly SHE reports, collecting all informations from all SUBCONTRACTORS and CONTRACTORS department, for the SHEM and the SM review (SHE Monthly Report Forms as per Annex1 by the 3rd day of each month, and the SHE Monthly report for PTTLNG 122018-SPCC-C-SH-PR-0037 by the 5th of each month).
- DSHE manager ensure a full set of information for the EIA compliance to mitigation measures for construction implemented into the SHE Monthly report for PTTLNG.

for the Training shall:

- ensuring that all personnel involved with Construction activities, including SUBCONTRACTORS and VENDORS (if any), are adequately instructed of the Project SHE Requirements;
- ensure training of all site personnel (on SHE matters) at any level of the project structure (SPCC Induction and trainings);

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- arranged SHE training sessions (and specific training prior to start any work activity).

for the PPE shall:

- ensure compliance with local law or more stringent standards, contract, procedures, relating to the provision and use of PPE.

for the Hazard Management shall:

- ensure that all personnel are aware of the SHE requirements of their activities;
- manage the waste streams, compile and issue of documents and reports required in accordance with the Waste Management Plan and the EIA;
- plan and carry out, when necessary, studies and/or hazard analyses.

The SHEM / DSHE Manager avails himself of the collaboration of the:

- Safety Manager by Law, (CONTRACTOR SHE COORDINATOR)
- Environmental Specialist, and
- Security Coordinator.

for the following duties:

- Assure that all THAI laws, requirements are all implemented and tailor the SHE Management System under THAI law requirements.
- Coordinate all SHE and Security activities giving full support and consultant to the SHEM/DSHEM.
- Stop all work when THAI SHE and/or Security laws are not respected
- Translate from English to Thai version to all SHE & EIA relevant documents for communication before hand to the relevant involved parties (i.e. Work Permit Forms)

OHS&E Trainer shall:

Prepare and organize SHE Induction, develop and implement a training programme covering aspects such as abrasive wheels, enclosed spaces, breathing apparatus, harnesses, driving, etc, in line with Project Risk assessment results.

OHS&E Trainer shall keep the records and tracking system for the training and communicate on monthly base the relevant information for the monthly report to the DSHEM.

OHS&E Trainer ensure that personnel are aware of:

- SPCC and PTTLNG organisation and principal personnel;
- All employee SHE responsibilities under SPCC and PTTLNG rules;
- project SHE Policy and objectives;
- education and training programme;
- Health, Safety and Environmental practices;
- foreman's tool box talks;
- SHE information communication programme;
- SHE incentive programme;
- SHE discipline programme;
- Reporting hazardous conditions;
- other matters as necessary, housekeeping and sanitation procedures;

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- Risk assessments.

Duties for other Environmental, Health and Security functions have been reported within the relevant documentation.

6. DOCUMENT UPDATING AND DISTRIBUTION

This plan is a live document. To ensure its accuracy and consistency, this document will be readily updated and maintained whenever the responsibilities of people involved or the specific scope of work will change.

All revisions to this document will be done by CONTRACTOR SHE Manager or DSHEM and approved by CONTRACTOR Project Director for final issue.

The distribution of this document is under the direct responsibility of CONTRACTOR Project Director / Project Manager (PM).

The SHE Plan shall be distributed to:

- CONTRACTOR Project Director (PD)
- Site Manager (SM)
- CONTRACTOR SHE Manager (SHEM);
- CONTRACTOR Deputy SHE Manager (DSHEM);
- PTTLNG/PMC
- SUBCONTRACTORS (during bidding phase, if available and update during the construction phase).
- SUBCONTRACTORS SHE Managers
- SUPPLIER
- VENDORS

7. SHE POLICIES



Construction phase, as well as each phase of the Project, will fully comply with PTTLNG Policy Statements, SPCC SHE Policy Statement.

This policy statement that reflects the commitment of CONTRACTOR's to the protection of the Environment, and the Health and Safety of its personnel and all people that could be affected by its operations, as further detailed in the following sections. The SHE Policy is the basis upon which Project SHE objectives are set.

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Through the implementation of our SHE management system, the SPCC management will:

- ☐ Prevent accidents resulting from our activities.
- ☐ Assess and manage the risk which may arise from our activities for people, assets or environment.
- ☐ Preserve our employees' physical integrity and preserve environment.
- ☐ Meet or exceed the regulatory requirements of the Thai government through strict adherence to all applicable national, provincial and international laws.
- ☐ Report our performance against SHE objectives and targets to PTTLNG/PMC.

All SHE activities foreseen for the Project have the aim to implement SHE policy statements.

The Project has issued the following:

- SHE Policy
- Alcohol & Drugs Policy

7.1. Drugs & Alcohol Policy

Use of Alcohol and Drugs on the site shall be cause for immediate dismissal and permanent removal from the site.

Testing for drugs and alcohol without cause (at random) or following any undesirable event, accident or near-miss will comply with laws applicable in Thailand.

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8. SHE POLICY DISSEMINATION

Inside the offices and on site several safety boards will be placed and SHE policies posted on. During induction and training SHE policies will be always empathized and content explained to everybody that has to completely adhere to.

Respect and dissemination of all statements is a Construction Management ad SHE Management duty.

9. PROJECT KPIS AND TARGETS

The trailing and leading indicators (KPIs) for Safety & Environment are part of the CONTRACTOR SHE reporting system.

They can also be used for setting measurable target objectives to manage SHE activities or establish safety bonuses for personnel or project.

SHE issues and performance including reporting on progress, reviews, action close out, areas of concern, incidents, mitigation measure implementation and monitoring records required in the EIA report will be part of the monthly SHE report.

Safety stats and KPI shall be also collected for internal use of CONTRACTOR according the forms attached on monthly base.

■ TARGETS FOR TRAILING SAFETY & ENVIRONMENT KPIS

TRAILING INDICATOR	Project TARGET
Fatality (FTL)	Target = zero
Lost Time Injuries Frequency rate - LTIFR	LTIFR= 0
Total recordable injuries frequency rate (TRIFR)	TRIFR= 0,226 (PTTLNG requirement)
Road Traffic Accidents (RTA) per 1,000,000 Km driven	RTA = as reported
Waste generation	as defines based on the EIA
Energy consumption	
Water consumption	
Spills	Maximum number of spills (> 100 liters) = zero
SHE deviations notified by third parties	Zero.(Examples of deviations: notification by PTTLNG, complaint by neighboring communities, notification or fine by authorities)

According to the PTTLNG requirements all indicators are referring to 200,000 man hours.

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■ TARGETS FOR LEADING SAFETY & ENVIRONMENT KPIS

LEADING INDICATOR	TARGET
SHE Training hours	Comply with the Project SHE training schedule (by Project management based in CONTRACTOR head offices)
Management SHE visits	Project target 2 per year (by Site management No SHE)
Site Management Inspections	Project target > 1 per week [1/w recommended by PTTLNG]
Pre-job meetings	100 % realized by all teams/shifts
Tool Box Talks (TBT) weekly	100 % realized by all supervisors/foremen
Job Safety Environmental Analysis (JSEA)	Actual number is reported JSEA is required before starting any new job or any new job conditions or any hazardous job
SHE meetings	Comply with the project's Program
SHE Inspection	Comply with the Project SHE Inspection schedule
Undesirable events reported	To measure the number of SHOC cards completed To fix a target can be misleading : maximum of events reported (transparency & control) against minimum of undesirable SHE events)
Near Miss (NM)	To measure the number of NM reports completed. To fix a target can be also misleading
Investigation of notified incidents	100% investigated (including near-misses)
Km. Driven	Actual Km, reported for calculation of RTA frequency

Celebration target for LTI free shall follow the steps indicated below:

- 1 Million MH LTI FREE
- 5 Million MH LTI FREE
- 10 Million MH LTI FREE
- 15 Million MH LTI FREE
- End of the Project forecasted 17 Million MH LTI FREE

■ TARGETS FOR MEDICAL KPIS

Health indicators are detailed in the CONTRACTOR procedure and are also part of the CONTRACTOR SHE reporting.

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10. SHE MANAGEMENT SYSTEM

CONTRACTOR is OHSAS 18001:2007 and ISO 14001:2015 certified and CONTRACTOR SHE MS meet the above mentioned Standards.

In accordance with principles stated in the CONTRACTOR SHE Policy, the SHE MS is established to ensure that Health, Safety and Environmental issues are comprehensively addressed at all stages of the Project life cycle, and that all design choices and decisions are justified with respect to their implications for Health, Safety and Environment during the following phases of the Project.

10.1. The SHE Management System in the Project development

The application of the SHE MS to PTTLNG Project is based on four fundamental points:

- Organization;
- Assessment and planning;
- Implementation and operation;
- Controls and corrective actions.

10.1.1. Organization

The SHE organizational structure is composed of experts who combine the SHE skills typical of engineering with those of plant construction and commissioning (SHE Overall Management). These experts are coordinated by the Project SHE Manager which guarantees the proper application of the SHE MS during all the Project phases, and at Site by the SHE Manager.

10.1.2. Assessment and planning

The main activities carried out by the SHE Team in the assessment and planning of the various phases of the Project are:

- the identification of hazards,
- the risk assessment,
- the identification of environmental issues to be kept under control,
- the definition of SHE objectives to be pursued,
- the identification of legislation and SHE requirements to be observed,
- the preparation of SHE deliverables.

These activities also involve specialists from other disciplines and the PD and SM.

10.1.3. Implementation and operation

In order to achieve the SHE objectives defined in the assessment and planning phase all Project staff will be involved in the activities following described in this Plan.

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- CONTRACTOR promotes Health campaigns and programs will be actively sustained and implemented by the Project Team.
 - All the CONTRACTORS and its SUBCONTRACTORS personnel involved in the execution of the project will be subjected to a Medical Fitness Examination following the Health Project requirements.
- Details reported within the Health Management Procedures and Planning doc n 122018-SPCC-C-SH-PR-0005

• Safety:

- The Project management will establish and pursues the Project Annual Safety Performance Targets.
- CONTRACTOR's promoted Safety campaigns and programs will be actively sustained and implemented by the Project Team.
- Incident Investigations outcomes and Project Safety Performance data will be reported and shared within the CONTRACTOR HO in accordance with the relevant CONTRACTOR standards and procedures
- All the possible emergency scenarios will be properly assessed in order to minimize the emergency magnitude. Periodical drills will be performed at Site in order to ensure the prompt and efficient response to all the emergency reasonably foreseeable.

• Environment:

- Project Team is committed to reduce energy consumptions, increase energy efficiency and, whenever possible, to prefer the use of renewable energy during the Project execution.
- Natural resources saving (especially for water use) will be strongly promoted and encouraged.
- Environmental impacts including (waste and spills) due to the Projects activities will be properly assessed and managed.
- The Environmental performance data will be reported and shared within the CONTRACTOR's management respectively in accordance with the relevant CONTRACTOR procedures

Details reported within the Environmental Management Plan doc n 122018-SPCC-C-SH-PR-0032.

Further SHE Objectives can be defined at a later stage according with the Project needs.

10.2.1. Objectives Management Review

Project Management will review, at least once per year, the Project SHE MS in order to ensure its continuing suitability, adequacy and effectiveness, giving its feedback to the CONTRACTOR HO.

Annual Objectives and Targets will be reviewed in the following cases:

- When the targets are failed or not reasonably achievable
- In case of project top management changes
- In any case, at least, once per year.

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10.1.4. Controls and corrective actions

The proper application of the SHE MS is constantly checked by the Project SHE structure. This is a control which derives from the need to keep to schedule in executing activities and to reduce unforeseen events and risks to people and to the environment.

10.2. SHE Objectives

The main objectives of the CONTRACTOR SHE MS are summarized as follows:

- identification of all potential SHE impacts associated with the Project, and application of prevention, control and mitigation measures to eliminate or minimize harm to people, damage to project or equipment, or adverse environmental damage;
- minimization of the incidents likelihood during all phases of the Project and to guarantee a safe working environment for people, in compliance with the contractual SHE Requirements and Local, National and International Regulations;
- minimizing negative effects on the environment through waste and spill management and the use of carefully thought out and executed design, procurement and construction methods;
- promotion in adopting a positive, proactive, committed health, safety and environmental culture throughout all phases of the Project;
- pursuit of continuous improvement by regularly planning, implementing, auditing, and updating the System (i.e. Plan-Do-Check-Act cycle);
- project commitment, and active and visible leadership in promoting the correct application of the Project SHE MS to ensure that all hazards and environmental impact factors related to the Project are identified, their risks and environmental impact quantified and appropriate control and mitigation measures are taken to manage them;
- Increasing the SHE culture in the workforce;
- Be always prepared and resourced to manage, contain and de-escalate emergency situations;
- Ensuring continuous improvement through periodic Management SHE Reviews.

In particular, during the execution of the Project will be assured the following specific objectives:

- SHE MS:
 - The SHE MS will be implemented in order to assure the preservation of the ISO 14001:2015 and OHSAS 18001:2007 certification.
 - Periodical Audits will be performed in order to verify the compliance with the applicable laws, CONTRACTOR requirements, relevant international standards and the control of the Sub-CONTRACTOR.
 - A specific training program will be developed in order to cover all the training needs of the workforce, ensuring the compliance with the relevant project requirements, laws and regulations, applying where possible the standardized courses of the CONTRACTOR
 - Proper communication between Project staff and the upper levels of CONTRACTOR Group will be ensured in accordance with the relevant applicable standards and procedures.
- Health:

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10.3. Leadership and Commitment

CONTRACTOR Project Management will demonstrate strong and visible leadership and commitment concerning Health, Safety and Environment management, and will be directly involved and responsible for the SHE MS implementation.

Project Management will work actively and systematically on SHE issues within the organization, and ensure that all decisions and practices are in line with the principles of the SHE MS.

Such commitment will be transmitted to all the levels from the PD down throughout the organization.

CONTRACTOR commitment will be realized through and witnessed by:

- Positive and proactive SHE attitude by the Project Management and the work force
- Visible management participation in activities as SHE meetings, audits, accident investigations, reviews and hazard identification system
- Leading periodical SHE walk about
- Planning and implementation of SHE action plans, assessment of results and initiation of corrective actions for continuous improvement
- Planning and organizing the work in a safe manner prior to executing the tasks, by conducting Risk Assessments for all the operation to be performed and in particular for non-routine and hazardous activities
- Provision of suitable training, supervision, information and instruction to all concerned personnel
- Regular, active and responsible participation of all personnel in SHE training courses, Job Safety Analysis, Tool-box Meetings, which have to be conducted by suitably qualified SHE personnel
- Providing safety of the personnel, safe site, equipment, personal protective equipment and safe systems of work
- Acceptance and accountability of the responsibility for accidents and incidents in the workplaces
- Performing of accident investigation and review of occurred accidents, and further identification of remedial and preventive actions
- Introduction of systems to encourage all workforce in providing suggestions and proposals for improvements in SHE performance

10.4. Leadership In Health And Safety Program (LIHS)

CONTRACTOR has developed an innovative and highly interactive training program with the aim of creating and enforce a strong Safety and Health Culture within the organization starting from the Management: the Leadership in Health and Safety Program (LIHS).

In order to achieve this cultural change, the main objective of LIHS is to begin the improving process of our managers in fully matured Safety Leaders.

A clearly defined top down strategy enables each level of management to become safety ambassadors, sponsoring the next levels in order to touch every manager within the organization, and in addition delivering critical safety messages down to every employee.

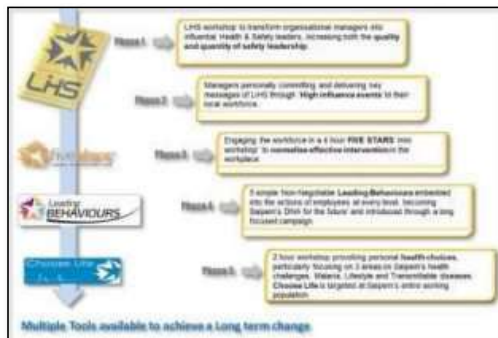
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In addition to this, an innovative bottom-up approach was developed, which utilizes the 'personal social influence' of selected employees who actively work to instill the 5 leading behaviours into the organization at local levels.

The implementation of the LiHS program will be evaluated by CONTRACTOR Management for the CONTRACTOR's personnel.

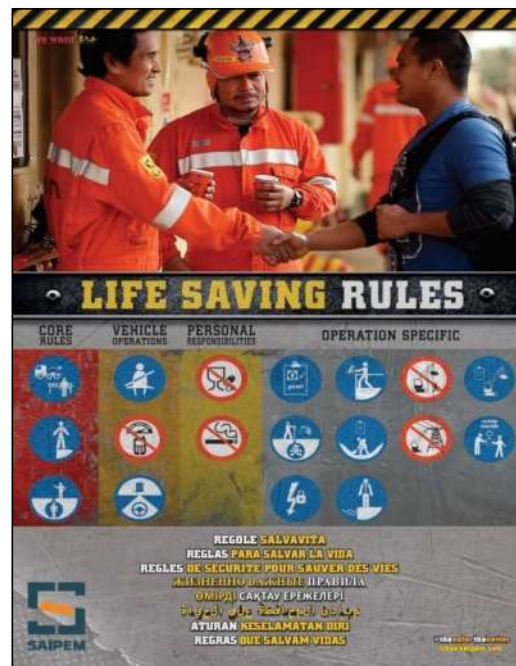
The opportunity to extend the LiHS program to other personnel involved in the Project, if any, will be evaluated according to the PTTLNG requests.



10.5. CONTRACTOR Life Saving Rules Campaign

CONTRACTOR has launched within its organization a new safety campaign, called "Life Saving Rules". These rules are already present within CONTRACTOR's (Saipem) existing SHEMS, programmes, procedures and policies; their purpose however is to give a heightened awareness of the activities which are most likely to result in fatalities.

They are based on the International Association of Oil & Gas Producers Life Saving Rules (Report No. 459 April 2013 (Version 2)), who made their material freely available to implement. As the IOGP strongly recommends, the rules have been adapted to reflect CONTRACTOR's communication style, use of multiple languages, and complexity of diverse operations. The fundamentals of each rule and icon remain the same.




The Campaign will be divided into 3 phases, and the aim is to communicate/cascade each phase to the workforce in an effective way, planning the release appropriate to the local operational contexts, and through meetings, toolbox talks, specific events etc.

- 1) Campaign Launch.
- 2) Progressive organisation-wide release of the 3 'Core Rules'.
- 3) Release of the remaining rules as a toolkit.

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11. SHE ACTIVITIES

11.1. Activities Overview

The main SHE activities that will be carried out during the Construction phase of the Project will refer to:

- Identification and assessment of SHE risks for the contracted job, covering hazardous equipment, workplace hazards, hazardous substances and harmful agents;
- Choice and implementation of risk mitigation measures;
- Implementation of specific ERP in case of emergency occurrence;
- Issuing and implementation of safe working procedures for performing hazardous jobs, briefing of all personnel involved with the work regarding hazards and know-how of their avoidance;
- Preparation and implementation of project SHE training program to increase the level of knowledge for all the people involved in site activities;
- Performing routine checks of site firefighting and safety equipment to ensure they function correctly; routine checks on personnel working practices, ensuring they wear proper site clothing and PPE;
- Implementation of accident / incident investigation reporting procedure and monitoring that corrective actions to prevent reoccurrence of accidents are implemented;
- Reporting to CONTRACTOR organization and to PTTLNG the status of planning and implementation of activities to ensure safe construction activities;
- Inspecting all machinery, tools and equipment used;
- Perform periodically audits and inspections to ensure the correct SHE management.
- Implementation of Training Matrix;
- Verification of the monthly inspection of equipments and gears completed by CONTRACTOR and SUBCONTRACTORS.

CONTRACTOR developed Safety Construction procedures according to the Contractual requirements and collected them all together into the "Construction SHE Manual", that shall comply with PTTLNG and CONTRACTOR requirements together with relevant industry codes, practices and norms and any mandatory regulation imposed by THAI authorities.

SHE Audits and inspections will be performed by CONTRACTOR during the Construction Phase of the Project, in order to ensure that the site activities shall be executed in accordance with the applicable laws, Safety Codes, SHE requirements, Regulations and good operations practices.

Each SUBCONTRACTOR SHE Manager is required to provide signed copy of the CONTRACTOR's Policy/Manual/Plan and procedures to confirm that he has read, accepts and understood.

It's responsibility of each SUBCONTRACTOR to define which specification may apply to their scope of work and provide justification for not being applicable for the CONTRACTOR's final approval.

SUBCONTRACTOR shall bring to the attention of SHE department any totally or partially misalignment /inconsistency/not applicability of the documents in this plan.

The acceptance of the SUBCONTRACTOR's SHE documentation doesn't relieve the SUBCONTRACTOR to strictly adhere to THAI regulation and applicable Site SHE rules.

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11.2. SHE Deliverables

Full list into the Project SHE Plan 122018-SPCC-C-SH-PR-0001

11.2.1. SHE Manual for Construction and relevant Procedures

The SHE Manual defines all safety working procedures together with those stated at section 4 of the present document that CONTRACTOR will apply during the Construction phase of the Project in order to properly face the SHE hazards that characterize the tasks forming the job and to avoid SHE accidents occurrence.

The SHE Manual constitutes a reference document for the SHE hazards identification, and control relevant to the whole Construction, stages.

Additionally, the SHE Manual will state provisions for PPE, Safety signs and Barriers, inspections, audit, critical lifting and planning, etc.

This document will contain Site SHE procedures to be implemented together with the others as per section 4.

All specific SUBCONTRACTOR procedures for site activities shall be subject to SHEM/DSHEM at site for monitoring and approval.

In cases where SUBCONTRACTOR'S work procedures do not meet the required project standards, the SHEM at site will assist in the development of the appropriate procedures and assist the SUBCONTRACTOR in developing an approach to comply with the procedures.

The procedures may be modified and expanded (by the SHEM at site), as required, throughout the duration of the Construction phase.

For all hazardous materials used by the SUBCONTRACTORS, the SHEM at site shall ensure that:


- Inventory of Chemical is at site 1 month in advance of hazardous material arrive at site
- SDS (safety data sheet) is obtained 1 month before delivery to site of any hazardous material;
- there exist appropriate facilities for proper unloading and storage;
- information on the hazards of the materials is properly communicated to the users;
- employees shall be trained in the safe use of the materials, including personal protective equipment and emergency procedures;
- copy of the SDS shall be available to all personnel in the area where the hazardous material is being stored or used,
- a written procedure exists for their use and disposal.

The SHEM at site shall also ensure that an inventory of the SDS is kept and made available on demand and also on site first aid room/clinic and on the place where the substance has to be used.

The following are among those which should be in the inventory:

- Paints, coatings, thinners, solvents and cleaning agents;
- Insulating materials such as fibre glass and ceramics;
- Sandblasting materials;
- Compressed gasses such as oxygen, nitrogen, argon, helium, acetylene;

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- Greases, oils, and other lubricants;
- Fuel such as gasoline, diesel, kerosene;
- Epoxy resins / sealant;
- Bulk containers of household products and disinfectants;
- Cement.

11.2.2. SHE Risk Assessment

CONTRACTOR shall provide information and input as required into PTTLNG's Report on Protective Measures for Operational Safety as required by Notification of the Ministry of Industry No: 3 (BE 2542) issued under the Factory Act BE 2535. The information shall be supplied based on the safety reviews, hazard and risk assessment carried out by CONTRACTOR.

CONTRACTOR's management will ensure that every work activity performed under the CONTRACTOR responsibility, by CONTRACTOR and its SUBCONTRACTORS, vendors and suppliers is executed in a safe and controlled manner.

For each activity performed during Construction, Pre-Commissioning and Commissioning phases, a Qualitative/Quantitative Risk Assessment will be prepared.

All tasks will be subject to a written Method Statement, a Risk Assessment (RA) / Job Safety **Environmental** Analysis (JSEA) carried out by competent persons, and submitted to SHE and Construction representatives for review and approval.

A RA shall be required for each SUBCONTRACTOR activity, and mitigation measures shall be implemented before work commences.

Carry out a RA means to make a preliminary evaluation of risks and the evaluation of residual risks as result of the application of mitigation measures; the methodology deriving from the definition of risk is applied using a Risk Matrix:

- Probability Rate (P): quantification of the probability that a dangerous situation may result in harm to the exposed personnel;
- Severity Rate (S): quantification of the magnitude, namely the severity of the consequences for the exposed personnel that may cause harmful situations to degenerate;
- Risk Rate (R): the product of the probability rate (P) by the severity rate (S).

The complete process will be detailed in a *specific CONTRACTOR document* SHE RISK Assessment and JSEA procedure 122018-SPCC-C-SH-PR-0018

A separate document shall be issued the risk assessment of all activities performed on the project during each phase, specifically for construction into the doc n. 122018-SPCC-C-SH-RPT-0005 SAFETY RISK ASSESSMENT FOR CONSTRUCTION

11.2.3. Job Safety Environmental Analysis

The Job Safety Environmental Analysis (JSEA) is an excellent and efficient technique for identifying unsafe conditions and acts in the working environment.

A JSEA is intended to analyse the individual steps or activities, which create a job or specific work duty, and to detect any specific potential hazard that may be released in the working environment.

Before starting every activity under the CONTRACTOR responsibility, Construction and SHE representatives will be accountable for a Job Safety Analysis (JSEA), bearing in mind:

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- The related Safety Manual procedure;
- The risk assessment;
- The available equipment;
- The other interfering activities;
- The number of workers to realize the job;
- The existing environment (including weather conditions) where the work has to be executed.

The resulting JSEA will be recorded and updated if any element should change.

The JSEA is commonly used to identify less obvious or specific potential hazards that may go undetected or being missed during routine management observations or audits or during the general RA analysis.

Moreover it:

- Can be performed relatively quickly for less protracted tasks.
- Identifies actual and potential physical hazards in the work environment, and helps determine how they should be managed.
- Reveals hazardous motions, postures, activities or work practices of individual employees.
- Assists personnel on how to perform operations, by breaking the job task down into individual steps and identifying risk and control measures for each individual step.
- Improves efficiency by identifying incorrect procedures or work instructions.
- Increases employee involvement in the safety process.
- Enhances communication between management and employees regarding safety concerns.
- Contributes to the productivity of a job by eliminating or reducing its injury potential.

The complete JSEA Methodology will be detailed in a *specific CONTRACTOR* procedure

SHE RISK Assessment and JSEA Management doc n 122018-SPCC-C-SH-PR-0018

11.2.4. Emergency Response Plan

The Emergency Response Plan has the aim to approach a site emergency and demonstrate that all the possible hazardous situations are properly identified, managed, reported and dealt with a safe, efficient and effective manner.

The ERP will describe the emergency system that the CONTRACTOR applies to the Project, in order to face the accidents that can occur during Construction phase.


CONTRACTOR initial ERP will be reviewed, if necessary, with PTTLNG to coordinate the mobilization of the following resources into a global ERP:

- the community (firemen, hospitals and doctors, police force, etc.);
- PTTLNG resources.

The ERP will be transmitted to:

- Control Personnel;
- Emergency Services;
- Employees who may be affected;
- PTTLNG/PMC Representative;
- Others likely to be impacted.

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and will cover:

- organization, responsibilities, authorities and procedures including the maintenance of internal and external communications;
- systems and procedures for providing personnel refuge, evacuation, rescue, medical treatment and repatriation;
- systems and procedures for preventing, mitigating and monitoring environmental effects of emergency actions;
- procedures for communicating with authorities, relatives, the media and other relevant parties;
- arrangements for training response teams and for testing emergency systems and procedures;

The scenarios will be covered as a minimum by the ERP:

- worksite injuries
- safe escape and evacuation from site during emergencies;
- natural disasters (e.g. earthquakes);
- road traffic accidents;
- fire and explosion;
- missing person.

Deliverable: Emergency Response Plan for Construction 122018-SPCC-C-SH-PR-0031

The SM for the Emergency Response Plan for construction shall:

- ensure that basic site medical facilities (first aid) and medical support are in place before and throughout Construction Works;
- ensure that the Emergency Response Plan is fully implemented and regularly tested in the emergency drills;
- attend and participate in relevant SHE Meetings
- ensure that SPCC line management and supervisors participate, contribute actively
- and exercise leadership in their respective individual and collective project safety meetings;
- ensure that SHE is a regular agenda item at site management meetings;
- conduct unscheduled meetings as necessary at his discretion or on request of the SPCC SHEM/DSHEM or site Safety manager

11.2.5. Environmental Management Plan (EMP)

The Environmental Management Plans, specifies the requirements and methods for the management of the environmental issues concerning the site activities of the PROJECT. The document includes Environmental Mitigation Measures of the EIA.

The document aims to meet applicable legal Environmental Requirements and minimizing the environmental impacts due to site activities, as in the scope of CONTRACTOR SHE MS, SHE Policy, and ISO 14001 Standard "Environmental Management Systems – Requirements with guidance for use".

This Plan is a living document, and will be reviewed and updated as necessary in order to ensure its adequacy; moreover it will be updated with reference to all construction and commissioning activities.

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The main objectives of this Plan are to:

- Minimize the environmental impacts due to site activities;
- Comply with all applicable legal and other environmental requirements;
- Continuously improving site environmental performances.

These objectives are pursued through the following activities:

- Identification of main applicable environmental requirements;
- Description of site SHE roles and responsibilities, with particular respect to environmental activities;
- Identification and assessment of the significant environmental aspects deriving from construction activities;
- Selection of environmental impact minimization and control measures: noise production, atmospheric emissions and dust generation, interference with subsoil/groundwater, waste and waste water generation;
- Adoption of plans/procedures for managing specific environmental aspects;
- Collecting and Reporting environmental data;
- Planning audits to verify the correct implementation by Contractor personnel of the Project Environmental Management System and this plan and detailed control and management plans prescriptions;
- Planning "Legal compliance audits" in order to assess compliance with specific Project environmental legal and other requirements concerning significant environmental aspects.

Preventive measures in order to minimize dust production, emissions to air and noise production will be undertaken.

Therefore, as for the above description, this document cover and describes also all the aspects related to environmental inspection, incident reporting, role and responsibilities (staffing) and training.

The document also contain the specific forms to complete with all the environmental data (e.g Energy and water consumption, waste, etc.).

The document includes the Environmental Mitigation Measures according to EIA, however separated document has been issued as Environmental Monitoring Plan.

Details in the Environmental Management Plan 122018-SPCC-C-SH-PR-0032

11.2.6. Waste Management Plan (WMP)

The Waste Management Plan will provide the guidelines to manage waste and wastewater produced during Project Site activities in order to ensure that each phase (collection, storage, transportation, reuse, recycle and disposal) is appropriately managed with respect to its implications on the environment and in accordance with EIA, International agreements, National Laws and requirements, including contractual ones.

This guideline will be followed by all CONTRACTOR and SUBCONTRACTOR employees throughout the site activities of the Project.

The WMP is of primary importance in ensuring that disposal/facilities options are selected and justified with respect to their implication on the environment.

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The scope of the WMP is to:

- Describe how the wastes will be managed (handling, collection, storage, transportation, disposal and record keeping);
- Provide guidance to the Contractor personnel for managing their wastes effectively and within the applicable waste regulation requirements;
- Provide guidance for the collection, handling, and temporary storage of each waste generated during operational activities to protect human health and to minimize the impact on the environment;
- Control the amount of waste generated following good operating practices and respecting waste reduction principles;
- Give guidance for waste reduction according to the hierarchical application of the practices of reuse, recycling, recovery, treatment and final disposal in approved disposal sites.

The WMP is a living document, which shall be updated and reviewed as necessary on site according to actual site conditions and actual waste streams being generated.

Reference : 122018-SPCC-C-SH-PR-0023 Project WASTE Management Plan

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11.2.7. Spill Contingency Plan

During the course of site activities, every effort shall be made to ensure that all activities are conducted so to avoid the risk of spills or, if an incident were to occur, to implement measures and actions to prevent its escalation.

The Spill Plan has been prepared and it shall implemented by CONTRACTOR to ensure the management and the control of accidental discharges or spills during the site activities.

This Plan identifies impacts and related mitigation measures to be considered during construction and commissioning activities.

Based on the EIA requirements if any and the identification of the main situations in which a pollutant spill might occur, the plan describes strategies for spill prevention and response.

This Plan details the overall response coordination to spills of hazardous substances associated with site activities in order to organize the control, alert and intervention systems which shall be in function, so as to avoid and, in case, reduce any potential pollution.

Therefore, the basic scope of this Plan is:

- To identify the relevant types of spills and the scenarios which could be possibly lead to pollution (air emissions, noise and vibration, water pollution and liquid waste disposal, solid waste management, accidental spills/discharges of oils/fuels, etc.);
- To identify the prevention strategies (measures) and the response actions adopted during and immediately after the release of pollutants to control the event;
- To describe the organization that shall deal with the problem, both during the prevention and emergency intervention phases (including absorbent pads, containment and clean up equipment to be held and its location);
- To establish the procedures to be adopted for alerting those bodies in charge of emergency management, both within the construction site structures and at higher levels (concerned Government Agencies, etc...), and other response plans;
- To identify the material temporary storage areas (contention walls, waterproofing of soil,...).

CONTRACTOR has overall responsibility for the Spill Prevention on site during site activities.

All employees shall be aware of, and informed about the provisions of the Plan.

This guideline will be followed by all CONTRACTOR and SUBCONTRACTOR employees throughout the construction activities of the Project.

Reference 122018-SPCC-C-SH-PR-0025 Project Spill Contingency Plan

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11.2.8. Health Plan

CONTRACTOR has developed a comprehensive Health Management System based on the logic of prevention, and putting a focus on the employees' health protection. CONTRACTOR will apply this Health Management on the Project, and will implement all its health related procedures aiming to safeguard employees' health. The system will be based on CONTRACTOR procedures, PTTLNG requirements for the Project and the applicable regulatory legislation. CONTRACTOR will develop project specific Health Plan that will serve as main tool for health management on the Project.

All works undertaken by Contractor will be carried out in accordance with the guidelines in the overall PTTLNG and CONTRACTOR SHE policies and related SHE objectives. CONTRACTOR will comply with PTTLNG Health related requirements and its Corporate standards for development of medical facilities on the Project.

Described below are the main aspects that CONTRACTOR will take into consideration in developing health management system and health related documents:

- Development of Health Programs;
- Health Risk Assessment;
- Health Plan (Minimum Health Standards for the Project);
- Fitness to work;
- First Aid and medical emergency response;
- Training program for medical and paramedical personnel;
- Hygiene Surveillance.

122018-SPCC-C-SH-PR-0005 Health Management Procedures and Planning

11.2.9. Health Risk Assessment (HRA)

CONTRACTOR has developed Health Risk Assessment procedure that is to be implemented on the Project during the construction and commissioning phases. The procedure describes the process of identification, evaluation and control of potential health hazards and health risks intending to protect and consequently safeguard the employees' health. It is created for helping both the assessor and the line management, who are ultimately responsible for ensuring that the health risk assessment is undertaken. It is also aimed to help the occupational doctors who are conducting employees' fitness medical examinations to understand the health hazards and risks to which they are exposed on each specific worksite. The whole HRA process includes several steps, which include the following:

- To identify the health hazards, hazardous activities, and the exposed personnel
- To assess the health risks and set priorities
- To establish Control Measures
- To establish Recovery Measures
- To formulate and monitor Remedial Action Plans (RAP) -To record the HRA
- To review the HRA

The risk associated with a particular activity is judged by estimating the probability and consequence in relative terms, 'low,' 'medium' or 'high,' and combining the two using previously agreed rules. This approach to the expression of risk is adequate for many types of evaluation, allowing for a structured approach to be adopted in situations where more precise numerical methods would be inappropriate.

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The health risk matrix is the tool in ranking health risks. A ranking is obtained by assigning each identified health hazard within the activity a severity and likelihood, based on their potential to cause ill health and the history of previous exposure. Entering different risks on the matrix enables priorities for healthcare management to be set and mitigation measures planned. A comparison between the required controls and current controls will enable the identification of any gaps.

CONTRACTOR will conduct project specific Health Risk Assessment which will provide guidelines for identification, evaluation and control of potential health hazards and health risks intending to protect and consequently safeguard the employees' health. This assessment must be carried out for all stages of the Project starting with the survey activities and will be amended if there will be any changes to existing activities. Based on the hazard identification CONTRACTOR will implement certain controls measure (develop customized programs) in order to minimize the adverse effects of all identified health hazards. As heat stress, dehydration and high noise levels are common health related climatic hazards we have established programs aiming to control the exposure and the effects.

Details into the 122018-SPCC-C-SH-PR-0005 Health Management Procedures and Planning

11.2.10. Medical Emergency Response Plan (MERP)

Medical emergency is a situation in which due to illness or an accident there is the danger of losing a limb, an organ or life. Medical emergencies require timely clinical and surgical intervention capabilities. Therefore, at their first indication, pre-defined procedure shall be activated, in order to immediately involve the first aiders, medical personnel, medical facilities and the Project Management. Immediate intervention is essential, because actions performed in the first minutes of emergency determine the final outcome.

In order to face possible emergencies on the Project, CONTRACTOR will prepare specific evacuation plan for medical emergencies. The plan shall consider the specific needs for the work activities that will be performed.

The elaboration of the plan will be preceded by a survey of the geographic area where the Project will take place. The scope of the survey will be to evaluate the environmental conditions of the site where working activities will take place and the main local medical structures that may be utilized in case of emergency evacuation.

The main chapters to be developed for the MERP will be developed in the following order:

- Definition;
- Scope;
- Responsibilities;
- Lines of communication;
- Medical Evacuation actions:
- Primary Evacuation;
- Secondary Evacuation;
- Repatriation;
- Personnel in charge and their actions.

Moreover, the plan will contain:

- Telephone numbers to contact
- Medical Emergency Transportation chart;

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- Medical Emergency Communication flow chart;

Details into the 122018-SPCC-C-SH-PR-0005 Health Management Procedures and Planning

11.2.11. SHE Training and Information Program

SHE training requirements will be identified as the gap between what an individual needs to know, in order to ensure the assigned tasks are performed safely and healthy, and what he actually knows (due to training / qualifications / previous experience).

To provide information, instructions and training, CONTRACTOR will put in place a specific SHE Training Program for workers, on the basis of minimum SHE training needs, with the scope of familiarizing personnel with the rules to enforce in order to prevent injuries/accidents occurrence and allow staff work competently, safely and healthy in the tasks allocated, to increase efficiency and employee job satisfaction.

The CONTRACTOR SHE Team has the responsibility to organize and plan the SHE induction course for all workers and specific training for supervisors, SHE officers, emergency team and critical works or activities.

The CONTRACTOR Training Program is composed of not limited to:

- Site SHE Induction for every employee entering the site;
- General SHE Orientation for every employee working on the project;
- Training course for workers, supervisors and SHE personnel, as per training matrix
- Emergency response and rescue drills;
- Environmental training;
- Training refreshing courses for workers and supervisors.
- Tool-Box talks;
- Daily Job Specific SHE Talks;
- Others as deemed necessary.

General awareness of health, safety and environmental issues will be introduced during the General SHE Orientation and Training for all project personnel, with particular attention to items including, but not limited, to: Permit to Work, firefighting, safety signs, housekeeping, hand tools and power tools, health diseases, scaffolding, manual handling, confined spaces, working at height, use of PPE's and escape; SHE Policy statements and individuals' SHE responsibilities will be included as a fundamental requirement in orientation training.

Wider description within the SHE Training Procedure 122018-SPCC-C-SH-PR-0003


CONTRACTOR and SUBCONTRACTORS are responsible for deliver all necessary training, to each own employees, at their own cost.

SUBCONTRACTORS is required to continually reinforce the SHE message to their employees on general Site rules and train them in the SHE Requirements of their particular job.

If relevant with the performed activities, CONTRACTOR and SUBCONTRACTORS will inform their employees on:

- Risks identification, assessment & management (Job Safety Analysis, work permit, environment awareness etc.);
- Personnel fitness (periodical medical check-up and/or vaccinations etc.)
- General operation safety (stepping-handling-lifting, personal protective equipment, working at

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- height);
- Logistic safety (lifting gear, crane, forklift, container, motor vehicle transportation, personnel lifting);
- Mechanical safety (welding, cutting, sand blasting, painting);
- Pressure safety (compressed air, high-pressure circuits, pressure vessels, pressurized operations);
- Electricity safety (earth, lock out-tag out, classified zones);
- Safe handling and disposal of Hazardous material (fuels, acetylene, oxygen, radioactive materials, reactants etc.);
- Pollution control and environmental protection;
- Selection, use and care of all types of personal protective equipment;
- Life-saving and escape techniques (first aid, firefighting, emergency response/preparedness);
- Work at Height;
- Basic Safety Work practices for working on the sea
- Basic firefighting training for all workers;
- Chemical and Hazardous release;

Subcontractors shall also:

Inform their employees of the safe work methods to be adopted in their particular work including the use of standard PPE and additional PPE in line with Risk Assessment results;

Inform their employees of any special SHE rules for working near operating plant.

Inform their managers, supervisors and personnel of the "emergency procedures" so that they may provide the leadership and control required.

These training sessions shall be documented and sent to the Contractor SHE Manager/DSHEM. The SHEM/DSHEM will monitor subcontractors' training activities to ensure that satisfactory standards are maintained.

Presentation and material to be used during the training, whenever possible should be in line with Delphi system presentations.

11.2.12. As-Built Report

CONTRACTOR shall prepare a Safety, Health and Environmental (SHE) As-Built Report and submit to PTTLNG/PMC for review and approval soon after the Construction Phase and prior to commissioning the overall facilities.

The SHE As-Built Report will include, as a minimum: a description of PROJECT environmental setting, SHE performance, statistics and KPI monitoring, SHE issues, incidents and aspects of construction by Phase, selected photographs (pre-construction, construction, and post-construction) showing activity, and any permits, approvals and documentation issued during the construction phases.

- **Deliverable:** SHE AS BUILT REPORT doc n. 122018-SPCC-C-SH-RPT-0006

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11.3. SHE Meetings

The following SHE Meetings will be performed startig by Construction phase until the end of the Project.

- SHE Committee Meetings
- EIA Committee Meeting
- Weekly SHE Meetings;
- Weekly Workforce Tool Box Talks;
- Daily Job Specific SHE Talks;

11.3.1. SHE Committee Meeting

The Site SHE Committee, comprising CONTRACTOR, PTTLNG and Main SUBCONTRACTORS, will be established to jointly plan, control and monitor the SHE at the site.

The committee will be led by the CONTRACTOR Project Management.


The committee includes the following members at site:

- PTTLNG Representatives
- Project / Site Management
- SHE Manager
- Main SUBCONTRACTORS' Site Managers and SHE Manager

The major functions of the committee are as follows:

- Review the SHE Activities Planned & Implemented for effectiveness.
- Establish detailed, common Health, Safety, Security and Environmental activity targets and actions necessary to achieve those targets.
- Plan and conduct site SHE events and activities for the motivation and awareness of all employees.
- Review SHE performance and statistics of all participants. Evaluate the causes and consequences of poor performance. Make public the results to all personnel.
- Disseminate information on all Site incidents involving Health, Safety and Environment, and near misses, including any root cause analysis performed, actions taken, and lessons learned (i.e. incident reporting).
- Study necessary measures for improvement.
- Identify hazardous activities and co-ordinate necessary measures among the parties involved in the work.
- Identify items to be monitored
- Conduct safety patrols to audit and inspect all areas.
- Review and issue the results of audits and inspections and discuss necessary measures for improvement.
- Discuss safety orientation and training.

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- At least once per year, review the adequacy of the Project SHE objectives and target and the suitability and effectiveness of the SHE MS.

The Safety Committee will generally meet monthly or more frequently if needed with, as reference, the following standard agenda:

- Review of previous minutes of meetings;
- Review of results of joint inspections and actions taken;
- High risk activities;
- Current activities and problems;
- Accident review and corrective actions taken;
- Future activities.

For compliance to THAI Law and the EIA:

- **SPCC shall act to comply with the Thai law for the SHE Committee in the CHAPTER-2, CLAUSE 23 of the Ministerial Regulation on the prescribing of standard for Administration and Management of Occupational Safety, Health and Environment B.E. 2549.** Minute of SHE Committee Monthly Meeting (MoM) shall be submitted together with the Safety professional report to the Labour Dept on every quarterly.

EIA monthly Committee meeting shall take place as specified into the approved EIA, it consist of representative from Communities, Government agencies, it's organized by PTTLNG, however the Chairman will be appointed from EIA Committee the and supported for the organization by CONTRACTOR and EIA's SUBCONTRACTOR.

11.3.2. Weekly SHE Meeting

During this meeting, CONTRACTOR and SUBCONTRACTOR SHE depts. will plan and monitor the progress of the SHE activities implemented at site.

The presence of the site management could be requested depending the activities to be discussed.

The meeting will be commonly conducted once a week and minutes of the meetings distributed to the attendees, and CONTRACTOR and SUBCONTRACTOR site management.

Every SUBCONTRACTOR establishes a weekly Safety report to be delivered during the SHE weekly meetings, such report contains at minimum the following past week information:

- Worked hours
- Number of Lost Time Injuries - LTI
- Number of Restricted Work Cases - RWC
- Number of Medical Treatment Cases - MTC
- Number of First Aid Cases - FAC
- Number of Near Misses - NM

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- Number of SHE inspections, audits
- Number of Safety Hazards & Observations Cards (SHOC)
- Number of SHE induction performed
- Number of Tool Box Meetings
- All information about significant events which occurred during the week.

The weekly Safety reports will be consolidated every month into the monthly Safety report, which will be communicated according to a distribution list established for the project.

Subcontractors are required to submit to DSHE Manager the safety statistics as per ANNEX 1 by 1st day of each month and provide update on weekly base.

In the weekly SHE meeting it will be also updated the status of follow-up actions and will be provide co-operation and all requested information to assist in the investigation and preventive action of any accident or incident.

All statistical data continuously captured along the project are monitored and analysed by the various SHE committees and compared to the targets. These reviews can lead to preventive or corrective actions in order to improve adequacy or efficiency of the SHE organization, system and effective prevention.

11.3.3. Weekly Workforce Tool Box Talks (TBT)

The weekly Workforce Tool Box Talk meeting will be addressed to the whole workforce with the aim to discuss general safety matters potentially affecting the whole work group.

TBT should not exceed 15 minutes, and will be held at the beginning of the week prior to dispersing the workforce into smaller crews to commence work.

CONTRACTOR and Sub-CONTRACTORs Construction Superintendents/Supervisors/Foremen shall attend the Tool-Box Talk.

11.3.4. Daily Job Specific SHE Tool Box Talks

A pre-job specific meeting is the final review stage led by the foremen (if any, supported by SHE personnel) prior to the actual start of each crews daily work activity.


This meeting is held at the work face, and provides a good opportunity to make a last minute review of the safety procedures for the work to be performed.

The meeting will be conducted at least daily, and in any case, before each shift begin.

Based on the JSEA analysis previously performed, High-risk work phases and potential hazards can be highlighted and discussed to make sure everyone has a clear understanding of the precautions required and the role each person plays in performing the task safely.

Other personnel (middle management or supervision personnel) could attend the meeting, if required.

A written record will be maintained summarizing the main points of discussion.

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11.3.5. PROJECT MEETING RECAP TABLE

KOM With SUBCONTRACTORS	Prior to commencement of the works by the SUBCONTRACTOR, a kick-off meeting is carried out between CONTRACTOR, Partner and each of the SUBCONTRACTORS. Team members are Construction Project Manager, Construction Manager and SHE Management of each party and other Management representatives. One of the objectives of the kick-off meeting is to present : <ul style="list-style-type: none"> • Safety expectations and the specific SHE requirements of the Project • Site safety rules (including discipline) • Organizational requirements (meetings, audits/inspections, notifications, etc.)
Quarterly upon Site opening PMT Meeting	PTTLNG, CONTRACTOR and SUBCONTRACTOR Project Managers conduct a Site visit and then meet to discuss the main following issues: <ul style="list-style-type: none"> • Communicate to personnel stimulating but reachable objectives • Promote SHE culture and behavior • Create and evaluate the efficiency of the SHE organization in place • Review the global efficiency and the SUBCONTRACTOR's performances and encourage proactive indicator development • Share feedback and lessons learned sharing amongst the different parts of the Project.
Site SHE Monthly Meeting	Management Committee with PTTLNG and SUBCONTRACTORS: CONTRACTOR Site SHE Manager sets one meeting per month with SHE representatives. These site-based SHE meetings shall be utilized to: <ul style="list-style-type: none"> • Review and discuss SHE performance and accomplishments for the previous period and activities planned for the upcoming period. • Provide a forum for PTTLNG feedback regarding the performance and expectations of CONTRACTOR SHE performance. • At every meeting, SUBCONTRACTORS' management representatives at the work location shall be invited and shall present their SHE performance and accomplishments for the previous period and activities planned for the upcoming period.
Weekly Site SHE Meeting	CONTRACTOR (Site Manager, Construction Manager, SHE Mgr.), SUBCONTRACTORS (local Manager, senior SHE supervisors) and PTTLNG (Construction Manager, SHE Manager) are discussing the following items: <ul style="list-style-type: none"> • SHE program • Two weeks activities look ahead prior to their commencement • The good understanding of SHE principles by the entire workforce

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	<ul style="list-style-type: none"> • The progress of the SHE culture and feedback from the personnel • Current SHE issues and events • Potential hazards, Near Misses, Incidents and related actions to be taken
Tool Box Meetings or Tool Box Talks (TBT) (1)	<p>1) Weekly TBTs : work site conducts weekly Tool Box Meetings (often referred as Tool Box Talks) with employees and their immediate supervisor/foreman to discuss the following issues:</p> <ul style="list-style-type: none"> • Review of actions items from the previous meeting • Incidents and near misses occurred during the period; remedial action taken • Problems employees may be experiencing in execution of a given task • New activities planned for the coming week • Review of any JSEA applicable to any task performed on regular basis • Supervisors and foremen have the opportunity through this meeting to issue recognition awards to meriting employees • Specific prevention topic, for instance: Manual handling, lifting, electricity, Work at Height. <p>2) Pre-Job Meeting :The supervisor conducts the Pre-Job Meeting with his crew prior to starting the day or shift activity and uses the following broad format :</p> <p>Review previous day's safety effort and outcome by asking questions:</p> <ul style="list-style-type: none"> • "How did we do yesterday?", "were there any incidents?" • "Was the correct equipment available to allow the work to proceed safely?" • "Did the equipment operate correctly?" • "Did the work progress as planned?" • "What brought about any changes to the plan?" • Briefly overview today's tasks, focusing on what safety hazards may be faced. • Discuss in detail, the foreseen hazards and the planned control measures for these hazards – refer to Pre-job checklist and get employee input and involvement. • Finish the meeting with a positive and encouraging comment. Employees are encouraged to make comments and suggestions. • Prior to starting a new job, simultaneous operations, or hazardous operations , or all non-routine , or any work requiring a PTW a pre-job meeting is conducted with all personnel present involved in the operations.

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11.3.6. Other Meetings

If necessary, under CONTRACTOR evaluation, other Meeting could be held in order to assure the correct disclosure of all the SHE aspect or issue and the proper coordination of the activities.

11.3.7. PTW Coordination Meeting.

According to the provisions of the PTW System procedure, as described in the specific SHE Construction Manual, a relevant PTW Coordination Meeting will be held.

11.4. Permit To Work System

In the areas directly impacted by *Construction, Pre-Commissioning and Commissioning* activities, CONTRACTOR will use *his own PTW system*.

The CONTRACTORS' Permit to Work System is designed to ensure that a safe environment is achieved by providing management control over the various work activities which may be potentially hazardous.

CONTRACTOR Permit to Work procedure will be issued by CONTRACTOR prior to work inside the Construction fenced areas.

More details will be given in the 122018-SPCC-C-SH-PMT-0012 Work Permit Program

Important note

The above indicated doc n. 122018-SPCC-C-SH-PMT-0012 Work Permit Program shall be valid until the introduction of hydrocarbon.


CONTRACTOR shall take special precautions as work changes from construction through to PERFORMANCE ACCEPTANCE and take account of the additional risks posed by hydrocarbons being introduced into TERMINAL. This shall include enhanced site induction SHE meetings, "permit to work" system, control of personnel, segregation of areas, and emergency response. CONTRACTOR shall update all relevant procedures and work practices and carry out SHE reviews to reflect the change in working stage. This shall include the stages following construction and pre-commissioning and commissioning.

One (1) month before the date that hydrocarbon is introduced, CONTRACTOR shall submit its work permit system to PTTLNG/PMC for review and approval.

In all cases, conditions stipulated in the permit must be strictly adhered to. Permits to Work can be withdrawn anytime if it is so proved that conditions stipulated are not adhered to. CONTRACTOR shall ensure a sufficient supply of safety equipment as required by Permit to Work. In any case, where work conditions deviate from those specified or intended, or when the danger signal or fire siren sounds or a clearly unsafe condition exists, e.g. a distinct smell of gas leak, etc., all WORK

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must be stopped until safe conditions are again assured and permits re-issued. In these instances, CONTRACTOR may be required to evacuate its personnel and equipment.

More details will be given in the 122018-SPCC-C-SH-PMT-0002 Permit to Work Program for Commissioning and SU.

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11.5. SHE Initiatives And Communication Means

11.5.1. SHE Alerts/Bulletins

In order to share SHE awareness and information with the entire Site Team, SHE Alerts/Bulletins will be occasionally spread out, also by mean of mailing list, on topics related to the Project (e.g. Accidents and Near Miss, new SHE procedures issued, etc.) or related to other Sites/Projects.

11.5.2. Notice Board

SHE Notice Board made available at Site in order to assure proper communication and awareness for those people that don't have access to the mail service.

The Notice Board will contain information regarding SHE Policy, Emergency Numbers, Training Program, SHE Services, SHE Alerts, etc.

11.5.3. SHE Incentive / Discipline Scheme

CONTRACTOR will establish both a disciplinary and safety incentives program to curb unsafe or hazardous acts and behaviors and reward safe and team oriented PROJECT personnel. Further details within SHE procedure doc. N. 122018-SPCC-C-SH-PR-0002, moreover it's established and communicated to the PROJECT personnel during induction and when possible to the SUBCONTRACTORS at Kick-Off Meeting.

SHE incentives schemes or challenges are implemented to motivate all workforce including SUBCONTRACTORS to work safely and in an environmentally friendly manner, and to raise the SHE awareness of the workforce. Personnel receive awards based on their personal leadership on safety or on best Safety Hazard Observation Cards issued.

In addition, incentive schemes are developed to encourage the SHE awareness of the workforce and foster open incident and near-misses reporting. This Incentive scheme, along with a transparent and fair disciplinary procedure, improves the SHE culture of the workforce.

The incentive program can include the implementation of a suggestion system to allow personnel to offer a safety suggestion, identify an issue or concern, or recognize a co-worker. The suggestion forms are turned to the site SHE Manager for review, prioritization, and capture. Action items resulting from forms are logged, tracked to resolution, and communicated back to

11.5.4. PROJECT PENALTY REQUIREMENTS

The Project operates under a "Just Culture" which places individual accountability on employee's actions by defining the lifesaving safety rules and general project safety culture which must be respected by all.

As examples, the following behaviors will be cause for disciplinary/penalty action:

- Violation to the Life Saving Rules

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- Performing work under the influence of drugs or alcohol and/or possession of alcohol and drugs.
- Act of violence against people or willful damage to equipment/property.
- Violation of the Safety road transportation Law and Code
- Violation of speed limit at site
- Disregard towards the safety of PTTLNG or fellow workers.
- Significant economic harm to the Project.
- Failure to report incidents or risk exposures.
- Smoking in a non-smoking area.
- Violation to SHE rules.
- Horseplay or practical jokes.
- Failure to wear the correct PPE, improper use of safety equipment.
- Failure to comply with PTW, safety procedures/instructions, qualifications.
- Gambling, hunting, fishing.
- Other unacceptable acts or behaviors may be prohibited to reflect cultural values of local communities and Thai society in general.

11.5.5. SAFETY INCENTIVES PROGRAMS

SHE incentives schemes or challenges are implemented to motivate all workforce including SUBCONTRACTORS to work safely and in an environmentally friendly manner, and to raise the SHE awareness of the workforce.

Personnel receive awards based on their personal leadership on safety or on best Safety Hazard Observation Cards issued.

In addition, incentive schemes are developed to encourage the SHE awareness of the workforce and foster open incident and near-misses reporting. This Incentive scheme, along with a transparent and fair disciplinary procedure, improves the SHE culture of the workforce.

The incentive program can include the implementation of a suggestion system to allow personnel to offer a safety suggestion, identify an issue or concern, or recognize a co-worker. The suggestion forms are turned to the site SHE Manager for review, prioritization, and capture. Action items resulting from forms are logged, tracked to resolution, and communicated back to the workforce.

PTTLNG/PMC may elect to participate in such program.

Recognition programs provide a structured means to periodically reward (typically on 3 monthly base) and recognize those personnel who have contributed in making the worksite safer.

Working safely is seen as a condition of employment, therefore awards will not be directly linked to the expected safety behavior.

All personnel are encouraged to actively take part in the schemes.

The Safety Awards distributions are organized weekly or monthly and are based on merit, active participation, and the achievement of pro-active safety performance targets; such as:

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- Near Miss/ Safety Observation Unsafe Act/ Condition Reporting
- Safety Initiatives/ Suggestions
- Displaying safety consideration to fellow workers

The rules and criteria defining this scheme are described in the "Project Safety Award Procedure" to be issued after contact award.

Project works closely with CONTRACTOR (and PTTLNG if applicable) to choose the most appropriate safety awards.

The awards are presented in presence of the PTTLNG/PMC and CONTRACTOR Site Representatives.

Please refer to the SHE Procedures Doc 122018-SPCC-C-SH-PR-0002

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11.1. SHE Inspections and Audits

11.1.1. General

Scope of this activity is to verify, during the whole PROJECT life-cycle, the correct implementation of the SHE Management System and to evaluate the overall PROJECT SHE performance, for which the PROJECT Director (PD), Site Manager (SM) and SHE Manger (SHEM) are responsible.

The SHEM will assist the auditors in their activities and help manage possible recommendations in order to properly address them.

Audit results will be documented in dedicated Audit reports and shall include good points, corrective action requests and recommendations, and shall be reported to CONTRACTOR Management in a timely manner.

Corrective actions shall be implemented and their effectiveness verified.

During the audit, the CONTRACTOR monitors the compliance of the PROJECT activities, carried out by CONTRACTOR itself, by SUBCONTRACTORS and/or Vendors, with: Weekly Management Safety Walks.

At least once a week, a site inspection tour will be conducted by the CONTRACTOR and SUBCONTRACTOR Site Management, SHE and Construction representatives, in order to identify and ensure the accomplishment of the necessary organizational measures necessary to solve any SHE issue that has not been solved by the lower supervision levels.

At the end of the inspection a briefing will be conducted among the participants in order to agree an action plan and identify the necessary resources in order to solve the found issues.

11.1.2. SHE Inspections

The site SHE staff is entitled to perform SHE tours on a regular basis, to confirm compliance with safe methods of work. In these checks the SHE can also use checklists based on the risk assessment of each job.

The frequency will be evaluated and established by SHEM depending on the following factors:

- Size of the inspected area.
- Number of people working.
- Kind of activities carried out in the site.
- Skill and experience of the operatives.
- Frequency of accidents/incidents/near misses.

Anyway at least once a week, a site inspection tour (Safety Patrolling) will be conducted by the PTTLNG/PMC, CONTRACTOR and SUBCONTRACTOR Site Management, SHE and Construction representatives, in order to identify and ensure the accomplishment of the necessary organizational measures necessary to solve any SHE issue that has not been solved by the lower supervision levels.

At the end of the inspection a briefing will be conducted among the participants in order to agree an action plan and identify the necessary resources in order to solve the found issues, remedial actions to remove any dangers, and make working places safer, will be put in place by the relevant department/SUBCONTRACTOR..

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Moreover the inspection is also an opportunity to share the actions taken and improvement achieved.

For the piece of Equipment inspection a specific register for each piece of equipment shall be used and the inspection must be provide by competent and trained Inspector once a month, after the inspection the inspector shall also put the sticker for the colour coding system.

Type # Frequency	Visit / Inspection Scope	Visit / Inspection team members
Management SHE Visits # Yearly (minimum)	Visit of any zone and observation of housekeeping status, visible equipment state, safety rules compliance for equipment and persons, work permit and environmental compliance. These visits give an occasion to communicate with work teams to show commitment and to check SHE awareness.	Visit conducted by the Line or Project /Site/ Vessel Mgr. + person responsible for the area (constr. Mgr., CONTRACTOR and SUBCONTRACTORS supervisors) + SHE rep.

The Management SHE visits are generally scheduled at short notice according to the travels of the Managers for the business on the site.

Type # Frequency	Visit / Inspection Scope	Visit / Inspection team members
Weekly Site Management Inspections (or safety patrolling or safety tours) # Weekly (minimum)	Visit of work areas; interviews of supervisors and employees to assess the efficiency of communication; checking of a sampling of inspection and incident investigation reports; PPE compliance, etc. Recommended frequency = weekly	At least a PTTLNG/PMC member + area or discipline Mgr. + site SHE management. Occasionally members of the PMT when they are coming on the site.
Medical & Hygiene Inspections # Monthly	Inspection of Hygiene in social premises, catering facilities, accommodation, etc. Inspection of equipment and medicine available in clinics, ambulance, etc.	Site Medical Team
Equipment inspections # According to legislation & guidelines	Use of checklists specific to the different types of equipment: lifting, piling, diving, marine vessels, compressed air, marine vessels, vehicles, electrical installations and grounding, hand tools, working at height equipment, etc.	Supervisor or SHE competent for the type(s) of equipment to be checked together with the inspector qualified by Law
Supervision Team Inspection # Weekly	Inspection of the work areas, of the checklists completed, checking of equipment and materials; observation of employee behaviors; interviews to assess Toolbox and JSEA effectiveness; review of incident investigation reports; identification of	One site SHE team member + area supervisors (including SUBCONTRACTOR)

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	anomalous situations	+ system leaders for CCA during Commissioning.
Environmental Inspections # Weekly	Inspection of all the site areas: effectiveness of the wastes sorting and storage ; application of dust control ; containments in place, pollution traces, seashore aspect, applicable EIA mitigation measure etc.	Environmental supervisor.
SHE daily inspection 1# During the day/shift	Inspection with checklists prepared by the Site SHE team about the main risks associated to the works in the area (s) inspected.	Site SHE team member(s).
2# End of day/shift	To ensure that all work areas are secure and at minimum: <ul style="list-style-type: none"> • All equipment is stopped and switched off, • Collective protection equipment is in place, • All personnel is off, • The work areas are left clean and in order. 	SHE Supervisor or Officer of each SUBCONTRACTOR checks their own work area(s).

Inspection forms have been reported within the SHE Manual for Construction

11.1.3. SHE Audits

Based on a project Audit schedule, the CONTRACTOR SHE Department will conduct audits of the work site, management system and status of compliance with the essential elements of applicable SHE practices, regulatory requirements, trends, results of previous inspections, accident/incident management, review of corrective action trends and progress.

In particular, as reference, the specific objectives of the Project SHE Audit are to verify:

- Respect of Laws and regulations;
- Responsibilities;
- Risk evaluation and management;
- Respect of the environment;
- Safeguarding of health;
- Competence and training;
- Emergency preparedness;
- Incident investigations;
- Inspections;
- General site conditions of construction areas;
- Project SHE documentation applicability;
- CONTRACTOR SHE organization;
- Project SHE procedure implementation;
- Follow up of previous recommendations.

Auditing will be performed by personnel not directly involved in the activities, also within the CONTRACTOR Organization, with the use of standard and specific check-lists; audit reports will define needed corrective actions in function of non-conformity highlighted during the inspection of the site.

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Deficiencies identified during the audit are reviewed and analysed to determine potential failures in the SHE Management System and to develop appropriate corrective actions.

Findings are discussed with site key personnel during a closing meeting.

Deficiencies are documented along with the corrective actions, responsibility for completion and targeted completion dates.

Ref procedure: 122018-SPCC-C-SH-PR-0013 SHE AUDIT Procedure

Type # Frequency	Audit Scope	Audit team members
CONTRACTOR SHE audits # Yearly (minimum)	Audit of worksite SHE-MS to check compliance with CONTRACTOR rules and standards	CONTRACTOR SHE Department auditors
Monthly EIA external Audit	As per Environmental Monitoring Plan, to ensure that compliance with environmental monitoring and mitigation measures as per EIA requirement	Third party (UAE)
Internal Project SHE-MS audit (*) # Yearly (minimum)	To assess the effectiveness of all the SHE activities and processes described in the Project SHE-MS. Can be split into 2 to 4 sub-audits looking at different processes (*) The audits are conducted at a minimum frequency of 1 / year, unless otherwise specified by the Project Manager, who can establish shorter intervals (for instance in case of an unsatisfactory performance).	Site Internal auditors
Medical Audits # Yearly (minimum)	Health Management system: to verify that the site is implementing and complying with the Health Plan	CONTRACTOR Medical Coordinator
Environmental management audits # Bi-annual (minimum)	Audit of the Environmental system: compliance with procedures / plans, effectiveness of the monitoring plans, of the environmental surveillance. Can be combined with the Internal Site SHE-MS audit.	One construction team member + SHE Mgr. or DSHE Mgr.
OHSAS 18001 audit # Yearly (maximum)	In the context of the OHSAS 18001 each project is able to be chosen by the certification body for performing a SHE-MS audit	Third Party auditors
PTTLNG Audit & safety Assessment # PTTLNG's Audits	Different types of audits / inspections can be carried out by the PTTLNG.	PTTLNG's team generally assisted by the CONTRACTOR Site SHE Management.

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11.2. INCIDENT Reporting, Investigation & Follow-Up

Serious incidents and injuries will be immediately reported to the CONTRACTOR Management and **PTTLNG/PMC** and immediately investigated.

CONTRACTOR will ensure that an immediate oral report is made to the **PTTLNG/PMC** Representative in the case of:

- fatal Injuries;
- injuries requiring medical attention, which may or may not result in lost time;
- damage, in any amount, to PTTLNG equipment or property.

It is the duty of CONTRACTOR's and SUBCONTRACTORs to notify the SHE Management at site of any accident or incident immediately.

For accidents involving fatalities, lost time injury, medical treatment case, restricted work case, or damage to PTTLNG equipment or property, a preliminary report will be submitted to **PTTLNG/PMC** representatives. After investigation a final report will be submitted as well.

CONTRACTOR shall report to PTTLNG/PMC immediately on the occurrence of any injury to its employees, or SUBCONTRACTOR employees, incident or damage to equipment or Terminal, including near misses within twenty-four (24) hours of the occurrence. A detailed written report of incident shall be presented to PTTLNG/PMC within the next working day, with proposed measures to avert such incidents or occurrences. Accident and incident management shall incorporate PTTLNG/PMC's Key Performance Indicators (KPIs) requirements.

CONTRACTOR will update in the weekly SHE meeting on the status of follow-up actions and will co-operate and provide all requested information to assist in the investigation and preventive action of any accident or incident.

Written reports will be prepared and submitted according to a specific CONTRACTOR procedure Incident Notification and Investigation doc n 122018-SPCC-C-SH-PR-0014

CONTRACTOR shall incorporate accident/incident records in SHE monthly report to PTTLNG/PMC.

Register and records of all incidents involving WORK shall be maintained to assess SHE working performance and the need to introduce additional controls.

11.3. SHE Performance and Reporting

SUBCONTRACTORS are required to update statistics every week during the Weekly safety Meeting in accordance to the annex 1.

On a monthly basis the CONTRACTOR SHE Team will prepare a report to be issued within the 3rd day of each month to PTTLNG including safety statistics, details of any hazardous incidents and activities relating to environmental aspects and EIA requirement.

For details relevant to the Environmental reporting please refer to the Environmental Management Plan issued for the PROJECT doc n. 122018-SPCC-C-SH-PR-0031.

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11.3.1. IMPLEMENTATION AND MONITORING

Safety Statistics record keeping and reports

The DSHEM collect all SUBCONTRACTORs "Monthly Safety Statistical Reports" analyze all the information and fill the same form in SHE Monthly Report considering the totality of man-hours and recordable cases during the month, complete and provide the SHE Monthly Feedback at the close of each month to the SM and to the SHE Head Office.

Project SHE reporting for EIA compliance

Each SUBCONTRACTOR SHE Manager shall complete and submit the "Monthly Safety Statistical Report" (Annex1 of the present Plan and the 122018-SPCC-C-SH-RPT-0037) to the DSHEM at site first day of each month.

Safety performance will be analyzed every month considering in the Monthly SHE report (122018-SPCC-C-SH-RPT-0037) the Indicators and the Pro-active indicators.

In case result are not satisfactory additional action will be required to improve the site conditions.

SUBCONTRACTOR requirements

SUBCONTRACTORS have responsibility for the SHE of their operations irrespective of whether carried out by themselves or others.

SUBCONTRACTORS shall either:

- issue and keep up to date their own SHE Construction Plan that shall be in compliance with this document. All SUBCONTRACTORs shall comply with the most stringent of this document and their SHE Construction Plan; or
- fully adopt and comply with the requirements of this SHE Plan for Construction as if their own and other way improve with comments;
- provide specific SHE procedures (work instructions) for the works using procedures in this plan and into the SHE Construction Manual (SHE procedures for Construction as reported associated with the SHE Manual for Construction). SUBCONTRACTORS must also comply to the SUBCONTRACTORS SHE Requirements 122018-SPCC-C-SH-PR-0020.

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11.4. OTHER SHE Aspects

11.4.1. Management Of Work Interferences

In case multiple works shall be carried out in the same area and are in some way interfering, in order to minimize the risk following step, shall be followed:

- a coordination meeting shall be arranged, interferences shall be pointed out and eventual additional safety measures planned. In case there isn't any chance to reduce the additional risk consequent to the work interference, works shall be shifted;
- a Work Permit shall be issued;

Depending on the interference typology following solutions could be considered applicable:

- one work activity will be interrupted up to the other will be completed;
- area will be fenced and signaled, inside this space nobody will be authorized to carry out any other activity, as in case of the lifting activity;
- apply collective protection;
- safety distances shall be respected;

All Construction and SHE Supervision shall be made aware and trained concerning the correct management of the works interference and in case of highlighted issue the Construction shall appoint a Superintendent as SIMOPS Coordinator (Simultaneous Operation).

11.4.1.1 Simultaneous Operations (SIMOPS)

Contractor has noted that, at certain stages, the execution of Work may take place in areas shared with PTTLNG's personnel and other Contractors /Subcontractors.

Work shall be performed simultaneously and may result in a high concentration of manpower in particular area.

During these periods, particular attention shall be paid to SHE conditions, both within the areas of Site and at the interface with adjoining areas. In addition Contractor shall be required to liaise with neighbouring workforces at management level and agree on procedures to regulate Work where interaction or SIMOPS may take place.

The Project Management Team must be aware of all the activities managed at the same time on the site and therefore can identify and anticipate possible co-activities or simultaneous operations (SIMOPS). A particular attention is paid to possible co-activity between construction works and operations of a live installation or plant area.

The SHE Manager establishes with the SIMOP Coordinator a specific SIMOPS plan or procedure which is endorsed by the Construction Manager and the Commissioning Manager.

- Deliverable: Simultaneous Operations procedure doc n. 122018-SPCC-C-SH-PR-0015

11.4.2. Occupational Hygiene

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CONTRACTOR and SUBCONTRACTORs will put in place work methods and procedures to monitor the status at least of the following Occupational hygiene issues:

- Handling of chemicals;
- Dust monitoring;
- Noise;
- Vibration;
- Hygiene;
- Thermal comfort.

Further details will be provided in the 122018-SPCC-C-SH-PR-0030 SHE Manual for Construction and into the approved EIA.

11.4.3. Alcohol And Drugs

CONTRACTOR is committed to making the working and living environments under its direct control healthy and safe. Such environments include all sites, structures, installations, vehicles and equipment owned, rented, leased or managed by CONTRACTOR.

In accordance with its SHE Policy, CONTRACTOR puts its greatest attention in protecting the health of its own employees and the safety of its own activities. Therefore the abuse of alcohol and drugs is absolutely prohibited in the premises of the Project. These abuses can result in damages to the health of a person, as well as to the properties of the PTTLNG whether it be a conscious or an unconscious act by the people concerned. In order to monitor the compliance with its policy of zero tolerance, CONTRACTOR carries out regular post-accident, based on reasonable suspicion, and critical activities D&A tests. The regular tests are part of the pre-employment and periodical fitness examinations, which each employee is due for on an annual basis, and aim to determine the presence of the following substances: Alcohol, Methamphetamine, Morphine, Cannabis, Amphetamine, Cocaine, and Benzodiazepine. Employees that reacted positive to any of these substances are not certified fit for work. The other tests will be conducted on all work sites if there is no discrepancy with the local legislation that treats this subject. In order to define the process of Drug & Alcohol testing on work sites, CONTRACTOR has developed a work instruction "alcohol and drug testing". This procedure is applicable to all work sites and to all employees, for High risks activities and random testing.

In order to ensure that all employees are aware of the health and disciplinary consequences of alcohol and drug use and abuse CONTRACTOR organizes information sessions aiming to enhance their knowledge on the issue. As part of its health promotion initiatives, CONTRACTOR also could develop and distributes leaflets with accurate, easy to understand, comprehensive information on the health effects of drug and alcohol use and abuse.

11.4.4. Smoking

Being aware of the enormous harmful potential of the habit of smoking, CONTRACTOR is committed to take all possible appropriate measures to induce decrease in smoking on the worksites, in order to maintain a good working and living environment and avoid discomfort, diseases or accidents caused by smoking. The approach methods are:

- organizing awareness campaigns
- discourage smoking by implementing no-smoking policy in all office areas
- placing signs wherever smoking is forbidden
- verifying whether they are obeyed.

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11.4.5. Driving Risks

All CONTRACTOR and SUBCONTRACTOR personnel who intend to drive for the Project must hold an appropriate and valid driving license for the vehicles, plant or equipment to be driven.

Local driving rules will be strictly followed by anyone who drives vehicles; in addition Construction Site and Plant rules will be followed.

CONTRACTOR shall maintain and enhance the awareness of safe driving among its employees and SUBCONTRACTOR's employees and will provide vehicles in good operating condition.

Where applicable, CONTRACTOR must ensure that its employees, and the employees of SUBCONTRACTORS, receive adequate driving instruction and that visible steps are taken to maintain a safe standard of defensive driving.


- Vehicles shall be fit for the purpose, regularly inspected and well maintained in accordance with good driving practices.
- All seats of all vehicles must be equipped with seat belts at least 2 with a conversion for new vehicle equipped only of three fixed-point type.
- Vehicles with roofs, which cannot withstand a rollover, should be fitted with roll bars.
- Vehicles used for isolated areas shall be equipped with survival kits comprising a two-way radio, drinking water, first aid kit, etc.
- No unauthorized usage of transport shall be tolerated by CONTRACTOR or SUBCONTRACTOR staff. The nominated Work Safety and Health Officer(s) should ensure that all forms of transport are correctly fitted with the appropriate safety equipment.

CONTRACTOR and SUBCONTRACTORS shall undertake to ensure that all drivers comply with the following basic rules:

- Possess a valid driver license;
- Always wear a seat belt;
- Always observe traffic rules, especially speed limits;
- Never drive after consuming alcoholic drinks or certain medicines/drugs;
- Never drive when very tired;
- Take regular stops when driving long distances;
- Be sure that the vehicle is properly maintained and in good condition for the planned journey;
- Never overload the vehicle; and,
- Drive defensively.

CONTRACTOR and SUBCONTRACTOR must assure to have an:

- 1) Assessment completed on the experience for drivers, according to the type of vehicle they drive;
- 2) Two point safety belts are still accepted on buses and minivans, however, each new contract with passengers transportation companies and purchase contracts of passengers vehicles shall contain the requirement of three point safety belts on all seats.

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The speed limit on all work sites 20 Km/h, in neighbored roads out of the site 30Km/h, in public roads less than 80Km/h as stated within the EIA, and populated areas should be announced and posted for passenger and material transport vehicles.

CONTRACTOR and SUBCONTRACTOR's driver couth by police on the public road violating traffic rules will be immediately dismissed by PROJECT; at site in violation of traffic rules, shall be punished with a project fine of 15000THB and if an incident will result from the violation the immediately dismissed by PROJECT.

11.4.6. Stop Work Authority. Unsafe Conditions & Acts

It is important to note that, as indicated in the SHE policy, CONTRACTOR, PTTLNG and SUBCONTRACTORS are entitled to stop any activity if it is believed to involve any hazard. This "Stop work authority" is granted to all project personnel.

Non-compliance with the requirements of the SHE Management Plan(s) shall be considered as misconduct for which PTTLNG or its Project Management Consultant (PMC) shall have the right to require CONTRACTOR to remove offending personnel from Site. In certain cases, PTTLNG/PMC may suspend work that is considered by PTTLNG/PMC as unsafe, until compliance with safety regulations has been re-established.

On the request of PTTLNG/PMC, any unsafe operation/practice by CONTRACTOR or its SUBCONTRACTOR shall be stopped immediately and rectified at CONTRACTOR or its SUBCONTRACTOR cost to the satisfaction of PTTLNG/PMC. For such suspension of Work, CONTRACTOR is not allowed to claim the delay of the planned schedule.


If, during the execution of Work, conditions at a particular location within Site are deemed unsafe by CONTRACTOR, he shall notify PTTLNG/PMC immediately.

PTTLNG/PMC shall be responsible for verifying that Site is safe before Work recommences.



11.4.7. LANGUAGES REQUIREMENTS

The language difficulties with the multinational workforce are identified and the worksite ensures information is provided in a manner that can be understood by all concerned. Worksite utilizes multiple meetings and multiple languages if required to assure effective communication with each audience.

- The PROJECT Language is English for PROJECT documents and all managers.
- Thai will be used where needed to communicate with workforce.
- In particular, safety booklets, jobsites signs & road signs, **Permit to work forms** will be bilingual in Thai & English.

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Annex 1 – CONTRACTOR'S SAFETY REPORTING AND INDICATORS

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		CONTRACTOR INTERNAL - PRO ACTIVE INDICATORS			
12. Month: Year:		Company:		Total since beginning Project / (SPCC)	
5 PRO-ACTIVE INDICATORS		4 Project / Site /		16. Monthly total (SPCC & Subcontractors)	
13. GENERAL SUMMARY		14. Monthly total (SPCC)		15. Monthly total (Subcontractor)	
No. of SHE Training Hours					
No. of Senior management SHE Visits					
No. of Toolbox Talks					
No. of Job Safety Environmental Analysis					
No. of SHE Meetings					
No. of SHE Inspections					
No. of Safety/Hazard Observation Cards					
NOTE:		Deputy SHE Manager			
				

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CONTRACTOR INTERNAL SAFETY INDICATORS	
17. Month: Year:	Company: Project / Site / Date:
18. GENERAL SUMMARY	20. Monthly total (SPCC)
19. SAFETY INDICATORS	21. Monthly total (Subcontractor)
Average Manpower	22. Monthly total (SPCC & Subcontractor)
Total Worked Manhours	Total since the beginning of Project / year* (SPCC)
No. of Fatal Accidents	Total since the beginning of Project / year* (Subcontractor)
No. of Lost Time Injuries	Total since the beginning of Project / year* (Subcontractor)
No. of Work Restricted Cases	
No. of Medical Treatment Cases	
No. of First Aid Cases	
No. of Commuting Injuries	
No. of Near Miss	
No. of Lost Workdays	
No. of Restricted Workdays	
No. of Road Traffic Accident (RTA) Km Driven	

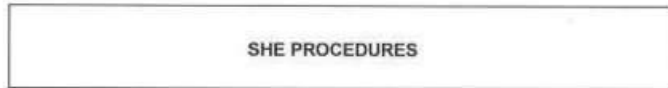
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Lost Time Injury Frequency Rate (LTIFR)	
Total Recordable Frequency Rate (TRFR)	
Severity Rate (SR)	
NOTE:	
Deputy SHE Manager	Site Manager

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SPCC Doc. No.: XA74-0000-002		Revision : F3	
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Doc. Class Z2

F3	IFF	06/12/2019	Issued For Final
F2	IFF	04/11/2019	Issued For Final
F1	IFF	23/04/2019	Issued For Final
R3	IFR	30/12/2018	Issued For Review
R2	IFR	30/06/2018	Issued For Review
R1	IFR	15/07/2018	Issued For Review
REV.	STATUS	DATE	REVISION DESCRIPTION
BY	CHK.	APPR.	

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SHE PROCEDURES		PTTLNG Doc. No.: 122018-SPCC-C-SH-PR-0002	
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Revision list:

Rev. Nr	Modifications:
R1	First Issue
R2	Issue for comment from client
F1	Issue for Final implementing comments from client and arranged according to the approved Project SHE Plan for construction
F2	Issue after SPCC internal review
F3	Issued after revised methodology for definition of safety zone during pneumatic pressure testing- SHE Procedures (Pneumatic Test) - page 242

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1 GENERAL

The purpose of this Procedure is to outline, describe and define the requirements for SPCC, as per PTTNG Health, Safety, Security and Environmental (SHE) management program and it's SHE & security policies to meet throughout the execution of the PROJECT.

The purpose of these safety and health requirements is to ensure compliance to regulatory requirements and to prevent incidents or events that could result in fatality, injury or illness to personnel and/or damage to environment or property.

SPCC (JV Saipem & CTCL) shall comply with all the applicable Health, Safety and Environment ("SHE") LAWS and PERMITS pertaining to safety, health, environmental protection and fire protection, which are applicable to the location, where the WORKS are being carried out.

SPCC will also comply at all times with the requirements, as set forth by the PTTNG in its Safety, Health and Environment Management System ("SHE MS"), policies, operating standards, WORKSITE SHE requirements, and any special instructions and all requirements stipulated in this CONTRACT.

These requirements are intended to supplement any safety and health requirements imposed by LAW with which the SPCC is obliged to comply. SPCC will also adhere to any safety and health procedures as may be imposed by PTTNG.

2 PROJECT SHE & SECURITY PLAN


PROJECT SHE & SECURITY PLAN which has to be submitted to PTTNG for approval within thirty days (30) days after COMMENCEMENT DATE and in any case prior to the commencement of any SPCC's activities on the WORKSITE. This document will be an umbrella document which will need to be supported by other SHE procedures.

SPCC will implement and maintain its own SHE procedures, work instructions and guidelines during the construction aspects of the WORKS.

The PROJECT SHE PLAN will be agreed with PTTNG prior to its implementation and will be subject to periodic audit by PTTNG. It needs to refer, as a minimum, but not limited, to the following elements of SHE management:

- ✓ Leadership and commitment;
- ✓ Policy and strategic objective;
- ✓ Organization, responsibilities, resources, standards and documents;
- ✓ Health management;
- ✓ Environment management;
- ✓ Safety & transportation management;
- ✓ SHE risk management / reviews;
- ✓ SHE training and familiarization;
- ✓ Prevailing LAWS and regulations;
- ✓ Planning and procedure;
- ✓ SHE management of Subcontractor;
- ✓ Process safety, safe operations, asset integrity;
- ✓ Management of change;
- ✓ Competence assurance;
- ✓ Incident management and emergency response;

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- ✓ Implementation and monitoring;
- ✓ Management review.

SPCC will need to develop a number of security & emergency response procedures, work instructions and guidelines in order to ensure the security and crisis management of the worksite.

3 REFERENCES

A. CONTRACTUAL


Applicable SHE documents of PTTNG:

PTTLNG'S References	Doc. N°
1602088-32016-CV-TS-003-F0	Specification for Drainage System
1602088-32016-GE-005-F0	PROJECT Reference Codes and Standards
1602088-32016-MG-TS-004-F0	Specification for Acoustical Insulation
1602088-32016-PM-GE-001-F4	PROJECT Procedures and Administrative Requirements (General PROJECT Requirement) Section 9, SHE
1602088-32016-PM-GE-008-F0	List of Documents to be Submitted During Detail Design for Each Discipline. Appendix F, Section 1.5 SHE
1602088-32016-PM-GE-015-F0	Site Safety and Security Procedure (Template)
1602088-32016-PM-GE-019-F0	Change Procedure
1602088-32016-PM-GE-028-F0	Environmental Impact Assessment (EIA), Appendix E-1
1602088-32016-PM-RPT-103-F0	PTT Environmental Management Plan
1602088-32016-PM-RPT-104-F0	PTT Personnel Protection
1602088-32016-PM-RPT-105-F0	PTT Environmental Specification
1602088-32016-PM-RPT-106-F1	PTT HSE Legislation
1602088-32016-PM-RPT-109-F1	PTT Corporate Worksite Health, Safety & Security
1602088-32016-PM-RPT-110-F0	PTT Corporate SH&E Pre-Qualification Expectations
1602088-32016-PM-RPT-111-F0	PTT Corporate Work Site Environmental Requirements
1602088-32016-PM-RPT-113-F0	PTT Safety and Health Management Plan

B. INTERNATIONAL CODES AND THAI LEGISLATION AND STANDARDS

International treaties
United Nations Conference on the Law of the Sea
Environmental, Health, And Safety Guidelines Liquefied Natural GAS Facilities – IFC - WB
Vienna Convention for the Protection of the Ozone Layer, including the Montreal Protocol and the London Amendment
Convention Concerning the Protection of the World Cultural and Natural Heritage or World Heritage Convention


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Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
Occupational Safety and Health Administration - OSHA


Thailand national Laws

Notification of Industry Industrial Effluent Standard B. E. 2560
National Environmental Quality Act BE 2535 (NEQA 1992)
Ministerial Regulation on the Prescribing of Standard for Administration and Management of Occupational Safety, Health and Environment in relation to Hazardous Chemicals, B.E. 2556 (A.D. 2013), Fire Prevention and Control, B.E. 2555 (A.D. 2012), Machines,
Ministerial Regulation on the prescribing of Standard for Administration and Management of Occupational Safety, Health and Environment B.E. 2552 (A.D. 2009)
Safety, Occupational Hygiene and Workplace Environment Act B.E. 2554 (2011) Ministerial Order No. 123/2555 re: Appointment of OSH inspectors to under the OSH Act 2011.
Notification of the Ministry of Labor concerning Specific Health Check-up for Employees Performing Works in relation to Chemical Risk Factors, B.E. 2552 (A.D. 2009)
Ministerial Regulation on the Standard for Administration and Management of Safety, Occupational Health and Working Environment in Relation to Construction work year/ 2009
Labor Announcement Regarding safety signs and safety symbol /year 2011
Labor Announcement Regarding PPE Standards / year 2011
Labor Announcement Regarding yearly equipment inspection / year 2011
Ministerial Regulation Regarding building control / year 2009
Law Ministerial Regulation on the prescribing of Standard for Administration and Management of Occupational Safety, Health and Environment B.E. 2549 (A.D.2006)
Ministerial Regulation, issued under the Factory Act
Factory Act BE 2535 (1992)
Public Health Act BE 2535 (1992)
Hazardous Substances Act BE 2535 (1992)
Oil Fuel Storage Act BE 2542 (1999)
LPC Storage Act BE 2538-2450 (1995 - 1997)
Fire Protection & Prevention Act BE 2542 (1999)
Building Control Act BE 2522 - 1979/ Building Control Act No. 2 BE 2535 - 1992 and Associated Ministerial Regulations.
Protective Measures for Operational Safety, Notification of Ministry of Industry No. 3 (BE 2542 - 1999) issued under the Factory Act.
Safety Standards for Chemicals by Department of Labor based on ACGIH standards
Occupational Noise Levels, Ministry of Industry Notifications (Document No.4, 1971)
Occupational Noise Levels, Ministry of Interior Notification (1976).
Lighting levels: Safety Standards for Lighting Labor Standard of the Ministry of Interior (1977).
Announcement of the Ministry of Industry on Requirement for Installation of Special Tools or Instruments in Various Types of Factories for Automatic Air Quality
Monitoring/Inspection from its Chimneys (BE 2544).
The Industrial Estate Authority of Thailand Port Regulations 1997 Concerning Port.
Affairs on Services, Facilities, Safety Control, Environmental Protection and Related Activities
Notification of MSTE (Ministry of Science, Technology and Environment) Ref EPA.
Standard for Determination of NOx, SOx and Particulate Emissions from Stationary Sources of Flue Gas dated 25/12/95.
Energy Conservation Promotion Act BE 2535 (1992).
The Industrial Estate Authority of Thailand (IEAT) and Eastern Fluid Transport (EFT)
Regulations in respect to the issue of permits and the associated health, safety and environment requirements.
Affairs on Services, Facilities, Safety Control, Environmental Protection and Related Activities
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Notification of MSTE (Ministry of Science, Technology and Environment) Ref EPA.
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Energy Conservation Promotion Act BE 2535 (1992).
The Industrial Estate Authority of Thailand (IEAT) and Eastern Fluid Transport (EFT)
Regulations in respect to the issue of permits and the associated health, safety and environment requirements.
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Notification of MSTE (Ministry of Science, Technology and Environment) Ref EPA.
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Energy Conservation Promotion Act BE 2535 (1992).
The Industrial Estate Authority of Thailand (IEAT) and Eastern Fluid Transport (EFT)
Regulations in respect to the issue of permits and the associated health, safety and environment requirements.

4 LANGUAGE

SPCC will develop procedures and instructions to ensure effective communications are in place to deal with any multi-lingual personnel employed at WORKSITE who do not understand and/or cannot communicate in English languages. SPCC will identify to PTTLNG its strategy for meeting these multi-lingual needs sufficiently in advance of commencement of the WORKS at the WORKSITE

C. General Obligations

- SPCC will provide to PTTLNG a copy of all reports made to government agencies or insurance companies relating to any Worksite accident, injury, or incident during SPCC's performance of the Work.
- Any Worksite-specific SHE requirement, which exceeds the minimum standards established by regulation, shall be incorporated into SPCC's SHE program/procedures.
- SPCC will attend a preconstruction meeting with PTTLNG to understand the project conditions and SHE requirements prior to starting Work at the Worksite. A Worksite tour shall be made to facilitate SPCC's awareness and understanding of potential hazards.
- Appropriate methods, equipment, devices, and material shall be provided by SPCC to ensure a safe workplace.
- SPCC's SHE Representative has the responsibility to translate site-or contract-specific activities and requirements into specific plans and procedures that provide direction for ensuring environmental protection requirements are met. This documentation shall identify, for each area of concern, specific actions that shall be taken and responsibility for their implementation. Actions shall be based on regulatory or other requirements tailored to the project and contract scope of Work and technical requirements. Required SHE documentation shall be developed and implemented prior to commencement of affected activities.

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D. Hazardous Substances


- SPCC will be responsible for immediately notifying PTTLNG in writing of any hazardous chemicals or substances that are brought on Worksite or cause to have been brought on Worksite. SPCC shall provide PTTLNG with a copy of SPCC's Hazardous Material and Communication Program and the Safety Data Sheet(s) (SDS [or equal]) for the chemical(s) or substance(s) intended for use on the Worksite. SPCC shall be responsible for keeping this information current. SPCC shall be responsible for maintaining a copy of SPCC's Hazard Communication Program and access to SDSs (or equal) on site for SPCC's own reference and employee training. All records shall be maintained at a location accessible to PTTLNG.
- The legal storage, use, and disposal of any hazardous chemical or substance, and the disposal of waste materials brought on Worksite by SPCC, shall be the responsibility of SPCC.
- SPCC employees shall be protected from inhaling hazardous substances in quantities that exceed national or international "allowable limits/exposure limits."

5 HAZID OF CONTRUCTIONS CRITICAL ACTIVITIES

SPCC will perform a HAZID prior to the commencement of the WORK in order to identify the critical fabrication activities where appropriate levels of management will be required to comply with SHE requirements. Typical examples of critical activities, which may require special SHE requirements at the WORKSITE include:

- ✓ Transportation of heavy equipment;
- ✓ Loading, unloading of heavy equipment;
- ✓ Lifting and installation of heavy equipment;
- ✓ Other equipment requiring lifting and transportation;
- ✓ Traffic management;
- ✓ Work at height during simultaneous operations ;
- ✓ Management of SPCC's specific WORKSITE;
- ✓ Coordination with OTHER SPCCS in accordance with the requirements of the SITE MANAGEMENT RULES;
- ✓ Fabrication activities and fabrication risks;
- ✓ Drainage systems;
- ✓ Crossings / bridges / roads / paths;
- ✓ Precautions and measures in place for flood conditions;
- ✓ All other issues raised as part of the HAZID.

If one HAZID session is insufficient for the SPCC's activities, then additional

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HAZID sessions shall be performed by SPCC and SPCC is obliged to invite PTTLNG to attend any HAZID session.
 SPCC's SHE Manager(s) and SHE Officers will ensure that all issues raised during all HAZID sessions as well as other critical fabrication matters raised throughout the performance of the WORK are followed-up and addressed.

6 PERMIT TO WORK SYSTEM (PTW)

The Permit to Work ("PTW") System constitutes a formal method of ensuring safe work practices or a specific activity with identified hazards. The work permit granted through the PTW System stipulates the safety and precautionary or risk control measures to be applied with reference to the specific procedure.

PTW System will be prepared by CONTRACTOR and issued to the SPCC and all OTHER SPCCS and shall cover all activities on the SITE. The typical activities, where the PTW System will apply, as a minimum, are:


- ✓ Work at height;
- ✓ Confined space entry;
- ✓ Electrical isolation & re-activation;
- ✓ Welding / cutting / machining;
- ✓ Painting and surface blasting;
- ✓ Excavation;
- ✓ Piling;
- ✓ Heavy Lifting;
- ✓ Scaffolding erection;
- ✓ Radiography work;
- ✓ Critical lifting ;
- ✓ Diving works
- ✓ Hot work (during COMMISSIONING and at locations near flammable materials).
- ✓ Prepare Critical Lift Permits and any required rigging designs.

The PTW System shall be organized, developed and controlled appropriately by CONTRACTOR to be in line with the PTTLNG SHE MANAGEMENT PLAN and fully applicable for each phase (e.g. CONSTRUCTION, COMMISSIONING etc.).

7 JOB SAFETY AND ENVIRONMENT ANALYSIS; JSEA

Prior to SPCC commencing Work at the Worksite, SPCC and all of its SPCCs will provide, for PTTLNG's review and non-objection, a detailed JSEA. This analysis shall identify the scope of Work, known and potential hazards, and corrective measures

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and controls that shall be implemented to abate these hazards.

SPCC will ensure that all of its line supervisors fully understand the potential hazards involved in those aspects of the WORK under their supervision and that safe practices, safety precautions or actions to be followed in respect of the same and SPCC shall ensure that its line supervisors communicate these issues to all personnel involved in each activity forming part of the WORK prior to commencement of each activity forming part of the WORK.

SPCC will ensure that all JSEA carried out during performance of the WORK will be reviewed and approved by SPCC's SHE Representative and PTTLNG's designated SHE Manager. SPCC shall pay special attention to the critical activities of transportation, fabrication, construction, and COMMISSIONING, in addition to interface with the OTHER SPCCS.

Before assigning personnel to any activity forming part of the WORK, SPCC shall carry out a JSEA for such activity.
 The JSEA plays a significant role for the risk assessment of the various activities being carried out by SPCC at the WORKSITE and SPCC shall ensure that its results; together with outcomes and conclusions are communicated to all personnel working on the WORKSITE by the appropriate means, which shall include presentations, meetings and tool box talks.
 In addition to that, specific Method Statements and JSEA will be required to be developed and communicated for critical activities, as identified on the WORKSITE.

8 INSTRUCTION – ORIENTATION, TRAINING AND SAFETY MEETINGS

SPCC shall be required to provide instruction and training of its employees. Examples of such documented training to be provided by SPCC include, but are not limited to:

- ✓ Indoctrination/Orientation – Newly employed, promoted, and/or transferred employees shall be verbally instructed in the SHE practices required by their Work assignments. SPCCs shall reserve at least 6 hours per employee for orientation, issue of entry badges, and project SHE training initiatives.
- ✓ Work Assignments – All Work assignments shall include specific attention to SHE concerns, "Follow-up" monitoring shall be required in order to prevent accidents (JSEAs).

A. Meeting


- ✓ Weekly craft toolbox safety meetings shall be properly conducted and recorded. Additionally, staff meetings shall have a portion of the agenda devoted to SHE and accident prevention.

B. Special SHE meetings

SPCC shall arrange additional meetings to address special circumstances that may arise such as:

- ✓ Activities forming part of the WORK which require special instructions and precautions that have not been implemented at WORKSITE;
- ✓ Visits by government bodies or authorities due to non-compliance with LAW;
- ✓ Poor performance of specific Subcontractors;
- ✓ Major non-conformance with SHE requirements;
- ✓ Major incidents such as fatality, major fire or explosion;

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- ✓ Security and emergency response incidents;
- ✓ Major impacts on SHE resulting from design changes during the construction phase of the WORK or potential hazards which were unknown prior to the LETTER OF AWARD.


Meetings shall be held between these personnel to discuss those hazards identified and to propose solutions to such hazards and any unsafe acts/conditions.

All SHE meetings shall be documented and the minutes of meeting submitted to PTTLNG within three (3) calendar days of such meeting, excluding in relation to those special or emergency SHE meetings (as described in the relevant minutes of meeting) which shall be submitted to PTTLNG immediately following the meeting.

C. Weekly Mass Toolbox Talk

SPCC will ensure that SPCC conduct a weekly mass "toolbox talk" at the start of each shift in a language understood by the relevant workforce.

Toolbox talks may be conducted by SPCC's safety representatives, line supervisor or management. Topics for the toolbox talk shall be agreed between SPCC and SUB-CONTRACTOR.

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9 SHE COMMUNICATIONS

Effective communications are vital to the successful implementation of the Project SHE Plan, Project Security Plan and Project Emergency Response Plan for the PROJECT. Communications will take many forms but their common objective is to improve understanding of SHE matters. SPCC will propose its overall strategy for communications of all matters relevant to SHE both for those involved in the PROJECT and at WORKSITE as required, in the Project SHE PLAN.

A. Craft and workers

Craft and workers will be trained in the life critical safety aspects of their job and will attend a training session of 8 hours minimum. Examples are: welder to be trained in Hot-work safety, steel erectors, scaffold builders and other required to work at an elevation to be trained in elevated work safety, people required to work in confined spaces to be trained in confined space and vessel entry safety, crane operator and riggers and signalmen to be trained in crane operation and rigging safety and drivers to be trained in driving safety awareness and defensive driving, etc.

B. Supervisors

All field supervisors and foremen shall attend a shall be trained a 2-days of safety supervisor/foremen courses to complying with the Thai Law, Safety standards and requirements will be dealt with in detail. This training shall be completed within 60 days of the employee's start-of-work at the project site.

C. Operators

SPCC shall submit prior to the mobilization of same the certifications for the following disciplines:


- ✓ Crane Operators
- ✓ Forklift Operators
- ✓ Plant / Heavy Equipment Operators
- ✓ Riggers
- ✓ Scaffolders / Inspectors
- ✓ Excavation Inspectors
- ✓ Confined Space Entry Hole Watchers
- ✓ Authorized Gas Testers

10 RECORDKEEPING OF INCIDENTS AND TRAINING

SPCC's responsibility is to maintain all records required by PTTLNG, state, local,

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Workers' Compensation Insurance, or similar in-country regulations. This includes the maintenance of an accident log, annual summary, and the posting of all prescribed posters.

A log of SHE activities, near misses, accident investigations, employee instruction, training, toolbox meetings, etc., shall be maintained on Worksite and copies shall be promptly provided to PTTLNG upon request and in accordance with the Contract.

11 DRUGS AND ALCOHOL POLICY

PTTLNG's policy with regard to drugs and alcohol is very clear, SPCC will follow-up this policy :

'No personnel are allowed at the WORKSITE to work under the influence of alcohol, drugs or other intoxicating substances, other than medically prescribed medication given by a Medical Doctor.'

PTTLNG reserves the right to randomly require SPCC's and SUB-Contractor's employees to undertake a drugs & alcohol test and to terminate the employment of personnel, if they are found to be under the influence of alcohol, drugs or other intoxicating substances. These same rules also apply to drivers of buses, lorries or other vehicles operating within on SITE and operators of the SPCC's EQUIPMENT and other equipment during their presence on the SITE.


The possession, use, manufacture, distribution, or dispensation of any illegal drug or controlled substance shall be prohibited on PTTLNG property. In addition, SPCC employees working on PTTLNG property shall be expected to report for Work in proper condition and not be under the influence of any controlled substance.

SPCC agrees to provide for Work on the property of PTTLNG only those employees who understand the requirement of this Article and who will comply. SPCC agrees that, prior to assignment to Work under this Contract, such employees shall be chemically screened and confirmed. SPCC employees shall also be required to submit to (urinalysis) testing based upon reasonable suspicion, including aberrant behavior and past accidents report to Work in proper condition and not be under the influence of any controlled substance.

In addition, depending upon job requirements, SPCC employees may be subject to periodic random (urinalysis) testing. SPCC employees failing to conform to testing requirements or failing such tests shall be removed from the Worksite immediately and shall be restricted access to the project for an interval to be determined by PTTLNG site management. SPCC shall submit a copy of its Substance Abuse Prevention Program to PTTLNG for review and approval. PTTLNG shall also periodically review SPCC's program to ensure compliance with this Article.

Violation of this Article by SPCC may, at PTTLNG's option, be deemed by PTTLNG to be a material breach of this Contract and subject the SPCC to termination for default, as well as other remedies under contract, law, or equity.

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12 SHE INSPECTIONS

SPCC's SHE Representative(s), designated as Competent Person(s), will be required to conduct and document routine SHE inspections (as directed by regulation, or, at a minimum, weekly for SHE-related inspections). These inspections shall include but not be limited to:

- ✓ Daily Site / Area Inspections
- ✓ Monthly Equipment / Material Inspections

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13 FIRE PROTECTION/PREVENTION

The SPCC will be responsible 24 hours per day, 7 days per week for fire protection in its work and operational areas, including offices, tool rooms, and storage areas. SPCC must provide approved fire-fighting equipment at the work places and offices in adequate quantities and its employees must be trained in the usage of such equipment.

SPCC will at a minimum comply to the following requirements:

- ✓ Develop and present to PTTLNG for review a fire prevention training program and implement it to the work force.
- ✓ Adequate distance for firefighting equipment shall be maintained between temporary structures and permanent facilities.
- ✓ The use of wood or combustible temporary shacks around permanent buildings under construction shall be minimized. All temporary shacks shall be kept a minimum distance of 20 meters from the perimeter walls of such buildings.
- ✓ Temporary buildings and shelves and storage containers in warehouses shall

be built of non-combustible materials.


- ✓ Fireproofed cabinets or other fire resistant storage facilities shall be used wherever important documents are stored.
- ✓ Provide and maintain in accordance with the equipment inspection / maintenance schedule; alarms and smoke detectors.
- ✓ Provide portable or permanently mounted extinguishers shall be available within 10 meters of a workforce involving welding, burning or the use of an open flame.
- ✓ Each welder shall use welding blankets in order to contain weld spatter.
- ✓ At least one permanently mounted fire extinguisher shall be provided in each building near the door. Additional extinguishers shall be mounted so as to have one available within 20 meters of any point inside the building.
- ✓ Extinguishers shall be located within 15 meters of any point on the perimeter of material stored in fuel or combustible materials storage areas. Additionally, these areas shall be identified with signs restricting vehicle access and prohibiting fire ignition sources and smoking.
- ✓ A permanently mounted extinguisher shall be placed on each item of mobile industrial equipment having a diesel or gasoline engine, and on all welding machines.
- ✓ All fire prevention/firefighting equipment shall be inspected monthly to ensure they are in a good working order and replaced if faulty. Records of inspections shall be maintained for review by PTTLNG, as applicable.
- ✓ Equipment shall be switched off during refueling.

14 FIRE PROTECTION/HOT WORK (WELDING, CUTTING, BURNING, ETC.)

- A. CONTRACTOR shall regulate smoking, open fires, carrying matches, and welding permits when and where deemed necessary in the interest of safety. SPCC will be responsible for and enforce requirements on SPCC employees, the employees of all SPCCs and visitors, who shall comply with the regulations and restrictions as directed. These smoking, open fires and similar regulations may vary during the progress of construction, or during testing or initial operation of any portion of the plant.
- B. Within certain areas designated as "OPEN AREAS," CONTRACTOR shall issue a "HOT WORK PERMIT" on a daily basis that shall authorize open flames, burning, and welding activities during regularly scheduled Work hours.
- C. Within certain areas designated as "RESTRICTIVE AREAS," CONTRACTOR shall issue a "HOT WORK PERMIT" daily that shall authorize open flames, burning, and welding activities during regularly scheduled Work hours. Smoking shall be permitted only in designated compounds. "OPEN AREAS" shall be reclassified as "RESTRICTED AREAS" whenever designated by PTTLNG and upon completion. For "RESTRICTED AREAS," a trained person, referred to as a "fire watch," shall be assigned and equipped with personal protective equipment provided by SPCC.
- D. The fire watch shall be maintained during lunchtime and other breaks and shall continue for 30 minutes after welding operations have been completed. This individual

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shall keep the area clear of unauthorized personnel during welding operations.

15 THIRD PARTY SHE INSPECTIONS

In addition to visits and SHE inspections by its own corporate or insurance representatives, SPCC is advised that the project may be inspected from time-to-time by authorized third parties. Among others so authorized shall be representatives of PTTLNG, insurance companies, and regulatory agencies. Upon their proper identification, they shall be entitled to Worksite access and courteous consideration. PTTLNG shall be made aware, if possible in advance, but in any case as soon as possible, of the purpose and results of such visits that relate to SHE concerns.

16 CONSTRUCTION EMERGENCY PREPAREDNESS PLAN AND DRILLS

SPCC shall provide an area Emergency Preparedness Plan for evacuation of the Work area in the event of a natural disaster and/or project emergency. SPCC will be responsible for advising its employees and those of sub/lower-tier SPCCs of the potential hazards, emergency signals, and primary evacuation routes. SPCC is advised that mandatory periodic emergency evacuation drills shall be held. Any time lost by the SPCC in complying with these drills shall not be reimbursable.

17 CRANES AND DERRICKS

All cranes and derricks shall be certified as being in safe operating condition by a third party Inspection prior to submitting it to PTTLNG for review. The PTTLNG will inspect the crane/derrick, review the third party inspection certificate insurance certificate and drivers/operator license prior to the issuance of an access pass to the jobsite. Cranes will also undergo a third party inspection quarterly. All certifications shall be maintained by SPCC and made available to PTTLNG upon request.


Crane operators must be in possession of a valid Thailand's Government license to operate specific machinery. The operator should be trained, experienced and qualified for the operation of that specific make and model of crane. The utilizing SPCC should provide operator experience documentation even if he is using a SPCC on site.

SPCC will employ competent employees that have undergone adequate and recognized training, that have experience and certification to perform their duties.

18 EQUIPMENT AND MOTOR VEHICLES

- All equipment shall be inspected daily, prior to use, by SPCC's operator.

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Formal inspections shall also be made by SPCC's Competent Person at 30-day intervals with proper documentation maintained at the Worksite by SPCC. Copies of inspections shall be made available to PTTLNG upon request.

- Defective equipment shall be repaired or removed from service immediately.
- All cracked and broken glass shall be replaced prior to bringing vehicles on the Worksite. If glass is broken or damaged on Worksite, and if damage is severe enough to cause a potential safety problem, the equipment shall be removed from service until such damage has been properly repaired.
- The view of the operator will not be blocked or obstructed in any way. SPCC will obtain approval from PTTLNG should UV protection film may be fitted to reduce the sun light, sheeting to reduce wind and / or rain disturbance.
- Vehicles used to transport employees shall have seats firmly secured and have an adequate number of seats and securements (seat belts) for the number of employees to be carried. All passengers shall be properly seated. Standing on moving vehicles shall be prohibited.
- Locations for storage of all fuels, lubricants, starting fluids, etc., shall be reviewed by PTTLNG prior to use by SPCC for storage.
- Seatbelts shall be worn by all CONTRACTOR employees operating (or riding in, where allowed) any motor vehicle and any equipment (including cranes and rollers) with rollover protection structures during performance of the work.


19 ELECTRICAL

- All electrical work, installation, and wire capacities shall be in accordance with the pertinent provisions of the National Electrical Code or equivalent in-country standards.
- SPCC shall develop and implement a lockout / tagout procedure and strictly adhere to the use of this procedure. PTTLNG shall monitor adherence to the procedure on a regular basis.
- All temporary power panels shall have covers installed at all times. All open or exposed breaker spaces shall be adequately covered.

20 FLOOR AND WALL OPENINGS AND STAIRWAYS

- Floor and wall openings shall be guarded by a standard guardrail, mid-rail, and toe-board, or adequately covered.
- Guardrails shall be of sufficient strength to support 200 pounds (90 kilograms) of pressure when applied at mid-span of the guardrail parallel with the floor and perpendicular to the guardrail with a minimum deflection of 2 inches (50 millimeters).
- Covers shall be adequately secured to prevent displacement and have "Danger" signs attached identifying the hazard.
- Every flight of stairs having 4 or more risers shall be equipped with standard stair railings. Stairs shall not be used until risers and railings are securely installed. Treads shall be poured as soon as possible where poured treads apply.
- Debris and other loose materials shall not be allowed on stairways or at access point to stairway and shall be immediately removed. Debris shall not be allowed to accumulate in stairwells.
- SPCC shall be required to replace any floor and wall opening or protective systems removed during the course of their Work.

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21 LADDERS

- All ladders shall comply with Thai law and the requirements as per PTTLNG for Construction.
- Makeshift wooden ladders and painted wooden ladders shall not be used.
- Ladders shall be inspected weekly by a competent person.
- Ladders shall be tagged and with the same tags used for scaffolds.
- When not secured at the top, ladders will be properly anchored at the base to prevent the footings from slipping and a second person shall hold the ladder firm in place while being used.
- When ladders are being used for accessing at the same point more than once, it shall be properly secured at the top and extend at least one meter above the landing or work surface.
- Ladders shall always be supported on the ground or floor but never hung.
- Ladders shall always be used at an angle of 75%. Ladders shall not be used in a vertical position.
- SPCC shall develop and maintain a ladder register to track location, use, condition, inspections and defects.
- Only non-conductive ladders shall be used when working with or around live / energized systems.

22 EXCAVATIONS AND TRENCHING

- Prior to opening any excavation or trench, CONTRACTOR shall notify PTTLNG. In addition, CONTRACTOR shall contact any other necessary entities to determine whether underground hazards such as contaminated soil, containers, or equipment, or installations such as sewer, telephone, fuel, electric lines, etc., may be encountered and where they are located.
- SPCC shall designate a competent person trained in soil classification and the recognition of trenching and excavation hazards.
- Appropriate documentation to meet the PTTLNG's trenching and excavation standards is to be kept on site.
- Only hand excavation shall be permitted where confirmation regarding absence of underground facilities cannot be achieved.
- Excavations and trenches shall be inspected by a competent person daily and after every rainfall to determine if they are safe.
- All banks 1.2 meters high or more shall be sloped to 34 degrees unless soil is analyzed by a competent person allowing a greater slope angle or shall be adequately shored.
- Where, given the inherent constraints of the environment, shoring is not possible, the Excavation / Trench may be benched or braced or, be provided for against additional engineered solutions, which shall be reviewed and accepted by the PTTLNG prior to execution.
- Ladders or steps shall be provided and secured in all trenches 1.2 meters or more in depth. Ladders or steps shall be located to require no more than 7.5 meters of lateral travel before having accessed or egress and shall extend 1.0 meter above the top of the trench bank.
- Material excavated shall be stored at least one meter from the edge of the


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excavation or trench or shall be shored to prevent material from falling into the excavation.

- All trenches and excavations shall be properly barricaded with a hard physical barricade (not tape or rope) to prevent persons from walking into them.
- All walkways or ramps crossing over excavations shall be securely fastened and equipped with standard guardrails.

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23 STEEL ERECTION

- SPCC shall adhere to applicable in-country regulations.
- At no time shall there be more than 3 floors or 12 meters of unfinished bolting or welding above the foundation or uppermost permanently secured floors.
- A temporary and/or permanent floor shall be maintained within 2 stories or 10 meters, whichever is less, below and directly under that portion of each tier of beams on which any work is being performed.
- Planking or metal decking in temporary floors shall be of proper strength and thickness to carry the working load. Decking shall be secured to prevent movement.
- Standard guardrails and toe-boards shall be installed around open sides of permanent floors. During structural steel assembly scaffold tubing shall be used to construct railings to scaffold specifications or, a safety railing (cable) of 12mm diameter shall be installed approximately 1.1 meter high, recessed into interior of floor around all temporary floors.
- Where fall distance exceeds 1.8 meters, scaffolds, ladders, catch platforms or full body harness, double lanyards and shock absorber attached to lifelines or other substantial objects shall be used. If the use of these is impractical, safety nets shall be provided.
- Tag lines shall be used to control all loads and Shepherd hooks to retrieve same safely from a reasonable distance from suspended load.
- Containers shall be provided for storing or carrying bolts or rivets. When bolts, drift-pins, or rivet heads are being removed, a means shall be provided to prevent accidental displacement. Tools shall be provided lanyards (not secured to the wrist) to prevent falling.
- During the final placing of solid web structural members, the load shall not be released
- from the hoisting line until the members are secured with not less than 2 bolts or equivalent at each connection.
- SPCC shall not allow any of employees to walk the steel.
- A safe means of access to the level being worked shall be maintained.
- Climbing and sliding columns are not considered safe access and not allowed.

24 CONFINED AREAS OR SPACES

- CONTRACTORs shall adhere to applicable federal, state, local, and in-country regulations (such as 29 CFR 1926.146).
- SPCC shall develop an entry procedure, and submit to PTTLNG for review and non-objection, to be used when CONTRACTOR employees are required to enter confined areas or spaces. Such areas include, but are not limited to, storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, sewers, underground utility vaults, tunnels, pipelines, open-topped pits, basements, and temporary wood framing covered with plastic.
- All SPCC employees who are required to enter confined areas or spaces shall be instructed as to the nature of hazards involved, necessary precautions to be taken, and the use of required protective and emergency equipment.

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- per 20 employees.
- ✓ All job site toilet facilities shall be serviced and cleaned with steam, chemicals and detergents at least once daily or more frequently depending on the amount of use.
- ✓ Portable toilets on the project shall be strategically located so as to provide adequate coverage for all active work areas. In multi-story structures, no more than two (2) floors will separate each toilet.
- ✓ SPCC shall provide a dedicated team to maintain, service and keep clean and hygienic all sanitary facilities and otherwise occupied spaces.
- ✓ The frequency of cleaning portable water containers should be more once a week.
- ✓ CONTRACTOR shall be proposed of the portable toilets locations on the SITE to PTTLNG/PMC for review and approval before mobilize into site.

26 LUNCH / BREAK AREAS

Employees shall take breaks and eat lunch in designated areas only. These areas shall be free from hazardous materials or other possible contaminants.

- ✓ Lunch and break areas shall be removed from active work areas where employees would be exposed to ongoing work while eating lunch or taking a break.
- ✓ Lunch and break areas shall be covered (so as to protect against the inherent environmental elements), well ventilated and kept cool and shall meet 100% the capacity of the on-duty / on-site work force.
- ✓ SPCC shall ensure all trash, debris and food residues are cleaned up at the end of the break.
- ✓ Consumption of food shall be prohibited in work areas.
- ✓ The locations and requirement of such facility shall be approved by PTTLNG.


27 HEAT STRESS

- SPCC shall provide adequate numbers of heat stress shelters or shaded areas for employees to rest to prevent heat stress or heat exhaustion when working in the open work areas.
- SPCC shall equip the heat stress shelter fans or other means of cooling, normal drinking water and drinking water enriched with minerals and electrolytes.
- SPCC shall submit to PTTLNG a design for such heat stress shelter for review and approval and a plot plan indicating the location of the shelters.

28 SMOKING

PTTLNG reserves the right to regulate smoking, open fires, carrying matches, and welding permits when and where deemed necessary in the interest of

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- Prior to SPCC employees being permitted to enter into any confined areas or spaces, the atmosphere within the space shall be tested to determine the oxygen level and concentration of flammable vapors, gases, and toxic contaminants. CONTRACTOR needing access to the confined area shall furnish the testing equipment and a person trained/knowledgeable in the use of the testing equipment.
- When welding, cutting, or heating in confined areas or spaces, ventilation shall be provided. When sufficient ventilation cannot be provided without blocking the means of access/egress, SPCC employees shall be protected by airline respirators.
- An employee of SPCC shall be stationed outside the confined area, whenever required, to maintain communication with those working within and to initiate an emergency response in accordance with approved permit or other requirements for the project.
- Hazardous atmosphere means an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness from:
 - ✓ Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL)
 - ✓ Airborne combustible dust at a concentration that meets or exceeds its LFL (which may be defined as a condition in which the dust obscures vision at a distance of 5 feet (1.52 meters) or less)
 - ✓ Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent
 - ✓ Atmospheric condition or concentration of any substance that is immediately dangerous to life or health as published in 29 CFR 1910.146 (Z) or (G), or in-country equivalent, or may be capable of causing one of the above reactions

25 SANITATION

The SPCC will provide an adequate supply of potable water in all its work areas daily and test water supply weekly.

- ✓ Portable containers for drinking water shall be tightly closed, and equipped with a tap. Water shall not be dipped from containers.
- ✓ Drinking water containers shall be clearly labelled as to the nature of its contents, and shall not be used for any other purpose.
- ✓ Drinking water containers shall not be opened in the field by anyone other than employees designated to service and maintain the containers.
- ✓ Non-potable water outlets shall be clearly labeled as being unsafe for drinking, or washing purposes.
- ✓ Portable water containers shall be cleaned weekly, using bleach wash and baking soda rinse.
- ✓ Single use drinking containers shall be provided at each water container.
- ✓ Adequate trash containers shall be provided to dump the single use drinking containers. The use of a common drinking cup will not be permitted. Personnel are not permitted to drink directly from the container.
- ✓ Toilet facilities shall be provided for workers/employees to the ratio of one toilet

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safety. SPCC shall be responsible for and so enforce SPCC's personnel, the personnel of all subcontractors and visitors to comply with the regulations and restrictions as directed. These smoking, open fires and similar regulations may vary during the progress of construction, or during the testing or initial operation of any portion of the plant. Smoking will not be allowed in any office, building or vehicle on the project. PTTLNG requires that SPCC shall provide degenerated and isolated shelters for smoking and keeping matches and provide fire extinguisher sand bucket and ashtray. CONTRACTOR shall seek the authorization of the PTTLNG for the location where SPCC intends putting these shelters.

29 IONIZING RADIATION

The SPCC shall appoint qualified employee as Radiation Safety Officer. The person shall be responsible for aspects of work involving the storage, the handling, the transportation and the use of ionizing sources on the project and ensure safe work practices and procedures are followed by CONTRACTOR employees and sub-contractors. All ionizing and radioisotope source and x-ray work will be done with the coordination of other project participants working on the project.


SPCC shall ensure all personnel that are occupationally exposed to ionizing radiation, are subject to a regular medical check and continual medical monitoring, a copy of such medical report must be kept on record and made available for inspection to authorities and PTTLNG.

SPCC shall obtain an approved permit from PTTLNG for all work involving ionizing radiation occurring by natural decay of radioisotopes (nuclides) and / or x-rays as produced by electrical means from portable or static equipment. Permits shall be submitted 24 hours in advance for approval with an area plot plan indicating the area the work is to be performed.

SPCC shall inspect prior to the start of ionizing radiation work to ensure :

- ✓ People that are performing the work are licensed and have valid certification recognized by the Thailand's Government.
- ✓ Each person involved in the work has a monitoring film badge and a pocket dosimeter.
- ✓ A survey meter with audible and visual alarms is in the area for radiation area monitoring and shall acquire the source each time.
- ✓ All inspections and certification of equipment are current and complies with applicable Government standards and PTTLNG rules.
- ✓ An accurate accounting system is kept for each source coming onto the project and shall include the serial number, receipt date, decay chart and projector or transit container used.
- ✓ The work areas in which ionizing radiation work is to be performed are barricaded, warning signs and lights posted, perimeter guards posted and all workers removed from the area before the work starts.

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- ✓ A safe access and egress are to be provided to the work location with adequate lighting.

SPCC shall obtain proper approval from PTTLNG and Thailand's Government for storage facilities and to store ionizing and radioisotope sources. CONTRACTOR shall comply with all requirements of authorities.

SPCC shall ensure all vehicles transporting ionizing and radioisotope sources onto the project are fitted with yellow revolving lights on rooftop and are marked "NDT Radiography" on both sides and rear end of the vehicle.


30 HEXAVALENT CHROMIUM

- A. SPCC shall provide the necessary training to persons performing work (welding of stainless steel) in the hazards of Hexavalent Chromium.
- B. SPCC shall apply suitable respiratory protection program, including of pre-medical evaluations (respiratory function tests, blood baselines tests and a full physical), periodic medical evaluations and post project medical evaluations of persons performing such work as described above.
- C. SPCC shall make available the appropriate respiratory and full body protection in protecting against the hazards of hexavalent chromium.
- D. SPCC shall establish a safe environment for the execution of such work by way of schedule or physical barricade to eliminate impact to persons not directly involved in the work described above.
- E. SPCC shall make available a decontamination zone for persons donning and disrobing from garments worn during the execution of the work described above prior to leaving the immediate work area for breaks or at the end of a shift.

31 PAINTING AND BLASTING

- A. SPCC will ensure the plant & equipment used by the operators during spray painting and grit blasting operations comply with international standards unless otherwise specified by PTTLNG. Operators shall be properly trained and records made available to PTTLNG on request.
- B. Compressors supplying airline respirators shall be tested for grade 'D' air quality (non - contaminated breathing air) before being allowed to operate on the project and every month thereafter thus ensuring persons health is not being put at risk. A record of these tests shall be kept on the project and made available to PTTLNG on request.
- C. Compressors shall have filters in the delivery hose to continually remove moisture, oil and particulate. The filters shall be renewed periodically and the date of the renewal will be identified on the outside of the filter. It shall have a carbon monoxide (CO) monitor and alarm between the oil lubricated compressor and the respirator air intake. It shall also be equipped with a 140 degree F, (60 degree C.), high temperature alarm on the air intake of an airline respirator and have a minimum

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hood air flow 6.

- D. Air receivers providing air to airline respirators shall be constructed in accordance with the 1968 edition of the ASME Boiler and Pressure Vessel Code Section V111. It shall be installed so that all drains, hand- holes and manholes are easily accessible, equipped with an indicating gauge and with one or more spring loaded calibrated safety relief valve.
- E. Hoses shall have whip-lash arrestors installed at all joints especially at quick release couplings, and the compressed air reduced to less than 30psig (210kpa) to prevent injuries.


32 LIVE LINES

- A. When steam blowing, chemically cleaning, pneumatic testing, hydro- testing or pressure testing pipelines or putting any product into pipelines, SPCC Will ensure people engaged in the work are properly trained in their tasks and the dangers of the work and the safety precautions to be taken. SPCC will ensure an approved permit is obtained from.
- B. Barricades shall be placed at a calculated distance or at a minimum 20-meter safe distance around the areas in which such work is being performed and signs posted. Access into the area shall be controlled to allow only the people directly involved in the work. CONTRACTOR shall deploy perimeter guards to control access.
- C. All flanges, gaskets and valves shall be checked prior to testing, valves and blinds locked in the correct open or close position, and tested for leaks once the work started and periodically thereafter.
- D. SPCC shall ensure an Emergency Response Team near the area consisting at a minimum of an ambulance, first aid people, fire fighters and firefighting equipment and that proper communication channels are established.

33 PERSONAL PROTECTIVE EQUIPMENT

- A. PPE, such as gloves, glasses, ear plugs, dust masks etc, shall be observed as a consumable. All required PPE shall be administered by the CONTRACTOR without charge or deduction from wages to the worker. Should cases of negligence be determined by the CONTRACTOR, the CONTRACTOR shall present the case to PTTLNG before action is taken against the worker.
- B. FRC – Fire Retardant Clothing within areas classified as Hazardous Zones or as required against the JSA, Long sleeve shirts shall be worn at all times. Sleeveless shirts and tank tops are not permitted.
- C. Folding in of the back part as to convert to a slip-on shoe will not be permitted. Sandals, tennis shoes, or any other street type shoe will not be permitted.
- D. Loose fitting clothes or jewelry shall not be worn around such things as moving machinery, grinding operations.
- E. Approved hard hats meeting specifications contained in ANSI (American National Standards Institute) Z89.1-1981 and/or Z89.2-1971 will be worn at all times when outside offices and vehicles. Hard hats shall also be worn when employees

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are engaged in activities requiring goggles, welding hoods and shields and face shields.

- F. Safety glasses, complying to international standards (ANSI Z87), with side shields are required in plant and construction areas at all times when outside offices and vehicles. Dark safety glasses may be worn during daytime. Clear or amber glasses must be worn at night or in poor illuminated areas during daytime.
- G. Safety nets shall be installed when people are working at elevated levels in structures to contain debris, material and other loose items falling from above to protect people working below. Nets shall be cleaned frequently to prevent fire hazard resulting from debris accumulating.
- H. Protective earplugs must be worn when noise levels in working areas exceed specified safety limits of 80dB. CONTRACTOR shall measure the noise levels of each area where noise is present to determine noise levels and each area where the noise level exceeds 80dB shall be posted with warning and ear protection signs. Records of measurements shall be maintained and made available to PTTLNG for review upon request. Double Hearing protection or other means of protecting hearing shall be determined by the JSA and made available by the SPCC should the need arise.

34 SIGNS, SIGNALS, BARRICADES AND LIGHTS

- A. Signs, signals and barricades shall be visible at all times where a hazard exists.
- B. All streets, roads, highways, and other public thoroughfares, which are closed to traffic, shall be protected by effective barricades on which shall be placed acceptable and highly visible warning signs. Barricades shall be located at the nearest intersecting public highway or street on each side of the blocked section.
- C. All floor openings, open trenches and other excavations shall be provided with suitable floor opening covers, barriers, signs and lights to the extent that adequate protection is provided to the public. Obstructions such as material piles and equipment shall be provided with similar warning signs and lights.
- D. All barricades and obstructions shall be illuminated by means of warning lights from sunset to sunrise. Materials stored upon or alongside public streets a highways shall be so placed, and the work at all times shall be so conducted as to cause the minimum obstruction and inconvenience to the travelling public.
- G. All barricades, signs, lights and other protective devices shall be installed and maintained in conformity with applicable statutory requirements and, where within railroad and highway right-of-way as required by the authority having jurisdiction there over.
- H. Adequate safe pedestrian crossings shall be provided over trenches and excavations and constructed to applicable Thailand scaffolding standards with regards to rails and walkway (platform), and be of a strength that meets the load bearing criteria of at least 10 people. These crossings shall be inspected weekly and tagged with the same tagging system used as for scaffold inspections.

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35 RIGGING EQUIPMENT

- A. All rigging equipment shall be free from defects, in good operating condition and maintained in a safe condition and shall bear the serial number of the manufacturer and the Safe Working Load capacity (SWL) marked on it. All rigging equipment will also be accompanied by the manufacturer's certificate indicating the serial number and capacity.
- B. A designated, competent employee of SPCC prior to initial use on the jobsite shall inspect rigging equipment and monthly thereafter to ensure that it is safe. Records shall be kept on jobsite of each of these inspections by SPCC and shall be made available to PTTLNG upon request. Any defective rigging equipment or materials that are observed shall be destroyed or immediately removed from the site.
- C. SPCC will ensure all spreader bars have an engineered design and a test certificate for the Safe Working Load capacity (SWL) clearly marked on it. SPCC will keep relevant documentation on record and make it available upon request to PTTLNG.
- D. CONTRACTOR shall develop, maintain and apply the use of a Lifting and Rigging gear register, which shall capture, but not be limited to:
 - ✓ Use
 - ✓ Location distributed to
 - ✓ In / Out
 - ✓ Inspections
 - ✓ Defects / Repairs
- E. No person shall be employed as a rigger until he has successfully completed the site rigger's certificate training course.

36 POWER TOOLS AND HAND TOOLS

- A. All hand and power tools, whether furnished by CONTRACTOR or by CONTRACTOR's employee shall be maintained in a safe condition.
- B. SPCC shall not issue nor permit the use of unsafe hand or power tools.
- C. Electrical power tools shall 220 Volts, grounded or double insulated with proper assured equipment grounding, or ground fault interrupter circuit protection provided.
- D. Pneumatic power tools shall be secured to the hose or whip by some positive means such as tied off with stainless steel wire or clips. Couplings of pneumatic hoses will be properly secured and in addition all pneumatic hoses will be fitted with a whiplash arrestor across couplings.
- E. All grinding machines shall conform to applicable PTTLNG requirements. Hand held grinders such as angle grinders, surface grinders, pencil grinders, etc. shall be equipped with a dead-man switch.
- F. Cords, leads and hoses shall be kept at least 2.0 meters off the ground or whatever height is necessary to be protected from traffic and prevent tripping hazards.
- G. Proper cable management shall be adhered to continuously. Cables may be buried if

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insulated within a PVC sleeve and surface markers made available and maintained. All surface markers shall be a part of the weekly inspection program.


37 COMPRESSED GAS CYLINDERS

- Cylinders shall be kept away from sparks, hot slag and flames or be adequately protected.
- Cylinders shall not be placed where they can become part of an electrical circuit.
- Cylinders shall be labeled as to the nature of their contents.
- Oxygen cylinders in storage shall be separated from fuel gas cylinders or combustible materials a minimum of 6.0 meters, or by a non-combustible barrier at least 2.0 meters high having a fire resistant rating of at least one half hour. Empty cylinders shall be separated as above from full cylinders and stored with like cylinders.
- No Smoking signs shall be posted at storage areas and signs shall clearly indicate contents of cylinders.
- Anti-flashback arrestors and check valves shall be installed on all oxygen and acetylene cutting gear. The anti-flashback arrestor shall be installed at the regulator end and the check valve at the cutting torch end of each hose while in operation.
- When not stored in cradles, compressed gas cylinders shall be secured with chains in an upright position at all times. Gas cylinders in use shall be placed in an upright position in trolleys and secured by chains.
- When transporting, moving and storing cylinders valve protection caps shall be in place and secured. Cylinders shall only be transported in an upright position and secured to prevent them from falling over.
- Cylinders shall not be hoisted by magnets or choker slings. Valve protection caps shall not be used for hoisting cylinders. Cylinders may only be hoisted in engineered designed cages/cradles bearing the SWL capacity of the cage/cradle. The cradles/cages must be designed to a safety stress factor of at least five of the maximum load. A competent engineer approved by PTTLNG, must inspect such cages/cradles weekly and certify it safe for use.
- Domestic gas cylinders shall not be broad into the construction site. Special request to use of domestic gas cylinder at construction site shall be proposed and submitted to PTTLNG/PMC for further approval.

38 SCAFFOLDS

- All scaffolds will be built/erected and dismantled and used as per the specifications and requirements of Thailand standard unless otherwise specified by PTTLNG.
- Scaffolding not adaptable to guard rails shall require the use of safety harnesses with the lanyard attached to a secure substantial object.
- Mobile scaffold casters shall be secured and locked prior to mounting. No Personnel shall be on mobile scaffold when it is being relocated.

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electrical equipment, electrical man-lifts, man-baskets, gas cylinder cradles used for lifting, lifting equipment including slings, spreader bars and shackles, cranes, temporary pipe supports and pipe supports in fabrication shops, hoists, temporary electrical distribution boards, fire extinguishers, welding and cutting equipment, ladders, fall protection devices such as full body harnesses and inertia real fall arrest systems, shall be inspected monthly by competent person of SUBCONTRACTOR which shall provide for report to CONTRACTOR within the third day of each month. All equipment shall bear a color coded sticker or tag with the SPCC's name, own equipment identification/serial number or manufacturer's model or serial number, date of inspection and the signature of the competent person inspecting the equipment. SPCC will provide to issue color code sticker every 3 months. Equipment without a valid inspection by a competent person and valid color-coding shall not be used and removed from the project site.

Sample :

Month	Jan-Feb-Mar	Apr-May-Jun	Jul-Aug-Sep	Oct-Nov-Dec
Color				


Equipment/Item in quarantine

42 DRIVING & TRANSPORTATION

SPCC shall adhere to the PTTLNG's driving procedures, posted signs and specified speed limits in PTTLNG operating areas and within the site environs. In the event that any of the SPCC's personnel do not follow safe driving practices, posted traffic signs and exceed speed limits, the PTTLNG may direct the SPCC to replace such personnel at no additional cost to the PTTLNG.

- ✓ The SPCC shall fully comply with the PTTLNG's Fire & Safety Regulations and SHE Guidelines for CONTRACTORS with respect to all vehicles.
- ✓ The CONTRACTOR shall ensure that all its drivers comply with the Thailand's driving regulations and rules.
- ✓ All SPCC drivers shall undergo a Defensive Driving course on an annual basis and provide the training certification and records to PTTLNG. PTTLNG reserves the right to remove any SPCC / SPCC CONTRACTOR personnel from the Worksite for failing to comply with the Driving Procedure, even in the case of a first violation.
- ✓ All equipment drivers / operators, drivers must only be employed on the Worksite as drivers / operators. No driver / operator are permitted to work in another capacity.
- ✓ SPCC is required to demonstrate the experience, qualifications, certification, and applicable Government license of any person employed as a driver / operator of any mobile equipment or vehicle.
- ✓ Maximum speed limit is 30 kilometers per hour. However, much slower All SPCC's means of ingress and egress routes will be adequately
- ✓ Any ATVs used on the jobsite will be 4 wheeled, not 3 wheeled and only on

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- SPCC's employees working swing stages, boatswain chair, floats, suspended scaffolds, man-lifts, suspended man-baskets and needle beam scaffolds shall wear safety harnesses with double shock absorbing lanyards and with lanyards attached to an independent lifeline.
- SPCC will ensure all scaffolds are inspected and tagged safe for use prior to the use thereof and weekly thereafter by a competent scaffold inspector. A proper scaffold inspection and tagging system, which is consistent with universally recognized industry standards, shall be utilized and maintained. Unsafe scaffolds will be tagged unsafe and rectified immediately.
- People using such incomplete scaffolds or scaffolds not specifically declared safe, are violating the 100% fall protection policy and may be removed from the jobsite. Only competent scaffold builders are allowed on unsafe or incomplete scaffolds for the purpose of completing the scaffold, making it safe or the dismantling thereof.
- Personnel erecting or dismantling scaffolding shall be trained and certified by a qualified trainer before the commencement of the work.

39 TEMPORARY PIPE SUPPORTS

All temporary pipe supports and pipe supports used shall have an engineered design, with a safety stress factor of at least two, safe working load capacity displayed on it and inspected by an engineer prior to use and inspected monthly thereafter. The design of temporary pipe supports and pipe supports will have proper end stops and end footings without any overhang. Lists of each design and type indicating its purpose of use, safe working load capacity and pipe bore shall be submitted to PTTLNG.

40 EQUIPMENT PRESERVATION

SPCC will ensure the equipment is preserved according to the specifications of the manufacturer, people involved in the work are trained and the equipment used for preservation (charging / removal), is inspected and safe for use. SPCC shall ensure regulators are rated for the maximum cylinder pressure, gauges are calibrated, hoses used are of the correct type and hoses used for purging are not metal, fittings and connections are the correct type and pressure relief devices are set at the correct pressure. Gas used for purging is not flammable or toxic, cylinder is charged, cylinder valve is operational and key attached. Equipment to be charged / released shall be visually checked for damage, for flange tightness, leaks or any missing items prior to the introduction of the charging /removal medium. Any missing items, damage or loose connections must be rectified before activities take place. Barricades and signs shall be placed around the area.

41 MONTHLY INSPECTION PROGRAM

All of the following:- fuel driven construction equipment, hand and power tools,

approval of PTTLNG.

- ✓ The use of cell phones and two way radios are strictly prohibited while driving a vehicle or operating equipment. Equipment operators and vehicle drivers must stop prior to the use of PTTLNG issued cell phones or two way radios.
- ✓ SPCC shall develop and implement a Man / Machine Interface Program and as far as it is reasonably practicable, ensure that an area is at all times suitably lit and that pedestrians are segregated by hard barricade/ signage and policing from moving vehicles and / or vehicle thoroughfares.

43 OCCUPATIONAL HEALTH

- Pre-employment medical screening
SPCC shall ensure that all its employees and SPCC SUB-CONTRACTOR's employees engaged in the WORK are declared medically fit for the job and healthy by an Occupational Health Doctor. Any medical diseases or disabilities which may adversely influence the employee's ability to perform his role in the WORK shall be reported to PTTLNG prior to the commencement of the WORK.
- Medical Welfare of Personnel
SPCC shall at no cost to PTTLNG be responsible for the medical benefits of its own and SPCC SUB-CONTRACTOR's employees. SPCC shall make necessary arrangements for medical consultation, treatment or hospitalization if and when necessary and will arrange suitable insurance coverage for such contingencies.
- SPCC's simple first aid / medical room, medical facility and first aid station

SPCC is responsible to provide first aid / medical room located at an appropriate location at the SITE within its own camp area. The facility should be manned throughout the working hours and comply with requirement of PTTLNG SHE MANAGEMENT PLAN.


- ✓ SPCC is responsible to build and operate a first aid station ("FAS") within its own construction area manned with medical personnel on a 24 hours a day / 7 days a week basis.
- ✓ SPCC is responsible to provide first aid boxes within its own camp area and construction area.

44 FIRST AID AND INJURY REPORTING REQUIREMENTS

A. Personnel and Supplies

- ✓ SPCC shall ensure the availability of medical personnel for advice and consultation.
- ✓ Prior to commencement of Work, SPCC shall make provisions for prompt medical attention in case of serious injury to its employees.
- ✓ SPCC shall ensure that at least one of SPCC's employees is available at the

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- Worksite to render first aid for each 15 employees performing Work at the Worksite. The individual(s) must have a valid certificate in first-aid training from the authorities training center, or equivalent in-country source that can be verified by documentary evidence.
- ✓ SPCC shall ensure that first-aid supplies approved by SPCC's consulting physician are easily accessible when required.

SPCC shall provide an adequate number of first-aid kits and supplies approved by the consulting physician. First-aid kits shall be easily accessible and shall be in a weatherproof container with individual sealed packages for each type of item. Contents of the first-aid kits shall be checked by CONTRACTOR for completeness and accuracy prior to being sent out to the Worksite and at least weekly during performance of the Work to ensure the expended items are replaced.

B. Incidents and Medical Procedures

CONTRACTOR shall immediately communicate all incidents (near misses included) to the PTTLNG SHE Representative, and submit a documented investigation report within 24 hours of notification. All investigation(s) reports and support documentation shall be submitted to the PTTLNG SHE Representative:

- ✓ All SPCC shall participate in the PTTLNG Modified Return-to-Work Program, which shall be based upon project/site management's commitment that temporarily or partially disabled employees, as the result of an occupational injury or illness, can productively return to Work prior to resuming normal job duties.
- ✓ All obvious or potential workers' compensation claims shall be reported to the appropriate insurance carrier within 24 hours of notice to the CONTRACTOR.


45 DISCIPLINARY ACTION

SPCC shall follow the disciplinary action below or SPCC's Disciplinary Action Program if it is deemed more stringent by PTTLNG. However, SPCC may be required to remove an employee from the project site at the request of PTTLNG.

A. Serious SHE Violation

- ✓ A Serious SHE Violation is an infraction of project SHE rules that involves a substantial probability that death, serious physical harm, major equipment damage, major property damage, or Work stoppage could result as a result of the infraction.
- ✓ A SPCC employee who commits a Serious SHE Violation or is in an IDLH situation shall be given a written reprimand by CONTRACTOR and/or

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47 REQUEST REMOVAL OF CONTRACTOR PERSONNEL

If resolution does not occur, PTTLNG shall notify the SPCC's home office, with a copy to field office, by registered mail, return receipt requested, of PTTLNG's intent to direct the removal of the SPCC's specific Project Management.


48 SAFETY INCENTIVE PROGRAM

SPCC shall participate in the Safety Incentive Program of the PTTLNG for this project, which is designed to achieve competition between CONTRACTORS and to benefit the people. SPCC shall submit SPCC's Safety Incentive Program to PTTLNG for review and approval. SPCC's program must drive safe behaviors and be based on the SHE performance scoring of the weekly area safety assessments of each individual supervisor and his crew's work areas. The scoring for the purposes of the incentive program should also include scoring tabulation for SHE initiatives and leading indicators. The program must be designed to recognize good SHE performance and safe behaviors and monthly awards to best performing supervisor and crews. CONTRACTOR's senior site personnel are required to drive the incentive program and actively participate in the recognition and awards process.

49 SECURITY

- SPCC shall be responsible for the security of its own facilities including material, vehicles, tools, equipment, and any other possessions of CONTRACTOR. PTTLNG does not assume responsibility for CONTRACTOR's material, equipment, tools, vehicles or facilities on the project.
- CONTRACTOR will control access at all the gates and entrances to the project Worksite 24 hours a day, 7 days a week, CONTRACTOR and its employees shall apply for access passes for all employees, vehicles and equipment to enter the project site.
- SPCC and its SUBCONTRACTOR shall complete the project application forms completely and correctly and submit all supporting documentation to the SPCC SHE team via their designated representative for review and processing.
- After processing CONTRACTOR's completed documentation, SPCC SHE team will issue numbered, ID badges to SPCC employees once they have received safety indoctrination, security induction and other required training. Vehicles and equipment will only be issued access passes after completing and submitting access applications and passing all safety and legal requirements which includes an inspection of the vehicle.
- SPCC will charge to replace any lost ID badges of SPCC's employee and per ID badge for each week per ID badge not returned upon employees demobilization or termination from the project.
- SPCC shall ensure access passes and ID badges are properly displayed and visible at all times and present it to CONTRACTOR Security at the access gates and site entrances or upon instruction.

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shall be removed from the Worksite and not returned to duty at the Worksite if such violation is determined by PTTLNG in its sole judgment to be a flagrant violation. A documented oral reprimand shall not be issued for this type of safety violation.

- ✓ A second violation categorized as serious shall result in the automatic removal of the employee from the Worksite by CONTRACTOR, provided the second violation occurs within one (1) year of the first.


B. Progressive SHE Violation

- ✓ A Progressive SHE Violation is an infraction of the project SHE rules that occurs when the infraction is not likely to cause death, serious physical harm, major equipment damage, or Work stoppage.
- ✓ A SPCC employee who commits a Progressive SHE Violation shall be given a documented oral reprimand by SPCC. A second Progressive SHE Violation to the same employee requires that the employee be given a written reprimand by CONTRACTOR. The employee shall be removed from the Worksite by CONTRACTOR should the employee be guilty of a third Progressive SHE Violation, provided that the third Progressive SHE Violation occurs within one (1) year of the first. It is not necessary for the Progressive SHE Violations to be identical for the progressive steps of discipline to apply.

46 SHE PENALTIES

SHE is a prime concern and responsibility of PTTLNG and SPCC. PTTLNG's SHE Review Committee will investigate poor safety performance where areas have achieved 80% and below for two consecutive weeks in the Weekly Area Assessments to determine the cause for the poor performance. The committee will also investigate poor safety performance in terms of daily inspection and high incidence of incidents. SPCC will be advised in writing of the committee's findings. Should the Safety Committee determine that continuous poor safety performance is a result of inadequate, poor or insufficient field supervision and/or safety personnel, PTTLNG will instruct SPCC to replace the supervision and/or safety personnel or, provide additional field supervision and/or safety personnel. CONTRACTOR shall adhere to the findings of the committee and provide the replacement or additional field supervision and/or safety personnel within seven days of the written notification. CONTRACTOR may request the Safety Committee in writing to review the need for additional field supervision and/or safety personnel and be relieved from the requirement for additional personnel when CONTRACTOR has achieved consistently above 90% in the Weekly Area Safety Assessments for a minimum period of two months or has implemented programs successfully to prevent poor performance.

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- SPCC shall organize the standard form of material gate passes and have them approved and presented at PTTLNG's Security gates for all material and equipment entering or exiting the gates.

SPCC and SUBCONTRACTOR shall obtain from SPCC a visitor's pass for each visitor who wishing to visit the SITE.

- SPCC shall immediately notify PTTLNG of all thefts or other security violations at the jobsite or project. CONTRACTOR shall also submit to PTTLNG a monthly summary of thefts or other security violations.
- No firearms, dangerous weapons or any item deemed illegal under Thailand's Law are allowed on the jobsite.
- Only PTTLNG approved cell phones will be permitted on the site. No cell phones with built-in cameras are permitted. Use of photographic equipment inside the project or photographing any part of the project, security personnel or post is strictly forbidden without specific approval of PTTLNG. No photographic or any other imaging devices will be allowed on the project without proper approval of the PTTLNG. Any unauthorized imaging devices found will be confiscated and the proper authorities notified.

50 PROTECTION OF WORKERS, THE PUBLIC, ASSETS AND ENVIRONMENT


SPCC shall protect the safety and health of workers and people living or working near the activity from potential hazards and risks carried out by that activity. SPCC, without cost to PTTLNG, shall take all necessary precautions and mitigation measures to protect the workers and the public and minimize disturbance and inconvenience to the public resulting from performance of the WORKS. Throughout performance of WORKS, SPCC shall execute the WORKS and conduct all operations in such a way as to minimize any impact upon the natural environment, including compliance with all LAWS, PERMITS, and rules applicable to the WORKSITE, e.g. ENVIRONMENTAL MANAGEMENT PLAN, Environmental Impact Assessment (EIA), EIA approval conditions and authorities etc. SPCC shall agree to indemnify PTTLNG and consultants of PTTLNG for all claims, damage costs and penalties relating to any environmental damage or loss or non-compliance with any LAWS or PERMITS arising out of SPCC and/or SPCC SUB-CONTRACTOR performance of WORKS.

51 ATTACHMENT

More details of related SHE procedures are wrapped in attachment here for all personnel reference.

Att. no.	Page no.	Title of SHE procedure
Attachment 2	pp.62 ~ pp.66	Dust control procedure
Attachment 3	pp.67 ~ pp.105	Fall prevention & protection program
Attachment 4	pp.106 ~ pp.115	Fire prevention in construction procedure
Attachment 5	pp.116 ~ pp.133	Gas cylinders storage, transportation & use procedure

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Attachment 6	pp.134 ~ pp.141	Grinding works procedure
Attachment 7	pp.142~pp.156	Handling radioactive source procedure
Attachment 8	pp.157~pp.167	Heat stress prevention procedure
Attachment 9	pp.168~pp.174	Housekeeping procedure
Attachment 10	pp.175~pp.181	Hydro testing procedure
Attachment 12	pp.190~pp.220	Leading indicator system
Attachment 13	pp.221~pp.226	Lighting for construction works
Attachment 14	pp.227~pp.249	Manual handling procedure
Attachment 15	pp.250~pp.259	Marine works procedure
Attachment 16	pp.260~pp.267	Noise
Attachment 17	pp.268~pp.272	Painting works
Attachment 18	pp.273~pp.286	Pneumatic test
Attachment 19	pp.287~pp.300	Safe transportation
Attachment 20	pp.301~pp.306	Site preparation
Attachment 21	pp.307~pp.318	Warning signs
Attachment 22	pp.319~pp.330	Welding operations
The below		
1	SHE Training Procedure	
2	Environmental Procedure	
3	PPE Management Procedure	
4	Confined Space Procedure	
5	Crane, Rigging and Lifting, Scaffolding, Excavations work safe	
6	Hazardous Chemicals and Substance Procedure	
7	Emergency Preparedness and Response Procedure	
8	Hand Tools and Machinery Safety Procedure	
9	Work Permit Program	
10	SHE audit and inspection management Procedure	
11	Incident/accident investigation and notification Procedure	
12	Simultaneous Operation Procedure	
13	SHE Action Tracking System Procedure	
14	SHE risk management and JSEA procedure	
16	SHE Manual for Construction	
17	KPI and SHE Performance Monitoring and Reporting procedure	
18	Alcohol & Drug testing procedure	
19	SHE Manual and procedures for Commissioning and Start Up	
20	SHE Pre Start-Up Audit Procedure	

PTTLNG Nong Fab LNG Receiving Terminal Project		
		

SHE PLAN FOR COMMISSIONING AND START UP
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DOC CLASS Z2

REV.	STATUS	DATE	REVISION DESCRIPTION	BY	CHK.	APPR.
F1	IFF	28/09/2021	Issued for Final			
R2	IFR	13/09/2021	Issued for Review			
R1	IFR	21/06/2021	Issued for Review			

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1. INTRODUCTION

1.1. Objectives of the Document

This Plan is the main document for the application of the Health, Safety and Environment Management System (SHE MS) during the Pre-Commissioning, Commissioning and Start Up phase of the Project. Its purpose is define the programs that shall be developed to enable the Contractor management to effectively sustain its commitment to SHE throughout the Pre-Commissioning, Commissioning and Start Up phases. Ensure the Health and Safety of the people and protection of the Environment throughout each phase of the Project will be a management responsibility and a prime consideration in all operations and activities undertaken under Contractor responsibility.

Scope of this document is:

- Identify and comply with all applicable SHE Local Laws, Project Standards and Contractual requirements, to ensure that the Project complies with them;
- Ensure the application of the Contractor Health and Safety Management System;
- Define the SHE organization of the Project;
- Define the SHE objectives of the Project;
- Define the SHE deliverables foreseen for the Project;
- Define the SHE activities will be carried out during the Project execution, in order to reach the SHE objectives and meet the identified requirements;
- Define SHE data to be monitored and reported (number of injuries, number of SHE meetings, number of spills etc.) in order to immediately correct any deficiency of the System so ensure the continuous improvement of the SHE performance.

1.2. Reference Documents

The references the present document and to collect additional information are:

1.2.1. International standards

- SHE documents issued by OSHA, the Occupational Safety and Health Administration (United States of America);
- SHE documents issued by OGP, The International Organisation of Oil & Gas Producers;
- ISO 45001: Occupational health and safety management systems, Requirements with Guidance for Use;
- ISO 14001: Environmental Management Systems - Requirements with Guidance for Use

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1.2.2. PTTLNG Documentation


	Plw System for Commissioning and Start Up
1602088-32016-CV-TS-003-F0	Specification for Drainage System
1602088-32016-GE-005-F0	PROJECT Reference Codes and Standards
1602088-32016-MG-TS-004-F0	Specification for Acoustical Insulation
1602088-32016-PM-GE-001-F4	PROJECT Procedures and Administrative Requirements (General PROJECT Requirement) Section 9. SHE
1602088-32016-PM-GE-008-F0	List of Documents to be Submitted During Detail Design for Each Discipline. Appendix F. Section 1.5 SHE
1602088-32016-PM-GE-015-F0	Site Safety and Security Procedure (Template)
1602088-32016-PM-GE-019-F0	Change Procedure
1602088-32016-PM-GE-028-F0	Environmental Impact Assessment (EIA). Appendix E-1 REPLACED by the Approved EIA
1602088-32016-PM-RPT-103-F0	PTT Environmental Management Plan
1602088-32016-PM-RPT-104-F0	PTT Personnel Protection
1602088-32016-PM-RPT-105-F0	PTT Environmental Specification
1602088-32016-PM-RPT-106-F1	PTT SHE Legislation
1602088-32016-PM-RPT-109-F1	PTT Corporate Worksite Health, Safety & Security Requirements
1602088-32016-PM-RPT-110-F0	PTT Corporate SH&E Pre-Qualification Expectations
1602088-32016-PM-RPT-111-F0	PTT Corporate Work Site Environmental Requirements
1602088-32016-PM-RPT-113-F0	PTT Safety and Health Management Plan
1602088-32016-CS-RPT-024-F0	Guideline for SIL Study
1602088-32016-CS-RPT-025-F0	Safety Requirement Specification (SRS)
1602088-32016-PM-RPT-009-F2	QRA Report

1.2.3. Local regulations

- All site activities shall be in compliance with all relevant SHE local laws, decrees and regulations.

1.2.4. Project references


122018-SPCC-C-SH-PR-0039	Emergency Preparedness and Response Plan for Commissioning
122018-SPCC-C-SH-PR-0040	Waste Management Plan for Commissioning
122018-SPCC-C-SH-PR-0002	SHE Procedures (detail sect 3.2.1)
122018-SPCC-C-SH-PR-0003	SHE Training procedure

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122018-SPCC-C-SH-PR-0004	Environmental Management Procedure
122018-SPCC-C-SH-PR-0005	Health Management Procedures and Planning
122018-SPCC-C-SH-PR-0006	PPE Management procedure
122018-SPCC-C-SH-PR-0007	Confined Space Procedure
122018-SPCC-C-SH-PR-0008	Crane, Rigging and lifting, Scaffolding, Excavation work safe Procedure
122018-SPCC-C-SH-PR-0009	Hazardous Chemicals and Substance Procedure
122018-SPCC-C-SH-PR-0011	Hand Tools and Machinery Safety Procedure
122018-SPCC-C-SH-PR-0013	SHE AUDIT procedure
122018-SPCC-C-SH-PR-0014	Incident Notification and Investigation procedure
122018-SPCC-C-SH-PR-0015	Simultaneous Operation Procedure
122018-SPCC-C-SH-RPT-0016	SHE Action Tracking System Report
122018-SPCC-C-SH-PR-0017	Emergency Preparedness and Response Plan for construction
122018-SPCC-C-SH-PR-0018	SHE RISK Assessment and JSEA procedure
122018-SPCC-C-SH-PR-0019	Safety Health Environment Policy
122018-SPCC-C-SH-PR-0020	SHE Requirements for SUBCONTRACTOR and Vendors
122018-SPCC-C-SH-PR-0022	Alcohol & Drug Policy
122018-SPCC-C-SH-PR-0024	Environmental Monitoring Plan
122018-SPCC-C-SH-PR-0025	Spill Contingency Plan
122018-SPCC-C-SH-PR-0029	Security Plan
122018-SPCC-C-SH-PR-0032	Environmental Management Plan
122018-SPCC-C-SH-PR-0037	SHE Monthly Report
122018-SPCC-C-SH-PR-0024	Environmental Monitoring Plan

1.2.5. Contractor Corporate References


STD-COR-SHE-103	SHE Risk Management
STD_GR-GROUP-SHE-005	Emergency and Crisis Management
STD-COR-SHE-117	SHE Audit
STD-COR-SHE-112	SHE Work Permits
STD-COR-SHE-109-E	SHE Competence, Training and Awareness
STD-COR-SHE-109	SHE Competence, Training and Awareness
	Contractor Life Saving Rules (LSR)
	Leadership in Health and Safety* (LIHS)

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2. DEFINITIONS AND ABBREVIATIONS

The abbreviations and definitions listed; when used in this document will have the meanings described here.


Corporate	All Functions and Departments of Contractor with the role of guiding and controlling, for the whole Group, the relevant processes, issues and aspects that are necessary for corporate governance
Sector	The whole of a Division or Lead Company and all of the Subsidiaries and Branches that report to it
SHE MS	Part of the company management system which includes the organisational structure, planning activities, guidelines, standards and principles for developing and implementing the SHE policy, establishing and achieving SHE and social objectives and implementing continuous improvement in the SHE risk management process
Subcontractor	Company involved in the execution of prescribed works under a contract with the Contractor
PTTLNG	PTTLNG
PROJECT	NongFab Lng Receiving Terminal Project
CONTRACTOR	SPCC JV
ALARP	As Low As Reasonably Practicable
EMP	Environmental Management Plan
EPC	Engineering, Procurement, Construction & Commissioning
ERP	Emergency Preparedness and Response Plan for Commissioning
FSHEM	Contractor Field SHE Manager
HAZOP	Hazard and Operability
HRA	Health Risk Assessment
SHE	Health, Safety & Environment
JSEA	Job Safety Environment Analysis
LIHS	Leadership in Health & Safety
MERP	Medical Emergency Response Plan
PD	Contractor Project Director
PSHEM	Contractor Project SHE Manager
SM	Contractor Site Manager
COM	Contractor Commissioning Manager
RA	Risk Assessment
SIMOPS	Simultaneous Operations Analysis

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subcontractors, ensuring that time, cost, quality, health, safety and environmental protection requirements for the pre-commissioning, commissioning and start up activities are met.

Duties include:

- participating in project planning and scheduling, liaising for this purpose with other organisations and functions involved in executing the project and assuring the most suitable solutions in terms of assembly sequences, works scheduling, constructability, etc, in accordance to project SHE procedures;
- checking that the procedures defined for site activities are developed considering all the SHE risks;
- coordinating and supervising the works carried out on a direct hiring basis or by subcontractors and validating their accounting, supported by the DS positions.
- Ensuring that all the activities are carried out with project SHE Permit to Work procedure;
- Participate to the weekly SHE Management Meeting and Management Safety Walk; ensure the participation also of the relevant DS;
- Ensure that the activities are performed in accordance to the Methods Statement and relevant Risk Assessment and/or Job Safety Environment Analysis;
- Participate to the Incident Investigation whenever required.
- representing, insofar as within remit, the CONTRACTOR with PTTLNG, Licensors, Partners and SUBCONTRACTORS, and also managing all the SHE contractual aspects;
- ensuring, insofar as within remit, the review of SHE contractual documents;
- ensuring compliance with applicable and/or local SHE laws and regulation,
- undertaking a leadership role in the SHE process;
- Chair the site safety Committee dealing directly with the SHE Officer in professional level nominated for the project.
- setting standards for safe and healthy execution of pre-commissioning, commissioning and start up works, and ensure full dedication by all personnel to Zero Accident Tolerance;
- ensuring that all line management and supervision conduct their duties in a manner which supports the Zero Accident Tolerance philosophy;
- ensuring the safe and healthy completion of all pre-commissioning, commissioning and start up activities;
- ensuring sufficient resources are available, in terms of equipment and qualified personnel, to effectively manage SHE issues;
- ensuring that all site personnel are competent, qualified and adequately trained to perform duties given to them during the course of the pre-commissioning, commissioning and start up phase;
- ensuring the provision of adequate fire prevention and protection measures and equipment;

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WMP	Waste Management Plan			
LOTO	Lock out tag out			
LNG	Liquefied Natural Gas			
PTW	Permit to Work			
LSR	Life Saving Rules			
				
Confined Space	By passing Safety Control	Driving	Energy Isolation	Hot Work
				
Line of Fire	Safe Mechanical Lifting	Work Authorisation	Working at Height	

3. ROLES AND RESPONSIBILITIES

3.1. Project Director

The overall Project Director/Project Manager ensures the achievement of established project health and safety objectives assigned.

The Project Director/Project Manager function includes:

- representing Contractor with the PTTLNG, Licensors, Partners and Subcontractors, and managing all the SHE contractual aspects;
- ensuring the review of SHE contractual documents;
- defining SHE project strategies;
- supervising site activities;
- supervising project activities regarding aspects relating to health, safety protection of the environmental and local communities, through the project organization positions;
- promoting LIHS, Life Saving Rules, Keep Your Hand Safe and Dropped Object campaigns implementation during project execution;

3.2. Contractor Site Manager (SM)

The SM ensures the performance of pre-commissioning, commissioning and start up activities carried out on a direct hiring basis or manages the pre-commissioning, commissioning and start up works carried out by

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- ensure that basic site medical facilities (first aid) and medical support are in place before and throughout construction activities;
- ensuring that the project ERP is fully implemented;
- ensuring that CONTRACTOR line management participates, contributes actively and exercises leadership in its respective individual and collective project safety meetings;
- ensuring the CONTRACTOR PPE needs are adequately funded;
- ensuring that every work activity performed by the SUBCONTRACTOR, vendors and suppliers (if any) is executed in a safe and controlled manner;
- establishing and maintaining a direct line of communication with the CONTRACTOR Field SHE manager (FSHEM);
- implementing an employee incentive scheme;
- conducting unscheduled meetings as necessary at his discretion or on request of the CONTRACTOR Field SHE Manager (FSHEM);
- supporting "accident reporting" motivation;
- implementing LIHS and Life Saving Rules campaigns during the execution of the project;

Note: in case SM is temporary not be available at Site, he will nominate a substitute and will communicate it to all concerned.

Site Manager is responsible for the interfaces with:


- PTTLNG
- Police, Civil defence and Hospital;
- Local Authorities, Municipality;
- SUBCONTRACTORS;
- Suppliers and Vendors.

Site Manager case by case avails himself of the support of the Community and Interface Manager

3.3. Project SHE Manager (PSHEM)

The project SHE Manager (SHEM), reporting to the senior position in the overall Project Director (PD), shall manage and supervise Project activities within their remit relating to health, safety and the environment during Project development phase, ensuring that the SHE MS is correctly applied.

- Pre-commissioning, commissioning and start up's phase duties include:
- definition of Project SHE objectives in accordance with PTTLNG and CONTRACTOR SHE Policy and contractual requirements;


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- ensuring preparation and the first release of the SHE Plan for pre-commissioning, commissioning and start up phase;
- coordinate and lead SHE Audit and Review activities for the project (Home Office and site);
- be the prime SPCC contact for SHE matters.

3.4. Project Deputy SHEM

Deputy SHE Manager acting as SHE Manager during his absence at site, reports to the senior position at site Site Manager (SM), he shall manage and supervise Project activities within their remit relating to health, safety and the environment during all Project phases, ensuring that the Project SHE MS is correctly applied.

- assisting commissioning teams in Risk Management and Occupational Safety Risk Assessment;
- ensuring that CONTRACTOR SITE Manager (SM), Commissioning manager (CM) and Discipline Superintendents (DS) are supported in the field controls of CONTRACTORS/Suppliers with regard to SHE aspects;
- ensuring the qualification of the set of authorization processes relevant to SHE areas required for the site (e.g. water discharges, waste, etc.) and responsibilities for their implementation;
- updating the specific site's SHE Plans, and procedures and checks that they are correctly implemented by CONTRACTOR and SUBCONTRACTOR personnel through periodic audit at site.
- Checking all SUBCONTRACTOR's documentation in order to meet the PTTLNG requirement for the pre-commissioning, commissioning and start up activities.
- Assuring weekly checks of safety conditions and monthly checks of work equipment and protective devices;
- defining emergencies scenarios, Emergency Response Plans and arrange emergency drills;
- Update and check the CONTRACTORS' SHE Plan pre-commissioning, commissioning and start up and submits them to the CONTRACTOR Site Manager (SM) for approval;
- providing information and training of PTTLNG personnel and CONTRACTOR managers responsible for SHE;
- participating in the analysis of the causes of any accidents or injuries and also ensures the collection of data;
- supporting Project Director for the implementation of LIHS and Life Saving Rules campaigns at site.
- Verify the reports coming from the SHE Officers/Engineers
- Verify and issue the SHE Monthly report according to the contractual information required by 7th day of each month to PTTLNG through the CONZOL system.
- Ensure the CONTRACTOR internal reporting according to Annex 1 by the 1st week of each month;
- ensure that reporting of mandatory SHE matters to the appropriate regulatory.
- authorities is timely and accurate.

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- DSHEM manager ensure a full set of information for the EIA compliance to mitigation measures for pre-commissioning, commissioning and start up implemented into the SHE Monthly report for PTTLNG.

for the Training shall:

- ensuring that all personnel involved with pre-commissioning, commissioning and start up activities, including SUBCONTRACTORS and VENDORS (if any), are adequately instructed of the Project SHE Requirements;
- ensure training of all site personnel (on SHE matters) at any level of the project structure (SPCC Induction and trainings);
- arranged SHE training sessions (and specific training prior to start any work activity).

for the PPE shall:

- ensure compliance with local law or more stringent standards, contract, procedures, relating to the provision and use of PPE.

for the Hazard Management shall:


- ensure that all personnel are aware of the SHE requirements of their activities;
- manage the waste streams, compile and issue of documents and reports required in accordance with the Waste Management Plan and the EIA;
- plan and carry out, when necessary, studies and/or hazard analyses.

The SHEM / DSHE Manager avails himself of the collaboration of the:

- Safety Manager by Law, (CONTRACTOR SHE COORDINATOR)
- Environmental Specialist, and
- Security Coordinator.

for the following duties:

- Assure that all THAI laws, requirements are all implemented and tailor the SHE Management System under THAI law requirements.
- Coordinate all SHE and Security activities giving full support and consultant to the SHEM/DSHEM.
- Stop all work when THAI SHE and/or Security laws are not respected

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- liaise with the SUBCONTRACTORS' SHE Manager(s);
- notifying the SHEM and the SM, of any SHE related incident/accident involving personnel, equipment, property or environment;
- DSHEM is responsible for deliver SHE documents and information at site to SUBCONTRACTORS and requests to them to sign on the first page of each document shared in order to confirm the receipt.

for the Emergency Response Plan:


- report SHE incidents immediately to the SM;
- ensure plan update (scenarios, names, numbers, positions etc) and exist for dealing with potential emergency situations;
- ensure SUBCONTRACTORS have appropriate fire prevention procedures in their SHE documents, and that they apply them;
- investigate injury, damage and near miss, accidents independent of SUBCONTRACTORS
- SHE Manager and/or jointly with them.

for the SHE Meetings the deputy SHE manager:

- prepare and minute the Site Management Safety Meeting;
- organise, attend and participate in relevant SHE Meetings (Supervisor's Safety Meeting);
- support supervisors and foremen with specific meeting format and content as necessary;
- generate a monthly log of meetings scheduled, meetings held, topics and attendance and submit the log to the SHEM and the SM.

He/She shall conduct regular site SHE Audits, Reviews and Inspections according to this plan. The objectives are detailed in the following:

- check implementation/compliance with the SHE documentation (updating and reviewing, as required);
- conduct regular Inspections;
- check the implementation, content, participation and effectiveness of specific dedicated meetings (see 8.3 sections) verifying compliance with SPCC SHE requirements;
- examine accident reports, perform statistical analyses and publicise the results as necessary;
- prepare a monthly SHE reports, collecting all informations from all SUBCONTRACTORS and CONTRACTORS department, for the SHEM and the SM review (SHE Monthly Report Forms as per Annex1 by the 1st week of each month, and the SHE Monthly report for PTTLNG 122018-SPCC-C-SH-PR-0037 by the 1st week of each month).

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OHS&E Trainer shall:

Prepare and organize SHE Induction, develop and implement a training programme covering aspects such as abrasive wheels, enclosed spaces, breathing apparatus, harnesses, driving, etc, in line with Project Risk assessment results.

OHS&E Trainer shall keep the records and tracking system for the training and communicate on monthly base the relevant information for the monthly report to the DSHEM.

OHS&E Trainer ensure that personnel are aware of:

- SPCC and PTTLNG organisation and principal personnel;
- All employee SHE responsibilities under SPCC and PTTLNG rules;
- project SHE Policy and objectives;
- education and training programme;
- Health, Safety and Environmental practices;
- foreman's tool box talks;
- SHE information communication programme;
- SHE incentive programme;
- SHE discipline programme;
- Reporting hazardous conditions;
- other matters as necessary, housekeeping and sanitation procedures;
- Risk assessments.

Duties for other Environmental, Health and Security functions have been reported within the relevant documentation.

3.5. Commissioning Manager (COM)

The COM manages pre-commissioning, commissioning and start up activities, ensuring compliance of the activities within own area of responsibility with the established process and SHE requirements, while respecting the relevant time and cost targets. And submit "daily report" on everyday basis to PTTLNG as per 1602088-32016-PM-RPT-107 PTTLNG Pre-Commissioning, Commissioning and Acceptance Requirements. Duties include:

- Has overall responsibility for coordinating all site wide Pre-commissioning & Commissioning and Startup activities.
- preparation and keeping up to date, consistent with the other project plans and schedules, the integrated pre-commissioning, commissioning, start-up and test run Plan, defining operating procedures, logistics, activity scheduling, tools and control methods;

- participation in project review meetings in order to make sure that the pre-commissioning, commissioning and start up requirements have been duly complied with;
- preparation of documents and procedures for pre-commissioning, commissioning, start up and test-run activities, and checking that they are complied with (including the SHE and Social related aspects);
- coordinate with the CM to ensure that potential interference of pre-commissioning, commissioning and start up activities are managed and assessed in proper SIMOPs analysis;
- supervision of the test-run activities, including the measurements and laboratory tests;
- giving proper safety instructions to the Commissioning Team focusing the scope of work;
- ensuring preparation and checking of Purchase Requisitions (PR) and Technical Opinions falling within own area of responsibility;
- ensuring coordination among parties involved in the pre-commissioning, commissioning and start up activities;
- ensuring that all pre-commissioning, commissioning and start up activities are carried out in compliance with SHE specifications;
- Ensures that Project safety policies are set in place and followed.
- Ensures that Project safety procedures are delivered to related parties.
- Coordinates and establishes pre-commissioning, commissioning and start up schedule.
- Coordinates and establishes start up schedule.
- Daily consolidated reports to the Client, PMC and Site Project Manager.
- Defining personnel mobilization.

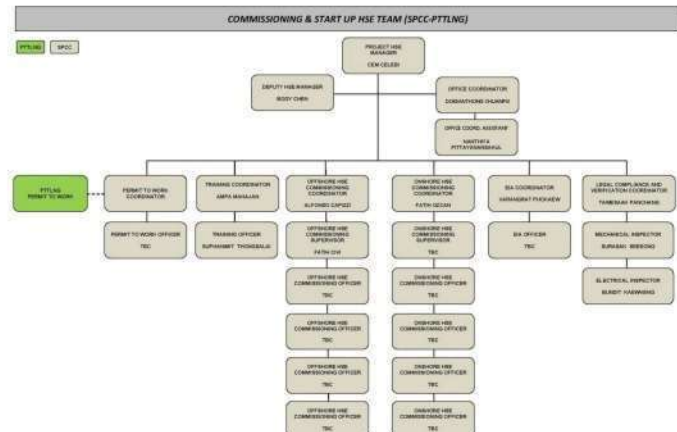
- Supports the Commissioning Manager in coordinating all site wide pre-commissioning, commissioning and start up activities.
- Acts as Commissioning Manager when Commissioning Manager is absent from site.
- Reports to the Commissioning Manager.

- Has overall responsibility for executing pre-commissioning, commissioning and start up activities in designated areas.
- Has responsibility for organizing the testing and completion of Sub system to meet acceptance criteria as outlined in the Quality Control Plans within area of responsibility.
- Reports to the Commissioning Manager or his deputy.

10. Vendors

- During pre-commissioning, commissioning and start up activities, Vendors will be under the direct control of relevant Contractor Commissioning Disciplines.
- All Vendors must supply a schedule before any work can proceed which will then be jointly reviewed by the relevant Discipline and Commissioning prior to the commencement of work.

The SHE organizational structure is composed of experts who combine the SHE skills typical of engineering with those of plant pre-commissioning, commissioning and start up (SHE Overall Management). These experts are coordinated by the Project SHE Manager which guarantees the proper application of the SHE MS during all the Project phases.



- Commissioning Supervisor
- Has responsibility for executing testing and completion of Sub systems to meet acceptance criteria as outlined in the Quality Control Plans within area of responsibility.
- Reports to the Commissioning Manager and/or Commissioning Lead.

- Has responsibility for informing all adjacent work groups what activities are taking place and associated risks.
- Ensures that Tool box meetings are carried out correctly and that all personnel involved in all activities are aware of any risks.
- Assists the Commissioning Focal Point with the preparation of JSEA, barriers and other precautions as outlined in the safety plan.
- Intervenes where necessary to ensure compliance with all safety procedures.
- Instructs Sub Contractor Safety Personnel where necessary to ensure compliance with all safety procedures.
- Reports to the Project SHE Manager and Commissioning Manager where deficiencies can be improved.

- Has day to day responsibility for coordinating pre-commissioning, commissioning and start up activities in support of the Commissioning Team;
- Ensures that correct tools and equipment are available for executing all tasks.
- Ensures that suitably qualified personnel with Supervision are available to provide direct support during all pre-commissioning, commissioning and start up activities.
- Ensures that shift handovers occur (during 24 hour coverage) at the worksite and that a briefing is carried out for the oncoming shift.
- Ensures that communication plan and contact numbers for key personnel are in place.
- Follow the pre-commissioning, commissioning and start up procedures.
- Ensures that all Sub Contractor personnel understand scope of work and their responsibilities.
- Reports to the Contractor Commissioning Manager or his designate.

4. DOCUMENT UPDATING AND DISTRIBUTION

This plan is a live document. To ensure its accuracy and consistency, this document will be readily updated and maintained whenever the responsibilities of people involved or the specific scope of work will change. All revisions to this document will be done by Project SHE Manager (PSHEM) and signed by Contractor Project Director for final issue.

The distribution of this document is under the direct responsibility of Contractor Project Director.

The SHE Plan shall be distributed to (if present):

- Contractor Project Director (PD)
- Site Manager (SM);
- Commissioning Manager (COM);
- Commissioning Superintendent;
- Project SHE Manager (PSHEM);
- Project DSHE Manager (PDSHEM);
- Commissioning SHE Coordinator;
- PTTLNG/PMC;
- Subcontractors (during bidding phase)
- Subcontractors SHE Managers
- Supplier
- Vendors

Pre-commissioning, commissioning and start up phase, as well as each phase of the Project, will fully comply with PTLNG Policy Statements, SPCC SHE Policy Statement.

This policy statement that reflects the commitment of CONTRACTOR's to the protection of the Environment, and the Health and Safety of its personnel and all people that could be affected by its operations, as further detailed in the following sections. The SHE Policy is the basis upon which Project SHE objectives are set.

Through the implementation of our SHE management system, the SPCC management will:

- Prevent accidents resulting from our activities.
- Assess and manage the risk which may arise from our activities for people, assets or environment.
- Preserve our employees' physical integrity and preserve environment.

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- Meet or exceed the regulatory requirements of the Thai government through strict adherence to all applicable national, provincial and international laws.
- Report our performance against SHE objectives and targets to PTTLNG/PMC.


All SHE activities foreseen for the Project have the aim to implement SHE policy statements.

The Project has issued the following:

- SHE Policy
- Alcohol & Drugs Policy

Use of Alcohol and Drugs on the site shall be cause for immediate dismissal and permanent removal from the site. Testing for drugs and alcohol without cause (at random) or following any undesirable event, accident or near-miss will comply with laws applicable in Thailand.



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PTTLNG Nong Fab LNG Receiving Terminal Project

Project Alcohol and Drug Policy

SPCC Joint Venture is fully committed to achieving the highest standard of SHE performances by creating and maintaining a safe work condition for all personnel associated with PTTLNG Nong Fab LNG Receiving Terminal Project.

Management is strongly committed to ensure that personnel employed must not partake at any time, during the performance of the work or be under the influence of any alcoholic liquor, drug or other intoxicating substance, while on duty, other than for bona fide medical reasons.

It is not acceptable to bring substances at site or in any other project location or to be under the influence of alcohol or drugs at work or consume alcohol or drugs this includes paid and un-paid breaks.

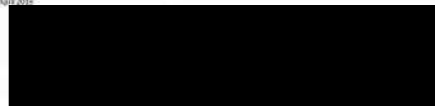
Use and/or detention of such items (i.e. Alcohol and Drug) on the site shall be cause for immediate dismissal and permanent removal from the site.

To:

- Ensure that the JV SPCC complies with legislation and Owner's requirement.
- Minimize the risks associated with alcohol and drugs in the workplace.

To make an early identification of who may be experiencing alcohol or drug problems specific Alcohol and Drug checks will be performed within the remit of Thailand Law.

Rev. 02 - April 2018



Inside the offices and on site several safety boards will be placed and SHE policies posted on. During induction and training SHE policies will be always emphasized and content explained to everybody that has to completely adhere to.

Respect and dissemination of all statements is a Project Management and SHE Management duty.

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6. PROJECT KPIS AND TARGETS

The trailing and leading indicators (KPIs) for Safety & Environment are part of the CONTRACTOR SHE reporting system.

They can also be used for setting measurable target objectives to manage SHE activities or establish safety bonuses for personnel or project.

SHE issues and performance including reporting on progress, reviews, action close out, areas of concern, incidents, mitigation measure implementation and monitoring records required in the EIA report will be part of the monthly SHE report.

Safety stats and KPI shall be also collected for internal use of CONTRACTOR according the forms attached on monthly base.

6.1. Targets for Trailing Safety & Environment KPIS

TRAILING INDICATOR	Project TARGET
Fatality (FTL)	Target = zero
Lost Time Injuries Frequency rate - LTIFR	LTIFR= 0
Total recordable injuries frequency rate (TRIFR)	TRIFR= 0.0226 (PTTLNG requirement)
Road Traffic Accidents (RTA) per 1,000,000 Km driven	RTA = as reported
Waste generation	as defines based on the EIA
Energy consumption	
Water consumption	
Spills	Maximum number of spills (> 100 liters) = zero
SHE deviations notified by third parties	Zero. (Examples of deviations: notification by PTTLNG, complaint by neighboring communities, notification or fine by authorities)

According to the PTTLNG requirements all indicators are referring to 200.000 man hours.


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6.2. Targets for Leading Safety & Environment KPIS

LEADING INDICATOR	TARGET
SHE Training hours	Comply with the Project SHE training schedule (by Project management based in CONTRACTOR head offices)
Management SHE visits	Project target 2 per year (by Site management No SHE)
Site Management Inspections	Project target > 1 per week [1/w recommended by PTTLNG]
Pre-job meetings	100 % realized by all teams/shifts
Tool Box Talks (TBT) weekly	100 % realized by all supervisors/foremen
Job Safety Environmental Analysis (JSEA)	Actual number is reported JSEA is required before starting any new job or any new job conditions or any hazardous job
SHE meetings	Comply with the project's Program
SHE Inspection	Comply with the Project SHE Inspection schedule To measure the number of SHOC cards completed To fix a target can be misleading : maximum of events reported (transparency & control) against minimum of undesirable SHE events)
Undesirable events reported	
Near Miss (NM)	To measure the number of NM reports completed. To fix a target can be also misleading
Investigation of notified incidents	100% investigated (including near-misses)
Km. Driven	Actual Km. reported for calculation of RTA frequency

6.3. Targets for Medical KPIS

Health indicators are detailed in the CONTRACTOR procedure and are also part of the CONTRACTOR SHE reporting.

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7. SHE MANAGEMENT SYSTEM

Contractor is ISO 45001 and ISO 14001 certified and Contractor SHE MS meet the above mentioned Standards

In accordance with principles stated in the Contractor SHE Policy, the SHE MS is established to ensure that Health, Safety and Environmental issues are comprehensively addressed at all stages of the Project life cycle, and that all design choices and decisions are justified with respect to their implications for Health, Safety and Environment during the following phases of the Project.

7.1. The SHE Management System In The Project Development

The application of the SHE MS to PTTLNG Project is based on four fundamental points:

- Organization;
- Assessment and planning;
- Implementation and operation;
- Controls and corrective actions.

7.1.1. Assessment and Planning


The main activities carried out by the SHE Team in the assessment and planning of the various phases of the Project are:

- the identification of hazards,
- the risk assessment,
- the identification of environmental issues to be kept under control,
- the definition of SHE objectives to be pursued,
- the identification of legislation and SHE requirements to be observed,
- the preparation of SHE deliverables.


These activities also involve specialists from other disciplines and the PD or SM.

7.1.2. Implementation and Operation

In order to achieve the SHE objectives defined in the assessment and planning phase all Project staff will be involved in the activities following described in this Plan.

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- Periodical Audits will be performed in order to verify the compliance with the applicable laws, Contractor corporate requirements, relevant international standards and the control of the Sub-contractor.
- A specific training program will be developed in order to cover all the training needs of the workforce, ensuring the compliance with the relevant project requirements, laws and regulations, applying where possible the standardized courses available in Contractor Delphi SHE training portal.
- Proper communication between Project staff and the upper levels of Contractor will be ensured in accordance with the relevant Contractor standards and procedures.
- Health:
 - Contractor promoted Health campaigns and programs will be actively sustained and implemented by the Project Team.
 - The repatriation cases of Contractor Employees for medical reasons will be reduced by establishing, as more as possible, well equipped health facilities, manned by highly qualified health professionals.
 - All the Contractor and its Subcontractors personnel involved in the execution of the project will be subjected to a Medical Fitness Examination following the Contractor requirements.
- Safety:
 - The Project management will establish and pursues the Project Annual Safety Performance Targets.
 - Contractor promoted Safety campaigns and programs will be actively sustained and implemented by the Project Team.
 - Incident Investigations outcomes and Project Safety Performance data will be reported and shared within the Contractor in accordance with the relevant Contractor standards and procedures
 - All the possible emergency scenarios will be properly assessed in order to minimize the emergency magnitude. Periodical drills will be performed at Site in order to ensure the prompt and efficient response to all the emergency reasonably foreseeable.
- Environment:
 - Project Team is committed to reduce energy consumptions, increase energy efficiency and, whenever possible, to prefer the use of renewable energy during the Project execution.
 - Natural resources saving (especially for water use) will be strongly promoted and encouraged.

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7.1.3. Controls and Corrective Actions

The proper application of the SHE MS is constantly checked by the Project SHE structure. This is a control which derives from the need to keep to schedule in executing activities and to reduce unforeseen events and risks to people and to the environment.

7.2. SHE Objectives

The main objectives of the Contractor SHE MS are summarized as follows:

- identification of all potential SHE and Social impacts associated with the Project, and application of prevention, control and mitigation measures to eliminate or minimize harm to people, damage to project or equipment, adverse environmental damage and safety of the local communities;
- minimization of the incidents likelihood during all phases of the Project and to guarantee a safe working environment for people, in compliance with the contractual SHE Requirements and Local, National and International Regulations;
- minimizing negative effects on the environment through environmental aspects management and the use of carefully thought out and executed design, procurement and pre-commissioning, commissioning, start up methods;
- promotion in adopting a positive, proactive, committed health, safety and environmental culture throughout all phases of the Project;
- pursuit of continuous improvement by regularly planning, implementing, auditing, and updating the System (i.e. Plan-Do-Check-Act cycle);
- project commitment, and active and visible leadership in promoting the correct application of the Project SHE MS to ensure that all hazards and environmental impact factors related to the Project are identified, their risks and environmental and social impact quantified and appropriate control and mitigation measures are taken to manage them;
- Increasing the SHE culture in the workforce;
- Be always prepared and resourced to manage, contain and de-escalate emergency situations;
- Ensuring continuous improvement through periodic Management SHE Reviews.

In particular, during the execution of the Project will be assured the following specific objectives:

- SHE MS:
 - The SHE MS will be implemented in order to assure the preservation of the ISO 14001 and ISO 45001 certification.

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- Environmental and social aspects and impacts related to the Projects activities will be properly assessed and managed.
- The Environmental performance data will be reported and shared within the Contractor in accordance with the relevant Contractor standards and procedures.

Further SHE Objectives can be defined at a later stage according with the Project needs.

7.2.1. Objectives Management Review

Project Management will review, at least once per year, the Project SHE MS in order to ensure its continuing suitability, adequacy and effectiveness, giving its feedback to the Contractor Head Office.

Annual Objectives and Targets will be reviewed in the following cases:

- When the targets are failed or not reasonably achievable
- In case of project top management changes
- In any case, at least, once per year.

7.3. Leadership and Commitment


Contractor Project Management will demonstrate strong and visible leadership and commitment concerning Health, Safety and Environment management, and will be directly involved and responsible for the SHE MS implementation.

Project Management will work actively and systematically on SHE issues within the organization, and ensure that all decisions and practices are in line with the principles of the SHE MS.

Such commitment will be transmitted to all the levels from the PD down throughout the organization.

Contractor commitment will be realized through and witnessed by:

- Positive and proactive SHE attitude by the Project Management and the work force;
- Visible management participation in activities as SHE meetings, audits, accident investigations, reviews and hazard identification system;
- Planning and implementation of SHE and social action plans, assessment of results and initiation of corrective actions for continuous improvement
- Planning and organizing the work in a safe manner prior to executing the tasks, by conducting Risk Assessments for all the operation to be performed and in particular for non-routine and hazardous activities
- Provision of suitable training, supervision, information and instruction to all concerned personnel;

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- Regular, active and responsible participation of all personnel in SHE training courses, Job Safety Environment Analysis, Tool-box Meetings, which have to be conducted by suitably qualified SHE personnel;
- Providing safety of the personnel, safe site, equipment, personal protective equipment and safe systems of work;
- Acceptance and accountability of the responsibility for accidents and incidents in the workplaces
- Performing of accident investigation and review of occurred accidents, and further identification of remedial and preventive actions;
- Introduction of systems to encourage all workforce in providing suggestions and proposals for improvements in SHE performance.

7.3.1. Leadership In Health And Safety Program (LIHS)

Contractor has developed an innovative and highly interactive training program with the aim of creating and enforce a strong Safety and Health Culture within the organization starting from the Management: the Leadership in Health and Safety Program (LIHS).


In order to achieve this cultural change, the main objective of LIHS is to begin the improving process of our managers in fully matured Safety Leaders.

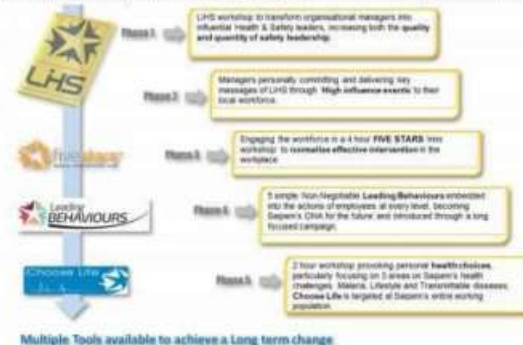
A clearly defined top down strategy enables each level of management to become safety ambassadors, sponsoring the next levels in order to touch every manager within the organization, and in addition delivering critical safety messages down to every employee.

In addition to this, an innovative bottom-up approach was developed, which utilizes the 'personal social influence' of selected employees who actively work to instill the 5 leading behaviours into the organization at local levels.

The implementation of the LIHS program will be evaluated by Contractor Management for the Contractor's personnel.


The opportunity to extend the LIHS program to other personnel involved in the Project, if any, will be evaluated according to the PTTLNG requests.

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Since the release and integration of the Contractor Health & Safety Vision into our company in 2007 we have collectively made great progresses in improving our safety culture. The vision communicates our ambitions and commitments to achieving this and sets the highest industry standards, through a solid basis of shared health and safety values.




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7.3.2. Contractor Life Saving Rules Campaign

Contractor has launched within its organization a new safety campaign, called "Life Saving Rules". These rules are already present within Contractor's existing company SHE MS, programmes, procedures and policies; their purpose however is to give a heightened awareness of the activities which are most likely to result in fatalities.

Life-Saving Rules materials that were based on the International Association of Oil & Gas Producers Life-Saving Rules (LSR) (Report No. 459 April 2013 (Version 2)), who made their material freely available to implement. As the IOGP strongly recommends, the rules have been adapted to reflect CONTRACTOR's communication style, use of multiple languages, and complexity of diverse operations. The fundamentals of each rule and icon remain the same.



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Contractor's Life-Saving Rules are the last line of defence in protecting our people, whom we regard as our most valuable asset. This also extends to subcontractors' personnel working alongside us. These rules are not intended to 'stand-alone!', as they can only be effective if they form an integral part of our everyday workplace behaviours & procedures, rejecting the silent killer of complacency.

It must therefore ensure that:

- All personnel are fit & able to undertake their designated work activities;
- Personnel are not under the influence of alcohol or drugs, as stated in company policies & procedures;
- Work does not commence until all personnel are able to confirm that they are able to follow the rules that are relevant to their work activity;
- All work is suitably assessed, planned & executed, with safety as our most important guiding principle;
- All personnel are equipped with the knowledge, skills and equipment that they require to perform their work in a safe and efficient manner;
- All personnel are empowered to intervene and to 'stop the job' anywhere, or at any time when safety may be compromised.

The LSR work card is issued to all personnel to serve as the final check before work commences, helping you to comply with the rules.



- LSR Work Card -

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Personnel MUST confirm their ability to comply with the scope of the Life-Saving Rules relevant to their work BEFORE commencing ANY work activity.

If work activities change or deviate from the agreed plan, work MUST stop and not recommence until new authorisation has been acquired and personnel confirm that they are able to comply with the scope of the relevant Life-Saving Rules.

7.3.3. Keep Your Hand Safe

Accidents involving hands are not fatal but may have serious consequences on the people's quality of life. 90% of people's daily activities are done using the hands. The identified causes can be the wrong or inadequate use of working tools and equipment, the lack of knowledge of the basic safety rules, or the inadequate use of personal protective equipment.

Therefore, this program has developed actions on the following levels:


1. Technical: machine, equipment, tool;
2. Work environments: pinch point identification;
3. Personal protective equipment;
4. People: leadership and commitment, awareness and training.

The 4 Campaign key prevention axes are:

MANAGEMENT LEADERSHIP AND COMMITMENT <ul style="list-style-type: none"> Leadership: from start, on the field All along the campaign deployment Follow-up: 	COMPLIANCE: METHODS, EQUIPMENT, TOOLS AND PPEs <ul style="list-style-type: none"> Ensure provision of Safe equipment, tools, PPEs (Personal Protective Equipment) Ensure use of Safe methods, equipment, tools, PPEs
SAFETY AWARENESS <ul style="list-style-type: none"> Increase Workers Awareness on Hands Safety Induce an Attitude change 	LEARNING AND SHARING <ul style="list-style-type: none"> Ensure learning and sharing from the workplace Learn from the past events and incident reports



Subcontractors shall adhere and support the implementation of Contractor Keep Your hand Safe Campaign and implement the required actions within their own Project organization.

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8. SHE ACTIVITIES


8.1. Activities Overview

The main SHE activities that will be carried out during the pre-commissioning, commissioning and start up phases of the Project will refer to:

- Identification and assessment of SHE risks for the contracted job, covering hazardous equipment, workplace hazards, hazardous substances and harmful agents;
- Identification and assessment of the environmental and social aspects connected with project activities and define the relevant mitigation measures
- Choice and implementation of risk mitigation measures;
- Implementation of specific ERP in case of emergency occurrence;
- Issuing and implementation of safe working procedures for performing hazardous jobs, briefing of all personnel involved with the work regarding hazards and know-how of their avoidance;
- Preparation and implementation of project SHE training program to increase the level of knowledge for all the people involved in site activities;
- Performing routine checks of site firefighting and safety equipment to ensure they function correctly; routine checks on personnel working practices, ensuring they wear proper site clothing and PPE;
- Implementation of accident / incident investigation reporting procedure and monitoring that corrective actions to prevent reoccurrence of accidents are implemented;
- Reporting to Contractor organization and to PTTLNG the status of planning and implementation of activities to ensure safe pre-commissioning, commissioning and start up activities;
- Inspecting all machinery and equipment used;
- Perform periodically audits and inspections to ensure the correct SHE management;
- Implementation of Training Matrix;
- Verification of the monthly inspection of equipments and gears completed by CONTRACTOR and SUBCONTRACTORS.

CONTRACTOR developed Safety pre-commissioning, commissioning and start up procedures according to the Contractual requirements and collected them all together into the "SHE Plan for Commissioning and Start Up", that shall comply with PTTLNG and CONTRACTOR requirements together with relevant industry codes, practices and norms and any mandatory regulation imposed by THAI authorities.

SHE Audits and inspections will be performed by CONTRACTOR during the pre-commissioning, commissioning and start up Phase of the Project, in order to ensure that the site activities shall be executed in accordance with the applicable laws, Safety Codes, SHE requirements, Regulations and good operations practices.

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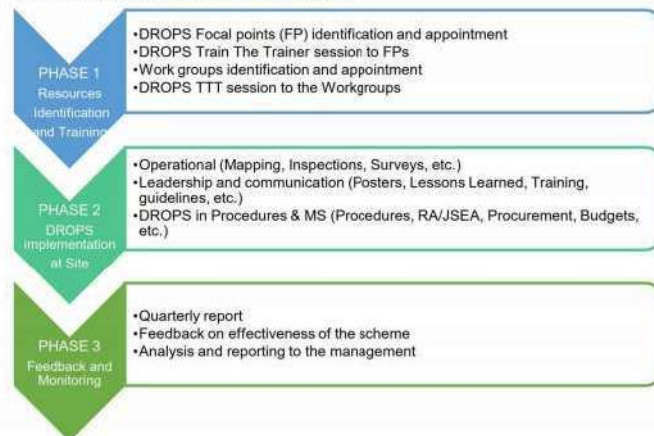
7.3.4. Dropped Object

A dropped object is any object or item of any mass, material or density that falls from its previous position. Dropped objects derive their capability for injury and damage from the conversion of their potential energy to kinetic energy prior to impact.

Dropped objects generate energy as they fall resulting in an impact force that can lead to fatalities, severe injuries, asset and equipment damage, loss of containment or control and damage to business reputation.

Following several high potential incidents, where dropped objects were involved, Contractor E&C has launched a Dropped Object Prevention Scheme (DROPS), in line with the current Best Practices, in order to improve and facilitate compliance with applicable Contractor Policies, Safe Systems of Work and any local or regional industry Codes, Rules, Laws, Conventions, Legislation, etc..

The Campaign will be articulated in different phases:



Subcontractors shall adhere and support the implementation of Contractor Drop Object Campaign and implement the required actions within their own Project organization.

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Each SUBCONTRACTOR SHE Manager is required to provide signed copy of the CONTRACTOR's Policy/Manual/Plan and procedures to confirm that he has read, accepts and understood. It's responsibility of each SUBCONTRACTOR to define which specification may apply to their scope of work and provide justification for not being applicable for the CONTRACTOR's final approval. SUBCONTRACTOR shall bring to the attention of SHE department any totally or partially misalignment /inconsistency/not applicability of the documents in this plan. The acceptance of the SUBCONTRACTOR's SHE documentation doesn't relieve the SUBCONTRACTOR to strictly adhere to THAI regulation and applicable Site SHE rules.

8.2. Main SHE Deliverables

A preliminary list together with a brief description of the main SHE deliverables foreseen for the pre-commissioning, commissioning and start up phases is given below:

1. Safety Plan for Commissioning, Start Up and relevant procedures
2. SHE Risk Assessment for Pre-Commissioning and Commissioning activities
3. Emergency Response Plan for Pre-Commissioning and Commissioning
4. Waste Management Plan for Commissioning (WMP)

8.2.1. SHE Plan for Commissioning and Start Up

SHE Plan for Commissioning and Start Up defines all SHE working procedures that Contractor will apply during the pre-commissioning, commissioning and start up phases of the Project in order to properly face the SHE hazards that characterize the tasks forming the job and to avoid SHE accidents occurrence.

The SHE Plan constitutes a reference document for the SHE hazards identification, and control relevant to the whole pre-commissioning, commissioning and start up stages.


Additionally, the SHE Plan will state provisions for PPE, Safety signs and Barriers, inspections, audit, critical lifting and planning, etc.

This document will contain all Site SHE procedures to be implemented.

8.2.2. SHE Risk Assessment for Pre-Commissioning and Commissioning

CONTRACTOR shall provide information and input as required into PTTLNG's Report on Protective Measures for Operational Safety as required by Notification of the Ministry of Industry No: 3 (BE 2542) issued under the Factory Act BE 2535. The information shall be supplied based on the safety reviews, hazard and risk assessment carried out by CONTRACTOR.

Contractor's management will ensure that every work activity performed under the Contractor responsibility, by Contractor and its Subcontractors, vendors and suppliers is executed in a safe and controlled manner.

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For each activity performed during pre-commissioning, commissioning and start up phases, a Qualitative/Quantitative Risk Assessment will be prepared.

All tasks will be subject to a written Method Statement, a Risk Assessment (RA) / Job Safety Environment Analysis (JSEA) carried out by competent persons, and submitted to SHE and Commissioning representatives for review and approval.

A RA shall be required for each Subcontractor activity, and mitigation measures shall be implemented before work commences.

Carry out a RA means to make a preliminary evaluation of risks and the evaluation of residual risks as result of the application of mitigation measures; the methodology deriving from the definition of risk is applied using a Risk Matrix:

- Probability Rate (P): quantification of the probability that a dangerous situation may result in harm to the exposed personnel;
- Severity Rate (S): quantification of the magnitude, namely the severity of the consequences for the exposed personnel that may cause harmful situations to degenerate;
- Risk Rate (R): the product of the probability rate (P) by the severity rate (S).

In this way it is possible to determine which concurrent activities need to be further investigated regarding safety and environmental aspects that are not normally foreseen, to improve a good site method statement.

Based on Risk matrix evaluation, it is possible to determine three levels of SIMOPS criticality having as result a SIMOPS Risk Matrix as in the Annex 1 to be considered as preliminary:


HIGH risk activities

In this case pre-commissioning, commissioning and start up activities are not permitted. The activities could be carried out by modifying the schedule in order to transform commissioning in sequential operation.

MEDIUM risk activities

The main instruments utilized by the Management to analyse and solve the Commissioning activities result in reviewing to be done during the coordination meeting and applying Permit to Work System.

Before activities start, a dedicated method statement has to be issued, by considering activities. In this case commissioning activities are permitted only if actions written in the Risk Assessment.

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- Assists personnel on how to perform operations, by breaking the job task down into individual steps and identifying risk and control measures for each individual step;
- Improves efficiency by identifying incorrect procedures or work instructions;
- Increases employee involvement in the safety process;
- Enhances communication between management and employees regarding safety concerns;
- Contributes to the productivity of a job by eliminating or reducing its injury potential;

The complete JSEA Methodology will be detailed in a specific Contractor documents SHE RISK Assessment and JSEA Management doc n 122018-SPCC-C-SH-PR-0018

8.2.4. Emergency Response Plan for Commissioning

The Emergency Response Plan has the aim to approach a site emergency and demonstrate that all the possible hazardous situations are properly identified, managed, reported and dealt with a safe, efficient and effective manner.

The ERP will describe the emergency system that the Contractor applies to the Project, in order to face the accidents that can occur during pre-commissioning, commissioning and start up phases.

Contractor initial ERP will be reviewed, if necessary, with PTTLNG to coordinate the mobilization of the following resources into a global ERP:


- the community (firemen, hospitals and doctors, police force, etc.);
- PTTLNG resources.

The ERP will be transmitted to:

- Control Personnel;
- Emergency Services;
- Employees who may be affected;
- PTTLNG/PMC Representative;
- Others likely to be impacted.

and will cover:

- organization, responsibilities, authorities and procedures including the maintenance of internal and external communications;
- systems and procedures for providing personnel refuge, evacuation, rescue, medical treatment and repatriation;

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LOW risk activities

Existing Safeguards and existing safety control analysed during the coordination meeting have to be evaluated to consider if are enough to guarantee the safety conduction of pre-commissioning, commissioning and start up activities, or if the additional control measures are required. In both the cases respecting the criteria activities are permitted.

The complete process will be detailed in a specific CONTRACTOR document SHE RISK Assessment and JSEA procedure 122018-SPCC-C-SH-PR-0018

A separate document shall be issued the risk assessment of all activities performed on the project during each phase, specifically for commissioning into the doc n. 122018-SPCC-C-SH-RPT-0008 Safety Risk Assessment for Commissioning and Start Up

8.2.3. Job Safety Environment Analysis

The Job Safety Environment Analysis (JSEA) is an excellent and efficient technique for identifying unsafe conditions and acts in the working environment.

A JSEA is intended to analyse the individual steps or activities, which create a job or specific work duty, and to detect any specific potential hazard that may be released in the working environment.

Before starting every activity under the Contractor responsibility, Commissioning and SHE representatives will be accountable for a Job Safety Environment Analysis (JSEA), bearing in mind:


- The related Safety Manual procedure;
- The risk assessment;
- The available equipment;
- The other interfering activities;
- The number of workers to realize the job;
- The existing environment (including weather conditions) where the work has to be executed.

The resulting JSEA will be recorded and updated if any element should change.

The JSEA is commonly used to identify less obvious or specific potential hazards that may go undetected or being missed during routine management observations or audits or during the general RA analysis.

Moreover it:

- Can be performed relatively quickly for less protracted tasks;
- Identifies actual and potential physical hazards in the work environment, and helps determine how they should be managed;
- Reveals hazardous motions, postures, activities or work practices of individual employees;

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- systems and procedures for preventing, mitigating and monitoring environmental effects of emergency actions;
- procedures for communicating with authorities, relatives, the media and other relevant parties;
- arrangements for training response teams and for testing emergency systems and procedures.

The following scenarios will be covered as a minimum by the ERP:

- worksite injuries;
- safe escape and evacuation from site during emergencies;
- natural disasters (e.g. earthquakes);
- road traffic accidents;
- fire and explosion;
- missing person.
- Spill/Release

8.2.5. Waste Management Plan for Commissioning (WMP)

The Waste Management Plan will provide the guidelines to manage waste and wastewater produced during Project Site activities in order to ensure that each phase (collection, storage, transportation, reuse, recycle and disposal) is appropriately managed with respect to its implications on the environment and in accordance with International agreements, National Laws and requirements, including contractual ones.

This guideline will be followed by all Contractor and Sub-contractor employees throughout the site activities of the Project.


The objective of the Waste Management Plan is to identify and classify all wastes produced.

Each waste shall be classified, its quantity estimated and its disposal methods detailed (recycle/reused/treated).

The WMP is of primary importance in ensuring that disposal/facilities options are selected and justified with respect to their implication on the environment.

The scope of the WMP is to:

- Describe how the wastes will be managed (handling, collection, storage, transportation, disposal and record keeping);
- Provide guidance to the Contractor personnel for managing their wastes effectively and within the applicable waste regulation requirements;
- Provide guidance for the collection, handling, and temporary storage of each waste generated during operational activities to protect human health and to minimize the impact on the environment and the local communities;

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- Control the amount of waste generated following good operating practices and respecting waste reduction principles;
- Give guidance for waste reduction according to the hierarchical application of the practices of reuse, recycling, recovery, treatment and final disposal in approved disposal sites.

The WMP will define the treatment of Waste Water also, i.e. Sewage Waters and Hydrostatic Test Waters. The WMP is a living document, which shall be updated and reviewed as necessary on site according to actual site conditions and actual waste streams being generated.

Reference : 122018-SPCC-C-SH-PR-0040 Waste Management Plan for Commissioning

8.2.6. SHE Training and Information Program

SHE training requirements will be identified as the gap between what an individual needs to know, in order to ensure the assigned tasks are performed safely and healthy, ensuring the protection of environment and local communities, and what he actually knows (due to training / qualifications / previous experience).


To provide information, instructions and training, Contractor will put in place a specific SHE Training Program for workers, on the basis of minimum SHE training needs, with the scope of familiarizing personnel with the rules to enforce in order to prevent injuries/accidents occurrence and allow staff work competently, safely and healthy in the tasks allocated, to increase efficiency and employee job satisfaction.

The Contractor SHE Team has the responsibility to organize and plan the SHE induction course for all workers and specific training for supervisors, SHE officers, emergency team and critical works or activities.

The Contractor Training Program is composed of:

- Site SHE Induction for every employee entering the site;
- General SHE Orientation for every employee working on the project;
- Training course for workers, supervisors and SHE personnel, as per training matrix (refer to Delphi presentations);
- Emergency response and rescue drills;
- Environmental training;
- Training refreshing courses for workers and supervisors.
- Tool-Box talks;
- Daily Job Specific SHE Talks;
- Others as deemed necessary.

General awareness of health, safety and environmental issues will be introduced during the General SHE Orientation and Training for all project personnel, with particular attention to items including, but not limited,

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Inform their employees of any special SHE rules for working near operating plant.

Inform their managers, supervisors and personnel of the "emergency procedures" so that they may provide the leadership and control required.

These training sessions shall be documented and sent to the Contractor SHE Manager/DSHEM. The SHEM/DSHEM will monitor subcontractors' training activities to ensure that satisfactory standards are maintained.

Presentation and material to be used during the training, whenever possible should be in line with Delphi system presentations.

8.2.7. As-Built Report

CONTRACTOR shall prepare a Safety, Health and Environmental (SHE) As-Built Report and submit to PTTLNG/PMC for review and approval soon prior to commissioning the overall facilities.

The SHE As-Built Report will include, as a minimum: a description of PROJECT environmental setting, SHE performance, statistics and KPI monitoring, SHE issues, incidents and aspects of commissioning by Phase, selected photographs showing activity, and any permits, approvals and documentation issued during the pre-commissioning, commissioning and start up phases.

Deliverable: SHE AS BUILT REPORT doc n. 122018-SPCC-C-SH-RPT-0006

8.3. SHE Meetings

The following SHE Meetings will be performed during the pre-commissioning, commissioning and start up phases:


- SHE Committee Meetings
- EIA Committee Meeting
- Weekly SHE Meetings;
- Weekly Workforce Tool Box Talks;
- Daily Job Specific SHE Talks.

8.3.1. SHE Committee Meeting

The Site SHE Committee, comprising Contractor, PTTLNG and Main Subcontractors, will be established to jointly plan, control and monitor the SHE at the site.

The committee will be led by the Contractor Project Management. The committee includes the following members:

- PTTLNG Representatives;
- Project and Site Management;

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to: Permit to Work, firefighting, safety signs, housekeeping, hand tools and power tools, health diseases, scaffolding, manual handling, confined spaces, working at height, use of PPE's and escape, pollution prevention; SHE Policy statements and individuals' SHE responsibilities will be included as a fundamental requirement in orientation training.

Wider description within the SHE Training Procedure 122018-SPCC-C-SH-PR-0003

CONTRACTOR and SUBCONTRACTORS are responsible for deliver all necessary training, to each own employees, at their own cost.

SUBCONTRACTORS is required to continually reinforce the SHE message to their employees on general Site rules and train them in the SHE Requirements of their particular job.

If relevant with the performed activities, CONTRACTOR and SUBCONTRACTORS will inform their employees on:

- Risks identification, assessment & management (Job Safety Environment Analysis, work permit, environment awareness etc.);
- Personnel fitness (periodical medical check-up and/or vaccinations etc.)
- General operation safety (stepping-handling-lifting, personal protective equipment, working at height);
- Logistic safety (lifting gear, crane, forklift, container, motor vehicle transportation, personnel lifting);
- Mechanical safety (welding, cutting, sand blasting, painting);
- Pressure safety (compressed air, high-pressure circuits, pressure vessels, pressurized operations);
- Electricity safety (earth, lock out-tag out, classified zones);
- Safe handling and disposal of Hazardous material (fuels, acetylene, oxygen, radioactive materials, reactants etc.);
- Pollution control and environmental protection;
- Selection, use and care of all types of personal protective equipment;
- Life-saving and escape techniques (first aid, firefighting, emergency response/preparedness);
- Work at Height;
- Basic Safety Work practices for working on the sea
- Basic firefighting training for all workers;
- Chemical and Hazardous release;

Subcontractors shall also:

Inform their employees of the safe work methods to be adopted in their particular work including the use of standard PPE and additional PPE in line with Risk Assessment results;

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- SHE Manager;
- Main Subcontractors' Site Managers and SHE Manager.

The major functions of the committee are as follows:

- Review the SHE Activities Planned & implemented for effectiveness.
- Establish detailed, common Health, Safety, Security and Environmental activity targets and actions necessary to achieve those targets.
- Plan and conduct site SHE events and activities for the motivation and awareness of all employees.
- Review SHE performance and statistics of all participants. Evaluate the causes and consequences of poor performance. Make public the results to all personnel.
- Disseminate information on all Site incidents involving Health, Safety and Environment, and near misses, including any root cause analysis performed, actions taken, and lessons learned (i.e. incident reporting).
- Study necessary measures for improvement.
- Identify hazardous activities and co-ordinate necessary measures among the parties involved in the work.
- Identify items to be monitored
- Conduct safety patrols to audit and inspect all areas.
- Review and issue the results of audits and inspections and discuss necessary measures for improvement.
- Discuss safety and environmental orientation and training.
- At least once per year, review the adequacy of the Project SHE objectives and target and the suitability and effectiveness of the SHE MS.

The Committee will generally meet monthly or more frequently if needed with, as reference, the following standard agenda:

- Review of previous minutes of meetings;
- Review of results of joint inspections and actions taken;
- High risk activities;
- Current activities and problems;
- Accident review and corrective actions taken;
- Future activities.

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For compliance to Thai Law and the EIA:

SPCC shall act to comply with the Thai law for the SHE Committee in the CHAPTER-2, CLAUSE 23 of the Ministerial Regulation on the prescribing of standard for Administration and Management of Occupational Safety, Health and Environment B.E. 2549.

Minute of SHE Committee Monthly Meeting (MoM) shall be submitted together with the Safety professional report to the Labour Dept on every quarterly.

EIA monthly Committee meeting shall take place as specified into the approved EIA. It consist of representative from Communities, Government agencies, it's organized by PTTLNG, however the Chairman will be appointed from EIA Committee the and supported for the organization by CONTRACTOR and EIA's SUBCONTRACTOR.

8.3.2. Weekly SHE Meeting

During this meeting, Contractor and Subcontractor SHE depts. will plan and monitor the progress of the SHE activities implemented at site.

The presence of the site management could be requested depending the activities to be discussed.


The meeting will be commonly conducted once a week and minutes of the meetings distributed to the attendees, and Contractor and Subcontractor site management.

Every SUBCONTRACTOR establishes a weekly Safety report to be delivered during the SHE weekly meetings, such report contains at minimum the following past week information:

Worked hours

- Number of Lost Time Injuries - LTI
- Number of Restricted Work Cases - RWC
- Number of Medical Treatment Cases - MTC
- Number of First Aid Cases - FAC
- Number of Near Misses – NM
- Number of SHE inspections, audits
- Number of Safety Hazards & Observations Cards (SHOC)
- Number of SHE induction performed
- Number of Tool Box Meetings
- All information about significant events which occurred during the week.

The weekly Safety reports will be consolidated every month into the monthly Safety report, which will be communicated according to a distribution list established for the project.

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8.3.6. Other Meetings

If necessary, under Contractor evaluation, other Meeting could be held in order to assure the correct disclosure of all the SHE aspect or issue and the proper coordination of the activities.

8.3.7. Project Meeting Recap Table

If necessary, under Contractor evaluation, other Meeting could be held in order to assure the correct disclosure of all the SHE aspect or issue and the proper coordination of the activities.

KOM with SUBCONTRACTORS	<p>Prior to commencement of the works by the SUBCONTRACTOR, a kick-off meeting is carried out between CONTRACTOR, Partner and each of the SUBCONTRACTORS.</p> <p>Team members are Site Manager, Commissioning Manager and SHE Management of each party and other Management representatives.</p> <p>One of the objectives of the kick-off meeting is to present :</p> <ul style="list-style-type: none"> • Safety expectations and the specific SHE requirements of the Project • Site safety rules (including discipline) • Organizational requirements (meetings, audits/inspections, notifications, etc.)
Quarterly upon Site opening PMT Meeting	<p>PTTLNG, CONTRACTOR and SUBCONTRACTOR Project Managers conduct a Site visit and then meet to discuss the main following issues:</p> <ul style="list-style-type: none"> • Communicate to personnel stimulating but reachable objectives • Promote SHE culture and behavior • Create and evaluate the efficiency of the SHE organization in place • Review the global efficiency and the SUBCONTRACTOR's performances and encourage proactive indicator development • Share feedback and lessons learned sharing amongst the different parts of the Project.
Site SHE Monthly Meeting	<p>Management Committee with PTTLNG and SUBCONTRACTORS:</p> <p>CONTRACTOR Site SHE Manager sets one meeting per month with SHE representatives. These site-based SHE meetings shall be utilized to:</p> <ul style="list-style-type: none"> • Review and discuss SHE performance and accomplishments for the previous period and activities planned for the upcoming period. • Provide a forum for PTTLNG feedback regarding the performance and expectations of CONTRACTOR SHE performance. • At every meeting, SUBCONTRACTORS' management representatives at the work location shall be invited and shall present their SHE performance and

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Subcontractors are required to submit to DSHE Manager the safety statistics as per ANNEX 1 by 1st day of each month and provide update on weekly base.

In the weekly SHE meeting it will be also updated the status of follow-up actions and will be provide co-operation and all requested information to assist in the investigation and preventive action of any accident or incident.

All statistical data continuously captured along the project are monitored and analysed by the various SHE committees and compared to the targets. These reviews can lead to preventive or corrective actions in order to improve adequacy or efficiency of the SHE organization, system and effective prevention.

8.3.3. Weekly Workforce Tool Box Talks (TBT)

The weekly Workforce Tool Box Talk meeting will be addressed to the whole workforce with the aim to discuss general safety matters potentially affecting the whole work group.

TBT should not exceed 15 minutes, and will be held at the beginning of the week prior to dispersing the workforce into smaller crews to commence work.

Contractor and Sub-Contractors Commissioning Superintendents/Supervisors/Foremen shall attend the Tool-Box Talk at least in a rotating basis.

8.3.4. Daily Job Specific SHE Talks

A pre-job specific meeting is the final review stage led by the foremen (if any, supported by SHE personnel) prior to the actual start of each crews daily work activity.

This meeting is held at the work face, and provides a good opportunity to make a last minute review of the safety procedures for the work to be performed.

The meeting will be conducted at least daily, and in any case, before each shift begin.

Based on the JSEA analysis previously performed, High-risk work phases and potential hazards can be highlighted and discussed to make sure everyone has a clear understanding of the precautions required and the role each person plays in performing the task safely.

Other personnel (middle management or supervision personnel) could attend the meeting, if required.

A written record will be maintained summarizing the main points of discussion.


8.3.5. PTW Coordination Meeting

According to the provisions of the PTW System, as described in the specific Safety Manual Procedure, a relevant PTW Coordination Meeting will be held.

- Number of PTW shall be summary and submitted to PTTLNG/ PMC on daily basis

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	accomplishments for the previous period and activities planned for the upcoming period.
Weekly Site SHE Meeting	<p>CONTRACTOR (Site Manager, Commissioning Manager, SHE Mgr.), SUBCONTRACTORS (local Manager, senior SHE supervisors) and PTTLNG (Commissioning Manager, SHE Manager) are discussing the following items:</p> <ul style="list-style-type: none"> • SHE program • Two weeks activities look ahead prior to their commencement • The good understanding of SHE principles by the entire workforce • The progress of the SHE culture and feedback from the personnel • Current SHE issues and events • Potential hazards, Near Misses, Incidents and related actions to be taken
Tool Box Meetings or Tool Box Talks (TBT)	<p>1) Weekly TBTs : work site conducts weekly Tool Box Meetings (often referred as Tool Box Talks) with employees and their immediate supervisor/foreman to discuss the following issues:</p> <ul style="list-style-type: none"> • Review of actions items from the previous meeting • Incidents and near misses occurred during the period; remedial action taken • Problems employees may be experiencing in execution of a given task • New activities planned for the coming week • Review of any JSEA applicable to any task performed on regular basis • Supervisors and foremen have the opportunity through this meeting to issue recognition awards to meriting employees • Specific prevention topic, for instance: Manual handling, lifting, electricity, Work at Height.
	<p>2) Pre-Job Meeting :The supervisor conducts the Pre-Job Meeting with his crew prior to starting the day or shift activity and uses the following broad format :</p> <p>Review previous day's safety effort and outcome by asking questions:</p> <ul style="list-style-type: none"> • "How did we do yesterday?", "were there any incidents?" • "Was the correct equipment available to allow the work to proceed safely?" • "Did the equipment operate correctly?" • "Did the work progress as planned?" • "What brought about any changes to the plan?" • Briefly overview today's tasks, focusing on what safety hazards may be faced.

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- Discuss in detail, the foreseen hazards and the planned control measures for these hazards – refer to Pre-job checklist and get employee input and involvement.
- Finish the meeting with a positive and encouraging comment. Employees are encouraged to make comments and suggestions.
- Prior to starting a new job, simultaneous operations, or hazardous operations, or all non-routine, or any work requiring a PTW a pre-job meeting is conducted with all personnel present involved in the operations.

8.4. Identification Areas and Access Control

All areas under pre-commissioning, commissioning and start up are clearly identified and fenced with rigid barriers.


In order to avoid the access of unauthorized personnel each area is permanent monitored on its battery limits through an Entry Control Point guarded by dedicate security personnel at all time.

The access of personnel is regulated at two different level:

- Personnel (Contractor/PTTLNG/Vendor) with free access to the area through the possession of a dedicated badge indicating the allowed areas.
- Subcontractor personnel through the indication of names in the permit to work.

In case of the entry for short duration, where the issuing of badge or the permit to work are not applicable, a dedicated authorization, containing the name of the person, the area, the duration and the signatures of area responsible, SHE commissioning and Commissioning Manager, shall be prepared and delivered to the post guard.

In any case, the access will be allowed only with the green badge attesting the assistance to the Commissioning Induction. Only trained personnel can have the green badge and appropriate sticker on helmet.

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Sample of Green badge and sticker on helmet



The agent in the post guard register in a logbook the entry and the exit of all personnel and, if any, acPTTLNGing equipment/vehicles. They deliver to each person a numbered Visitors Pass, collecting the his ID badge. In case of emergency, they will take logbook to Muster Point to confirm Head Count. The same rules will be applied also for substations under commissioning responsibility.

For personnel without dedicated badge, the agent inform the Area Responsible or his delegate about the presence in the post guard of personnel requiring the access. He goes to checkpoint to authorize the access after the checking that:


- a proper duly signed PTW is in place;
- all personnel have appropriate PPE;
- all equipment/vehicles are in compliance with the requirements of the area;
- all personnel know the Emergency Evacuation procedure and the location of escape routes and muster points of the area;
- all safety procedures are in place and complied with at all times by personnel;

The Area Responsible or his delegate accompnais the team to the work place ensuring that they stay at all time in the designated area. After the completion of the activity, he inspects that the area is in safe condition and accompnais the work team to checkpoint for the logout.

In case of visitors, they shall be escorted at all time by the Area Responsible or his delegate.

Nobody will be permitted to move about the area or buildings alone.

Along the fence of the area, warning signs will be installed in order to advise all personell of risks and precautions to be take. They will be clearly visible and comprehensible to every worker.

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A suitable number of emergency gates will be provided along the fence and the passage through them will be allowed only in case of emergency.

Some pre-commissioning, commissioning and start up areas are affected by the presence of gas inside some lines and, for this reason, are subjected to particular restrictions:

- Smoking is forbidden
- Only ex-mobile phones and radios are allowed in the gas areas
- Cigarettes, lighters, common mobile phones, cameras, music devices and any other tools not intrinsically safe are forbidden and shall be left in the office or at Entry Control Point.
- Only antistatic and flame retardant coveralls shall be wore at all time. For visitors not involved in hot works the antistatic paper coveralls are allowed.
- The access of vehicles is allowed if strictly necessary for the transport of material.
- The Pre-Commissioning and Commissioning vehicle inspection and sticker color coding system are required. In any case the vehicle shall have flame back arrestor and a dedicated permit to work shall be prepared. Personnel/Workers/Visitors shall leave all prohibited items at the checkpoint.

It is not allowed to touch or to climb over equipment at anytime, unless the permit to work has been authorized.

- Communication system during commissioning shall use explosion-proof Walkie-Talkie number of Walkie-Talkie be provided to the client by following contract agreement


These safety indications shall be followed at all time in order to guarantee the safe condition of the people and the plant.

All pre-commissioning, commissioning and start up subsystems, especially the ones crossing areas under construction responsibilities, are clearly identified through the apposition of yellow and black tape and warning signs.

A plot plan showing all the areas and subsystems under pre-commissioning, commissioning and start up will be constantly updated and transmitted to all the personnel involved in project activities.

8.5. Tags and warning signs

In addition to the normal, frequently seen safety tags and signs, Commissioning will use various tags and signs during the pre-commissioning, commissioning and start up phases of the project. Only commissioning personnel are authorized to place and remove pre-commissioning, commissioning and start up tags. Tags

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shall only be removed by the owner of the tag and checked weekly to ensure that they are still in place, and that the reason for placement is still valid. Any person may place a Danger Do Not Operate tag for safety reasons if they identify a piece of equipment that is unsafe, after placing such a tag, a Commissioning Supervisor or Commissioning Safety Officer must be informed.

Examples of tag types

- DANGER - DO NOT OPERATE
- EQUIPMENT UNDER TEST
- OUT OF SERVICE
- SPADE TAG
- DANGER LIVE
- NO ENTRY

The DANGER – DO NOT OPERATE tag is used to identify valves, switches,' etc, that must not be operated


The EQUIPMENT UNDER TEST tag is used to identify equipment that is under test where operation of Valves or switches could lead to equipment damage or operating upset. It is used for pre-commissioning, commissioning and start up activities such as maintenance, motor test runs, compressor N₂ runs, calibration and testing with controlled risk levels

The OUT OF SERVICE tag is used to indicate that the equipment is not to be used for various reasons.

The SPADE TAG is used to identify commissioning spades and must not be removed by any personnel other than the commissioning group under a cold work permit. Tagged spades often indicate the boundary between the live plant and the systems being commissioned or between piping systems under commissioning and piping systems still under construction. The tagged spades will be checked against an installed spades list, on a regular basis by the commissioning personnel.

In addition to tags on valves and switches, various identification markers or stickers will be affixed to piping systems at regular intervals as they become operational. These will serve to indicate to all personnel that this piping is under pressure or live and must be treated with extra caution.

As electrical drives/systems come under the control of Commissioning. Electrical commissioning, warning labels "Danger Live" will be affixed to the appropriate cubicles in substations and equipment in the field to warn personnel.

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8.6. Training Program

Training sessions will be required to familiarise parties having a role in the pre-commissioning, commissioning and start up Process with the overall process and techniques used for integrated planning, review and other activities.

Time will be set aside before initial integrated planning sessions and commissioning reviews for on-the-job training instruction and toolbox talks. This will be repeated as necessary whenever inexperienced personnel take part in these activities.

Contractor will carry out Trainings for own direct personnel respecting training matrix as defined in the relevant procedures.

Subcontractors will also be required to continually reinforce the SHE message to their employees on general Site rules and train them in the SHE Requirements of their particular job.

If relevant with the performed activities, Contractor and subcontractors will inform their employees on:

- Risks identification, assessment & management (Job Safety Environment Analysis, work permit, environment awareness etc.);
- Personnel fitness (periodical medical check-up and/or vaccinations etc.);
- General operation safety (stepping-handling-lifting, personal protective equipment, working at height);
- Logistic safety (lifting gear, crane, forklift, container, motor vehicle transportation, personnel lifting);
- Mechanical safety (welding, cutting, sand blasting, painting);
- Pressure safety (compressed air, high-pressure circuits, pressure vessels, pressurized operations);
- Electricity safety (earth, lock out-tag out, classified zones);
- Safe handling and disposal of Hazardous material (fuels, acetylene, oxygen, radioactive materials, reactants etc.);
- Pollution prevention and environmental protection;
- Selection, use and care of all types of personal protective equipment;
- Life-saving and escape techniques (first aid, firefighting, emergency response/preparedness);
- Work at Height;
- Basic firefighting training for all workers;
- Toxic release;

Subcontractors shall also:

- Inform their employees of the safe work methods to be adopted in their particular work including the use of standard PPE and additional PPE in line with Risk Assessment results;
- Inform their employees of any special SHE rules for working near operating plant.

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Procedure, moreover it's established and communicated to the PROJECT personnel during induction and when possible to the SUBCONTRACTORS at Kick-Off Meeting.

SHE incentives schemes or challenges are implemented to motivate all workforce including SUBCONTRACTORS to work safely and in an environmentally friendly manner, and to raise the SHE awareness of the workforce.

Personnel receive awards based on their personal leadership on safety or on best Safety Hazard Observation Cards issued.

In addition, incentive schemes are developed to encourage the SHE awareness of the workforce and foster open incident and near-misses reporting. This incentive scheme, along with a transparent and fair disciplinary procedure, improves the SHE culture of the workforce.

The incentive program can include the implementation of a suggestion system to allow personnel to offer a safety suggestion, identify an issue or concern, or recognize a co-worker. The suggestion forms are turned to the site SHE Manager for review, prioritization, and capture.

Action items resulting from forms are logged, tracked to resolution, and communicated back to

PTTLNG may elect to participate in such program.

Recognition programs provide a structured means to periodically reward (typically on 3 monthly base) and recognize those personnel who have contributed in making the worksite safer.

Working safely is seen as a condition of employment, therefore awards will not be directly linked to the expected safety behavior.


All personnel are encouraged to actively take part in the schemes.

The Safety Awards distributions are organized weekly or monthly and are based on merit, active participation, and the achievement of pro-active safety performance targets; such as:

- Near Miss/ Safety Observation Unsafe Act/ Condition Reporting
- Safety Initiatives/ Suggestions
- Displaying safety consideration to fellow workers

The rules and criteria defining this scheme are described in the "122018-SPCC-C-SH-PR-0036 - Incentive Scheme Program Disciplinary Action Procedure".

Project works closely with CONTRACTOR (and PTTLNG if applicable) to choose the most appropriate safety awards. The awards are presented in presence of the PTTLNG and CONTRACTOR Site Representatives.

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- Inform their managers, supervisors and personnel of the "emergency procedures" so that they may provide the leadership and control required.

These training sessions shall be documented and sent to the Contractor SHE Manager. The SHEM will monitor subcontractors' training activities to ensure that satisfactory standards are maintained. Presentation and material to be used during the training, should be in line with Delphi presentations.

8.7. Permit to Work System

In the areas directly impacted by pre-commissioning, commissioning and start up activities, Contractor will use PTTLNG PTW system.

8.8. SHE Initiatives and Communication Means

In the event pre-commissioning, commissioning and start up occur the critical element is communication. It is imperative that clear and continuous communications be maintained between all SPCC and personnel, and sub-contractors. Communication shall be established before start of the pre-commissioning, commissioning and start up and shall continue throughout the operation. All personnel involved in pre-commissioning, commissioning and start up must be diligent in communicating their activities with the other involved entities.

8.8.1. SHE Alerts/Bulletins

In order to share SHE awareness and information with the entire Site Team, SHE Alerts/Bulletins will be occasionally spread out, also by mean of mailing list, on topics related to the Project (e.g. Accidents and Near Miss, new SHE procedures issued, etc.) or related to other Sites/Projects.

8.8.2. Notice Board

SHE Notice Board will be made available at Site in order to assure proper communication and awareness for those people that don't have access to the mail service.

The Notice Board will contain information regarding SHE Policy, Emergency Numbers, Training Program, SHE Services, SHE Alerts, etc.

8.9. SHE Incentive Scheme

CONTRACTOR will establish both a disciplinary and safety incentives program to curb unsafe or hazardous acts and behaviors and reward safe and team oriented PROJECT personnel. Further details within SHE procedure doc. N. 122018-SPCC-C-SH-PR-0036 - Incentive Scheme Program Disciplinary Action

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8.10. SHE Penalty Scheme

The Project operates under a "Just Culture" which places individual accountability on employee's actions by defining the lifesaving safety rules and general project safety culture which must be respected by all.

As examples, the following behaviors will be cause for disciplinary/penalty action:

- Violation to the Life Saving Rules
- Performing work under the influence of drugs or alcohol and/or possession of alcohol and drugs.
- Act of violence against people or willful damage to equipment/property.
- Violation of the Safety road transportation Law and Code
- Violation of speed limit at site
- Disregard towards the safety of PTTLNG or fellow workers.
- Significant economic harm to the Project.
- Failure to report incidents or risk exposures.
- Smoking in a non-smoking area.
- Violation to SHE rules.
- Horseplay or practical jokes.
- Failure to wear the correct PPE, improper use of safety equipment.
- Failure to comply with PTW, safety procedures/instructions, qualifications.
- Gambling, hunting, fishing.
- Other unacceptable acts or behaviors may be prohibited to reflect cultural values of local communities and Thai society in general.

8.11. SHE Inspections and Audits


Scope of this activity is to verify, during the whole PROJECT life-cycle, the correct implementation of the SHE Management System and to evaluate the overall PROJECT SHE performance, for which the PROJECT Director (PD), Site Manager (SM) and SHE Manger (SHEM) are responsible.

The SHEM will assist the auditors in their activities and help manage possible recommendations in order to properly address them.

Audit results will be documented in dedicated Audit reports and shall include good points, corrective action requests and recommendations, and shall be reported to CONTRACTOR Management in a timely manner. Corrective actions shall be implemented and their effectiveness verified.

During the audit, the CONTRACTOR monitors the compliance of the PROJECT activities, carried out by CONTRACTOR itself, by SUBCONTRACTORS and/or Vendors, with: Weekly Management Safety Walks.

At least once a week, a site inspection tour will be conducted by the CONTRACTOR and SUBCONTRACTOR Site Management, SHE and Commissioning representatives, in order to identify and ensure the

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accomplishment of the necessary organizational measures necessary to solve any SHE issue that has not been solved by the lower supervision levels.

At the end of the inspection a briefing will be conducted among the participants in order to agree an action plan and identify the necessary resources in order to solve the found issues.

8.11.1. SHE Inspections

The site SHE staff is entitled to perform SHE tours on a regular basis, to confirm compliance with safe methods of work. In these checks the SHE can also use checklists based on the risk assessment of each job.

The frequency will be evaluated and established by FSHEM depending on the following factors:


- Size of the inspected area.
- Number of people working.
- Kind of activities carried out in the site.
- Skill and experience of the operatives.
- Frequency of accidents/incidents/near misses.

At least once a week, a site inspection tour (Safety Patrolling) will be conducted by the Contractor and Subcontractor Site Management, SHE and Commissioning representatives, in order to identify and ensure the accomplishment of the necessary organizational measures necessary to solve any SHE issue that has not been solved by the lower supervision levels.

At the end of the inspection a briefing will be conducted among the participants in order to agree an action plan and identify the necessary resources in order to solve the found issues, remedial actions to remove any dangers, and make working places safer, will be put in place by the relevant department/ subcontractor.

Moreover the inspection is also an opportunity to share the actions taken and improvement achieved.

For the piece of Equipment inspection a specific register for each piece of equipment shall be used and the inspection must be provide by competent and trained inspector once a month, after the inspection the inspector shall also put the sticker for the colour coding system.

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	employee behaviors, interviews to assess Toolbox and JSEA effectiveness; review of incident investigation reports; identification of anomalous situations	+ system leaders for CCA during Pre-commissioning, Commissioning and Start up.
Environmental Inspections # Weekly	Inspection of all the site areas: effectiveness of the wastes sorting and storage ; application of dust control ; containments in place, pollution traces, seashore aspect, applicable EIA mitigation measure etc.	Environmental supervisor.
SHE daily inspection 1# During the day/shift	Inspection with checklists prepared by the Site SHE team about the main risks associated to the works in the area (s) inspected.	Site SHE team member(s).
2# End of day/shift	To ensure that all work areas are secure and at minimum: <ul style="list-style-type: none"> • All equipment is stopped and switched off, • Collective protection equipment is in place, • All personnel is off, • The work areas are left clean and in order. 	SHE Supervisor or Officer of each SUBCONTRACTOR checks their own work area(s).


Inspection/checklist forms have been reported within the SHE Plan for Commissioning and Start Up

8.11.2. SHE Audits

Based on a project Audit schedule, the Contractor SHE Department will conduct audits of the work site, management system and status of compliance with the essential elements of applicable SHE practices, regulatory requirements, trends, results of previous inspections, accident/incident management, review of corrective action trends and progress.

In particular, as reference, the specific objectives of the Project SHE Audit are to verify:


- Respect of Laws and regulations;
- Responsibilities;
- Risk evaluation and management;

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Type # Frequency	Visit / Inspection Scope	Visit / Inspection team members
Management SHE Visits # Yearly (minimum)	Visit of any zone and observation of housekeeping status, visible equipment state, safety rules compliance for equipment and persons, work permit and environmental compliance. These visits give an occasion to communicate with work teams to show commitment and to check SSHE awareness.	Visit conducted by the Line or Project /Site/ Vessel Mgr. + person responsible for the area (constr. Mgr., CONTRACTOR and SUBCONTRACTORS supervisors) + SHE rep.

The Management SHE visits are generally scheduled at short notice according to the travels of the Managers for the business on the site.

Type # Frequency	Visit / Inspection Scope	Visit / Inspection team members
Weekly Site Management Inspections (or safety patrolling or safety tours) (or walkthroughs) # Weekly (minimum)	Visit of work areas; interviews of supervisors and employees to assess the efficiency of communication; checking of a sampling of inspection and incident investigation reports; PPE compliance, etc. Recommended frequency = weekly	At least a PTTLNG member + area or discipline Mgr. + site SHE management. Occasionally members of the PMT when they are coming on the site.) + SHE rep.
Medical & Hygiene Inspections # Monthly	Inspection of Hygiene in social premises, catering facilities, accommodation, etc. Inspection of equipment and medicine available in clinics, ambulance, etc.	Site Medical Team
Equipment inspections # According to legislation & guidelines	Use of checklists specific to the different types of equipment: lifting, piling, diving, marine vessels, compressed air, marine vessels, vehicles, electrical installations and grounding, hand tools, working at height equipment, etc.	Supervisor or SHE competent for the type(s) of equipment to be checked together with the inspector qualified by Law
Supervision Team Inspection # Weekly	Inspection of the work areas, of the checklists completed; checking of equipment and materials; observation of	One site SHE team member + area supervisors (including SUBCONTRACTOR)

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- Respect of the environment;
- Safeguarding of health;
- Competence and training;
- Emergency preparedness;
- Incident investigations;
- Inspections;
- General site conditions of pre-commissioning, commissioning and start up areas;
- Project SHE documentation applicability;
- Contractor SHE organization;
- Project SHE procedure implementation;
- Follow up of previous recommendations.

Auditing will be performed by personnel not directly involved in the activities, also within the Contractor Organization, with the use of standard and specific check-lists; audit reports will define needed corrective actions in function of non-conformity highlighted during the inspection of the site.

Deficiencies identified during the audit are reviewed and analysed to determine potential failures in the SHE Management System and to develop appropriate corrective actions.

Findings are discussed with site key personnel during a closing meeting. Deficiencies are documented along with the corrective actions, responsibility for completion and targeted completion dates.

Ref procedure: 122018-SPCC-C-SH-PR-0013 SHE AUDIT Procedure

Type # Frequency	Visit / Inspection Scope	Visit / Inspection team members
CONTRACTOR SHE audits # Yearly (minimum)	Audit of worksite SHE-MS to check compliance with CONTRACTOR rules and standards	CONTRACTOR SHE Department auditors
Monthly EIA external Audit	As per Environmental Monitoring Plan, to ensure that compliance with environmental monitoring and mitigation measures as per EIA requirement.	Third party (UAE)
Internal Project SHE-MS audit (*) # Yearly (minimum)	To assess the effectiveness of all the SHE activities and processes described in the Project SHE-MS.	Site Internal auditors

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	Can be split into 2 to 4 sub-audits looking at different processes (*) The audits are conducted at a minimum frequency of 1 / year, unless otherwise specified by the Project Manager, who can establish shorter intervals (for instance in case of an unsatisfactory performance).	
Medical Audits # Yearly (minimum)	Health Management system: to verify that the site is implementing and complying with the Health Plan	CONTRACTOR Medical Coordinator
Environmental management audits # Bi-annual (minimum)	Audit of the Environmental system: compliance with procedures / plans, effectiveness of the monitoring plans, of the environmental surveillance. Can be combined with the Internal Site SHE-MS audit	One commissioning team member + SHE Mgr. or DSHE Mgr.
ISO 45001 audit # Yearly (maximum)	In the context of the ISO 45001 each project is able to be chosen by the certification body for performing a SHE-MS audit	Third Party auditors
PTTLNG Audit & safety Assessment # PTTLNG's Audits	Different types of audits / inspections can be carried out by the PTTLNG.	PTTLNG's team generally assisted by the CONTRACTOR Site SHE Management.


8.12. Incident Investigation, Reporting & Follow-Up

Injuries and/or accidents including serious incidents will be immediately reported to the Contractor Management and PTTLNG and immediately investigated.

Contractor will ensure that an immediate oral report is made to the PTTLNG Representative in the case of:

- fatal Injuries;
- injuries requiring medical attention, which may or may not result in lost time;
- damage, in any amount, to PTTLNG equipment or property.

It is the duty of Contractor's and Subcontractors to notify the SHE Management of any accident or incident immediately.

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8.13.1. Safety Data

InSight Tool has to be used in order to add the monthly project statistics.

8.13.2. Environmental

According to the Contractor Standard, SHEM will prepare an environmental report on a monthly base through HSE Monthly report.

Environmental performance data to be reported include:

- Water Consumption
- Water Discharged/Reused
- Hardous and not-hazardou Waste
- Energy consumption
- Oil and chemical spills
- EIA Audit observations and/or good practices.
- Medical facilities

Each sub-contractor that works at the site, will have to complete and submit on monthly basis the environmental reporting to SHEM, using project reporting FORMs, to include such data in the quarterly environmental reports of Contractor.

The data reported will be verified in the periodic audits/inspections carried out. This guarantees the reliability and traceability of the environmental data reported.


8.13.3. Implementation and Monitoring

Safety Statistics record keeping and reports

The DSHEM collect all SUBCONTRACTORs "Monthly Safety Statistical Reports" analyze all the information and fill the same form in SHE Monthly Report considering the totality of man-hours and recordable cases during the month, complete and provide the SHE Monthly Feedback at the close of each month to the SM and to the SHE Head Office.

Project SHE reporting for EIA compliance

Each SUBCONTRACTOR SHE Manager shall complete and submit the "Monthly Safety Statistical Report" (Annex1 of the present Plan and the 122018-SPCC-C-SH-RPT-0037) to the DSHEM at site first day of each month.

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For accidents involving fatalities, lost time injury, medical treatment case, restricted work case, or damage to PTTLNG equipment or property, a preliminary report will be submitted to PTTLNG representatives. After investigation a final report will be submitted as well.

CONTRACTOR shall report to PTTLNG immediately on the occurrence of any injury to its employees, or SUBCONTRACTOR employees, incident or damage to equipment or Terminal, including near misses within twenty-four (24) hours of the occurrence. A detailed written report of incident shall be presented to PTTLNG within the next working day, with proposed measures to avert such incidents or occurrences. Accident and incident management shall incorporate PTTLNG's Key Performance Indicators (KPIs) requirements.

CONTRACTOR will update in the weekly SHE meeting on the status of follow-up actions and will co-operate and provide all requested information to assist in the investigation and preventive action of any accident or incident.

Written reports will be prepared and submitted according to a specific CONTRACTOR procedure Incident Notification and Investigation doc n 122018-SPCC-C-SH-PR-0014.

CONTRACTOR shall incorporate accident/incident records in SHE monthly report to PTTLNG

Register and records of all incidents involving WORK shall be maintained to assess SHE working performance and the need to introduce additional controls.

InSight tool and incident tracking tools must be used for the management of the incident reports. (notification, preparation and follow up of Incident Report including the management of corrective actions).


8.13. SHE Performance and Reporting

SUBCONTRACTORS are required to update statistics every week during the Weekly safety Meeting in accordance to the annex 1.

On a monthly basis the Contractor SHE Team will prepare a report to be issued within 1st week of each month to PTTLNG including safety statistics, details of any hazardous incidents, near misses, training, environmental performance, environmental incidents and activities relating to environmental aspects and EIA requirement.

Safety and Environmental data are recorded using insight software.

For details relevant to the Environmental reporting please refer to the Environmental Management Plan issued for the PROJECT doc n. 122018-SPCC-C-SH-PR-0031.

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Safety performance will be analyzed every month considering in the Monthly SHE report (122018-SPCC-C-SH-RPT-0037) the Indicators and the Pro-active indicators.

In case result are not satisfactory additional action will be required to improve the site conditions.

SUBCONTRACTOR requirements

SUBCONTRACTORs have responsibility for the SHE of their operations irrespective of whether carried out by themselves or others.

SUBCONTRACTORs shall either:

- issue and keep up to date their own SHE Commissioning Plan that shall be in compliance with this document. All SUBCONTRACTORs shall comply with the most stringent of this document and their SHE Commissioning Plan; or
- fully adopt and comply with the requirements of this SHE Plan for Commissioning and Start Up as if their own and other way improve with comments;
- provide specific SHE procedures (work instructions) for the works using procedures in this plan and into the SHE Plan for Commissioning and Start Up. SUBCONTRACTORs must also complies to the SUBCONTRACTORs SHE Requirements 122018-SPCC-C-SH-PR-0020.

8.14. Other SHE Aspects

8.14.1. Management of Work Interferences

In case multiple works shall be carried out in the same area and are in some way interfering, in order to minimize the risk following step, shall be followed:

- a coordination meeting shall be arranged, interferences shall be pointed out and eventual additional safety measures planned. In case there isn't any chance to reduce the additional risk consequent to the work interference, works shall be shifted;
- a work permit shall be issued;
- add other requirements according to project requirements if any.

Depending on the interference typology following solutions could be considered applicable:

- one work activity will be interrupted up to the other will be completed;
- area will be fenced and signaled, inside this space nobody will be authorized to carry out any other activity, as in case of the lifting activity;
- apply collective protection;

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- safety distances shall be respected;
- add other measures if necessary.

All Commissioning and SHE Supervision shall be made aware and trained concerning the correct management of the works interferences.

8.14.2. Simultaneous Operations (SIMOPS)

Contractor has noted that, at certain stages, the execution of Work may take place in areas shared with PTTLNG's personnel and other Contractors /Subcontractors.

Work shall be performed simultaneously and may result in a high concentration of manpower in particular area.

During these periods, particular attention shall be paid to SHE conditions, both within the areas of Site and at the interface with adjoining areas. In addition Contractor shall be required to liaise with neighbouring workforces at management level and agree on procedures to regulate Work where interaction or SIMOPS may take place.

The Project Management Team must be aware of all the activities managed at the same time on the site and therefore can identify and anticipate possible co-activities or simultaneous operations (SIMOPS). A particular attention is paid to possible co-activity between pre-commissioning, commissioning and start up works and operations of a live installation or plant area.

The SHE Manager establishes with the SIMOP Coordinator a specific SIMOPS plan or procedure which is endorsed by the Site Manager and the Commissioning Manager.

Deliverable: Simultaneous Operations procedure doc n. 122018-SPCC-C-SH-PR-0015

8.14.3. Occupational Hygiene

Contractor and subcontractors will put in place work methods and procedures to monitor the status at least of the following Occupational hygiene issues:

- Handling of chemicals;
- Dust monitoring;
- Noise monitoring;
- Vibration if needed;
- Hygiene;
- Thermal comfort.

Further details will be provided in the SPCC-C-SH-PR-0030 SHE Manual and into the approved EIA.

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8.14.6. Driving Risks

All Contractor and Subcontractor personnel who intend to drive for the Project must hold an appropriate and valid driving license for the vehicles, plant or equipment to be driven.

Local driving rules will be strictly followed by anyone who drives vehicles; in addition Site and Plant rules will be followed.

CONTRACTOR shall maintain and enhance the awareness of safe driving among its employees and SUBCONTRACTOR's employees and will provide vehicles in good operating condition.


Where applicable, CONTRACTOR must ensure that its employees, and the employees of SUBCONTRACTORS, receive adequate driving instruction and that visible steps are taken to maintain a safe standard of defensive driving.

- Vehicles shall be fit for the purpose, regularly inspected and well maintained in accordance with good driving practices.
- All seats of all vehicles must be equipped with seat belts at least 2 with a conversion for new vehicle equipped only of three fixed-point type.
- Vehicles with roofs, which cannot withstand a rollover, should be fitted with roll bars.
- Vehicles used for isolated areas shall be equipped with survival kits comprising a two-way radio, drinking water, first aid kit, etc.
- No unauthorized usage of transport shall be tolerated by CONTRACTOR or SUBCONTRACTOR staff. The nominated Work Safety and Health Officer(s) should ensure that all forms of transport are correctly fitted with the appropriate safety equipment.

CONTRACTOR and SUBCONTRACTORS shall undertake to ensure that all drivers comply with the following basic rules:

- Possess a valid driver license;
- Always wear a seat belt;
- Always observe traffic rules, especially speed limits;
- Never drive after consuming alcoholic drinks or certain medicines/drugs;
- Never drive when very tired;
- Take regular stops when driving long distances;
- Be sure that the vehicle is properly maintained and in good condition for the planned journey;
- Never overload the vehicle; and,
- Drive defensively.

CONTRACTOR and SUBCONTRACTOR must assure to have an:

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8.14.4. Alcohol and Drugs

Contractor is committed to making the working and living environments under its direct

control healthy and safe. Such environments include all sites, structures, installations, vehicles and equipment owned, rented, leased or managed by Contractor.

In accordance with its SHE Policy, Contractor puts its greatest attention in protecting the health of its own employees and the safety of its own activities. Therefore the abuse of alcohol and drugs is absolutely prohibited in the premises of the Project. These abuses can result in damages to the health of a person, as well as to the properties of the PTTLNG whether it be a conscious or an unconscious act by the people concerned. In order to monitor the compliance with its policy of zero tolerance, Contractor carries out regular post-accident, based on reasonable suspicion, and critical activities D&A tests. The regular tests are part of the pre-employment and periodical fitness examinations, which each employee is due for on an annual basis, and aim to determine the presence of the following substances: Alcohol, Methamphetamine, Morphine, Cannabis, Amphetamine, Cocaine, and Benzodiazepine. Employees that reacted positive to any of these substances are not certified fit for work. The other tests will be conducted on all work sites if there is no discrepancy with the local legislation that treats this subject. In order to define the process of Drug & Alcohol testing on work sites, Contractor has developed a work instruction "Controls for the prevention of alcohol and drug abuse". This procedure is applicable to all work sites and to all employees, unless there is a local regulation that restricts such tests.


In order to ensure that all employees are aware of the health and disciplinary consequences of alcohol and drug use and abuse Contractor organizes information sessions aiming to enhance their knowledge on the issue. As part of its health promotion initiatives, Contractor also could develop and distributes leaflets with accurate, easy to understand, comprehensive information on the health effects of drug and alcohol use and abuse.

8.14.5. Smoking

Being aware of the enormous harmful potential of the habit of smoking, Contractor is

committed to take all possible appropriate measures to induce decrease in smoking on the worksites, in order to maintain a good working and living environment and avoid discomfort, diseases or accidents caused by smoking. The approach methods are:

- organizing awareness campaigns
- discourage smoking by implementing no-smoking policy in all office areas
- placing signs wherever smoking is forbidden
- verifying whether they are obeyed.

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- 1) Assessment completed on the experience for drivers, according to the type of vehicle they drive;
- 2) Two point safety belts are still accepted on buses and minivans, however, each new contract with passengers transportation companies and purchase contracts of passengers vehicles shall contain the requirement of three point safety belts on all seats.

The speed limit on all work sites 20 Km/h, in neighbored roads out of the site 30Km/h, in public roads less than 80Km/h as stated within the EIA, and populated areas should be announced and posted for passenger and material transport vehicles.

CONTRACTOR and SUBCONTRACTOR's driver caught by police on the public road violating traffic rules will be immediately dismissed by PROJECT; at site in violation of traffic rules, shall be punished with a project fine identified by Project and if an incident will result from the violation the immediately dismissed by PROJECT.

8.14.7. Stop Work Authority, Unsafe Conditions & Acts

It is important to note that, as indicated in the SHE policy, CONTRACTOR, PTTLNG and SUBCONTRACTORS are entitled to stop any activity if it is believed to involve any hazard. This "Stop work authority" is granted to all project personnel.

Non-compliance with the requirements of the SHE Management Plan(s) shall be considered as misconduct for which PTTLNG or its Project Management Consultant (PMC) shall have the right to require CONTRACTOR to remove offending personnel from Site. In certain cases, PTTLNG may suspend work that is considered by PTTLNG as unsafe, until compliance with safety regulations has been re-established.


On the request of PTTLNG, any unsafe operation/practice by CONTRACTOR or its SUBCONTRACTOR shall be stopped immediately and rectified at CONTRACTOR or its SUBCONTRACTOR cost to the satisfaction of PTTLNG. For such suspension of Work, CONTRACTOR is not allowed to claim the delay of the planned schedule.

If, during the execution of Work, conditions at a particular location within Site are deemed unsafe by CONTRACTOR, he shall notify PTTLNG immediately.

PTTLNG shall be responsible for verifying that Site is safe before Work recommences.

8.14.8. Languages Requirements

The language difficulties with the multinational workforce are identified and the worksite ensures information is provided in a manner that can be understood by all concerned. Worksite utilizes multiple meetings and multiple languages if required to assure effective communication with each audience.

	<h2 style="text-align: center;">SHE PLAN FOR COMMISSIONING AND START UP</h2>	PTTLNG Doc. No.: 122018-SPCC-C-SH-PR-0033
		SPCC Doc. No.: XA74-0000-041 Revision: F1 Status: IFF
Contractor Project : PTTLNG Nong Fab LNG Receiving Terminal Project		Rev. Date : 28/09/2021
Contractor Discipline : SH	Contractor Phase : EPCC Phase	Page 69 / 72

- This procedure shall be examined by SHE staff that controls that and includes the safety precautions as indicated in the SHE Plan for Commissioning and Start Up and also checks any overlapping with other activities; in case of overlapping the SHE staff before authorizing the work shall follow the procedure about simultaneous operation "Simops Procedure". And also this document should be attached to permit to work for each activity.

According to type of works, hazards associated, extension of areas involved, this job procedure shall be submitted to SHE staff that carried out the relative risk assessment, within seven days before the start of the activity.

If chemicals are used, the Commissioning Manager, with the supervision of COSHEC, shall include a specific plan that illustrates the action to take in place if any spillage occur. Refer to "Waste Management Plan for Commissioning".

- Moreover a specific Commissioning Emergency Response Plan shall be prepared. More hazardous works require an evacuation test that shall be carried out with the direct supervision of COSHEC.

This procedure, after the control of SHE staff, shall be submitted to Subcontractor authority and a copy of it must be attached to the relative Permit to Work.

10. LIST OF COMMISSIONING AND START UP APPENDIX

Here below are listed the SHE procedures for Commissioning and Start Up activities:

APPENDIX A – PRECOMMISSIONING APPENDICES

Here are listed the SHE procedures for Pre-Commissioning activities attached to this plan:

- Appendix A1: Air Blowing
- Appendix A2: Equipment inspection and closure
- Appendix A3: Chemical handling and first filling
- Appendix A4: Water flushing
- Appendix A5: Lube oil and seal oil flushing
- Appendix A6: Pig Cleaning
- Appendix A7: Uncoupled running motor test
- Appendix A8: Electrical substation energization

<div></div>		HSE PLAN FOR COMMISSIONING AND START UP		PFTL/AG Doc. No. 122018-SPCC-C-SH-PR-0033 SPCC Doc. No. XA74-0000-041 Revision: R1 Status: IFR Rev. Date: 21/06/2021 Page 71 / 72	
Contractor Project: PTTLNG Hong Fab LNG Receiving Terminal Project Contractor Discipline: SH		Contractor Phase: EPCC Phase			
<div></div>		ANNEX 1 CONTRACTOR INTERNAL SAFETY INDICATORS			
Month:	Year:	Company:	Project / Site /	Completed by:	Date:
GENERAL SUMMARY SAFETY INDICATORS		Monthly total (SPCC)	Monthly total (Subcontractor)	Total since the beginning of Project / year* (SPCC)	Total since the beginning of Project / year* (Subcontractor)
Average Manpower					
Total Worked Manhours					
No. of Fatal Accidents					
No. of Lost Time Injurist					
No. of Work Restricted Cases					
No. of Medical Treatment Cases					
No. of First Aid Cases					
No. of Commuting Injuries					
No. of Near Miss					
No. of Lost Workdays					

		HSE PLAN FOR COMMISSIONING AND START UP		PTTLNG Doc. No. 122018-SPCC-C-SH-PR-0033 SPCC Doc. No. XA74-0000-041	
				Revision: RI	Status: IFR
Contractor Request		PTTLNG Hong Fab LNG Receiving Terminal Project		Rev. Date: 21/06/2021	
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No. of Workdays	No. of Restricted				
No. of Road Accident (RTA)	No. of Road Traffic				
Kin Driven					
Lost Time	Injury				
Frequency Rate (LTI/FR)	Frequency Rate (LTI/FR)				
Total	Recordable				
Frequency Rate (TRFR)	Frequency Rate (TRFR)				
Severity Rate (SR)					
NOTE:		SHE Manager		Site Manager	



เอกสารแนบ 46

Emergency Preparedness and Response Procedure for Construction

Revision list:

Rev. Nr	Modifications:
R1	First Issue
F1	Issue for final and improvement from contractor on chapters: 3, 7,

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Emergency Preparedness and Response Plan for Construction

Doc. Class Z

F1	IFF	20/11/2018	Issued for Final			
R1	IFR	17/09/2018	Issued For Review			
REV.	STATUS	DATE	REVISION DESCRIPTION	BY	CHK.	APPR.

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This document is the property of SPCC who will safeguard its rights according to the civil and penal provisions of the Law.

1 INTRODUCTION

The purpose of this document is to ensure that all foreseeable emergency situations arising during construction.

This Emergency Response Plan covers:

- Nomination of persons responsible for managing an emergency situation;
- Definition of roles/responsibilities of emergency response team;
- Procedures for reporting, communicating and response action in an emergency;
- Monitoring, testing and maintenance of alarm systems and early warning devices;
- Training requirement including drill exercises for emergencies;
- Rescues and medical treatment of casualties.

It is the responsibility of the CONTRACTOR Project Manager for Construction to ensure that all personnel, including visitors, are made fully aware of the contents of the emergency response procedures and receive information and induction training as necessary. The information and the training shall be documented.

This Emergency Response Plan describes the initial response actions, resource mobilization, training in emergency response and testing in respect of incidents which could occur during construction and it will be periodically updated based on the new information and needs of the phase.

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1.1 SCOPE OF THE DOCUMENT




Scope of this document is to set up an emergency response and communications system that shall apply to any emergency occurring during the construction phase.

2 DEFINITIONS AND ABBREVIATIONS

2.1 SPECIFIC FOR THIS DOCUMENT:

Emergency	Event that causes a deviation from normal operating conditions, and such as to result in harm or potential harm to the health and safety of people, the environment and the Company's or third parties' assets. Emergency may result from human behaviours (terroristic attack, civil war, riots, demonstrations, etc.), malfunctions or failure of machine or plant, technical event (ignition, explosion, short circuit, etc.) or natural events (earthquake, hurricane, etc.).
1 st level Emergency	A minor emergency that can be effectively addressed locally using personnel and equipment available on site and/or to the Operating Company. This includes, but is not limited to, the following: minor injuries to contractor or subcontractor personnel; damage to plant and/or equipment without significant harm to personnel, the environment, and/or public health; minor fire; manifestation
2 nd level Emergency	An emergency that can be addressed locally with the support of personnel and equipment made available by authorities and public administrations at peripheral level. This includes, but is not limited to, the following: fire with intervention of the fire-brigade; medical evacuation (MEDEVAC); local demonstration.
3 rd level Emergency	An emergency which cannot be addressed locally and impacts the Site's and/or the Operating Company's

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	<p>operations, requiring assistance/support from the relevant Corporate functions and/or authorities and public administrations at central level.</p> <p>This includes, but is not limited to, the following:</p> <p>serious social unrest that cause the repatriation;</p> <p>serious injuries to contractor or subcontractor personnel requiring MEDEVAC;</p> <p>contractor asset stoppage.</p>
Crisis	<p>A very serious event whose effects cause or may cause major impacts on the activities, health and safety of the employees and to the environment.</p> <p>A crisis is an emergency that cannot be addressed locally but requires the involvement of Saipem Crisis Management Team for the operational coordination of internal and external personnel and equipment available locally or provided by the relevant Corporate functions or by other group Companies.</p> <p>An event whose resolution can be extended over time.</p>
Emergency Response Team	<p>Group of qualified personnel responsible for managing emergencies (fire, medical or rescue)</p>
Incident	<p>An accidental event or chain of events that causes an emergency within the project context.</p>
Medical Evacuation	<p>Evacuation plan for medical emergencies.</p>

2.2 ABBREVIATIONS

CM	Construction Manager
ECC	Emergency Control Center
EMM	Emergency Management Manager
ERP	Emergency Response Plan
ERT	Emergency Response Team
GS	General Service
IC	Incident Controller
MEDEVAC	Medical Evacuation
MERP	Medical Emergency Response Plan

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PIP	Pre-Incident Plan
SM	Site Manager
SET	Site Emergency Team

3 EMERGENCY CASES

Emergencies, based on the nature of the triggering event, are classified in three main categories :

- Operative: emergency due to carrying out of the site activities;
- Natural: emergency due to event not related to the site activities and that cause and could cause harm to asset, health and safety of the personnel, environment or **PTTLNG** and **CONTRACTOR** reputation;
- Security: emergency due to event not related to the site and that cause and could cause harm to asset, health and safety of the personnel, environment or **CONTRACTOR** reputation.

Events that may generate an emergency or crisis (Emergency Scenarios) are not all in the scope of the **management of the present documents**, however **CONTRACTOR** have identified such scenarios **in as below reported**:

- First aid
- Fire;
- Road accident;
- Man in the sea.




All the above events that may generate an emergency have to be considered in the following potential working conditions:

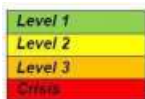
Project execution phase;

The identified scenarios may produce an emergency of different level.

The most probable foreseen Emergency level is highlighted in the table by using the following classification and colors.

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3.1 SPILL CONTINGENCY PLAN

A specific 'Spill Contingency Plan' which address the emergency response in case of environmental contamination has been developed. It details the response to spills of hazardous substances associated with project activities.

Details reported within the 'Spill Contingency Plan' 122018-SPCC-C-SH-PR-0025

3.2 MEDICAL EMERGENCY RESPONSE PLAN (MERP)

In the event of a serious accident, illness, or any other medical emergency during the PROJECT Operations, reference should be made to:

Medical Emergency Response Plan doc. n 122018-SPCC-C-SH-PR-0012

3.3 SECURITY EMERGENCY RESPONSE PLAN

In case of a Security Emergency, the Security Team will be alerted. Specific actions shall be contained in the Security Emergency Response Plan.

4 REFERENCE DOCUMENTS


PTTLNG, THAI and International References

- As reported within the Project SHE PLAN 122018-SPCC-C-SH-PR-0001

Specific for this Plan

- Project SHE PLAN 122018-SPCC-C-SH-PR-0001

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5 RESPONSIBILITIES

5.1 SITE EMERGENCY TEAM (SET)

The Site ERP will be implemented via the **CONTRACTOR** Site Emergency Team (SET).

For the construction, pre-commissioning and commissioning activities, the SET will be composed by the following persons:

- Emergency Management Manager (EMM): **CONTRACTOR** Site Manager or his delegate;
- Emergency Response Team Coordinator (ERT Coordinator): **CONTRACTOR** SHE Manager or his **deputy**;
- Incident Controller (IC): **CONTRACTOR** Construction Manager
- Emergency Response Team : Fire brigade, Rescue Team and Medical Team.

5.2 EMERGENCY MANAGEMENT MANAGER (EMM)

The Emergency Management Manager shall be responsible for the overall direction of the emergency response strategy.

He shall:

- Manage every emergency scenarios along with ERT Coordinator;
- Maintain contact during emergency with ERT Coordinator in order to properly response in case of specific necessity;
- Establish the extent of the incident and the type of support required;
- Ensure proper line of communication with **CONTRACTOR** Management and **PTTLNG** representative (as per flowchart);
- Ensure that safe escape routes and assembly points are properly identified;
- Ensure that this document will be revised, when necessary.


The **CONTRACTOR** SM is the Emergency Management Manager and he shall appoint a competent person to carry out his duties and responsibilities in his absence.

5.3 EMERGENCY RESPONSE TEAM COORDINATOR

The **SHEM** at site is the Coordinator of the Emergency Response Team; he shall:

- Manage every emergency scenarios along with EMM;

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- Coordinate, manage and promptly activate the ERT, providing information about the kind of emergency in order to obtain an adequate response by Team;
- Provide information and advice concerning the health and safety aspects of the response activities;
- Ensure that ERT is provided with all the equipment necessary to adequately response in case of every emergency;
- Ensure that ERT is composed only by competent and trained personnel;
- Ensure that all the employee involved in the activities are informed about the procedure to follow in case of emergency;
- Assign for each assembly point a dedicate safety officer;
- Ensure that this document will be revised, when necessary.

CONTRACTOR Deputy SHEM shall carry out above duties and responsibilities at site in the absence of the SHE Manager.

5.4 INCIDENT CONTROLLER (IC)

The Incident Controller, acting as logistics coordinator shall:


- Maintain continuous contact with EMM and ERT Coordinator during emergency;
 - Arrange for the provision of additional equipment such as cranes, forklift, etc. to support activities of the ERT;
 - Ensure the availability of emergency escape vehicles (buses) in appropriate number and at all times, for emergency evacuation.
- This position during the construction is covered by the Construction Manager in his absence he shall appoint a competent person to carry out his duties and responsibilities.

5.5 SAFETY HEALTH ENVIRONMENTAL OFFICER (SHE OFFICER)

The SHE Officer shall:

- Immediately inform ERT Coordinator about the emergency, specifying location and type of incident;
- Make an initial assessment of the severity of the incident;
- Maintain contact with the EMM and ERT Coordinator warn of potential for escalation of incident;
- On agreement with the EMM and ERT Coordinator, activate the Area Escape Alarm, thus ensuring that personnel escape to a safe assembly point away from the affected area;
- In the event of person missing, immediately inform EMM or ERT Coordinator in order to activate the search and rescue procedure.

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5.6 EMERGENCY RESPONSE TEAM

Emergency Response Team shall be composed by competent and trained personnel and shall promptly respond when activated by ERT Coordinator. This team is composed depending on the kind of emergency by:

- Fire Brigade;
- Rescue Team;
- Medical Team.
- Security Team
- Support Team
- CSR Team
- Etc.

ERT shall check that emergency equipment are always in good condition, properly maintained and available in case of necessity.

ERT shall compose of a number of employee (SHE supervisor/officer) that during emergency shall guide workforce to dedicated Assembly Point.

ERT shall be available 24 hours per day, in order to properly response in case of emergency.

5.7 EMPLOYEE/WORKER

Each person who, once an emergency situation is detected, shall immediately inform the SO and/or supervisor of the area in order to start the emergency response process.


5.8 INTERFACE WITH SUBCONTRACTORS

CONTRACTOR and SUBCONTRACTORS will form an integrated Emergency Response Team (ERT).

The CONTRACTOR SM and SHEM are responsible for ensuring efficient communication with the key staff of the SUBCONTRACTORS.

All SUBCONTRACTORS will strictly apply this Emergency Response Plan and develop their own area specific Emergency response plan according to this and submit to the CONTRACTOR for the integration within the present document.

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5.9 SUBCONTRACTORS RULES ON THE EMERGENCY RESPONSE ORGANIZATIONS

All SUBCONTRACTORS SHE Managers will be involved directly in the emergencies management as an integral part of the CONTRACTOR ERT.

SUBCONTRACTORS SHE Managers will interface themselves directly to the **CONTRACTOR'S** Deputy SHEM and will inform their organization promptly to involve SUBCONTRACTORS Management, supervision and workers as soon as possible.

SUBCONTRACTORS shall issue its own emergency procedures to adhere completely to CONTRACTORS and PTTLNG requirements.

6 SITE EMERGENCY TEAM (SET)

6.1 ORGANISATION

Incident response on site will be implemented by the Site Emergency Team (SET).

The SET will comprise a group which will direct emergency response and which will implement on-the-ground emergency response activities.

Site Emergency Team shall establish the Dress Code i.e. Reflective Jackets.

Table no. A – Site Emergency Team (SET)


Emergency Role	Fulfilled one of the following:	Own by
Emergency Management Manager (EMM)	SM	CONTRACTOR
Incident Controller (IC)	Construction Manager (for the area)	CONTRACTOR
Emergency Response Team Coordinator	SHE / Deputy SHE Manager	CONTRACTOR
Emergency Response Team	Fire/Rescue/Medical Team	CONTRACTOR

The SET will gather in the designated Emergency Control Centre located in CONTRACTOR Site Office.

The office/trailer will be clearly indicated and equipped with the following items:

- Copy of Emergency Response Plan;
- Spare Radio with charger;
- Hot line to the Emergency Control Centre;

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- A dedicated line to guarantee 24 hours connection with the PTTLNG;
- Maps and plant lay-out;
- Emergency lighting.

A copy of the ERP will also be distributed to:

- PTTLNG/PMC, in order to facilitate the coordination between the different emergency team;
- All the above responding personnel (SET) and entities;
- SUBCONTRACTOR personnel which will be integral part of the SET, whenever required.

6.2 DUTY AND CALL-OUT ROSTER

The EMM, or his delegate, shall ensure there is always a valid 24 hour Emergency Duty Roster identifying who fulfils the emergency roles and the automatic replacement if unavailable.

Dedicated Radio/emergency mobile phones shall be provided for each SET member.

6.3 MEANS OF COMMUNICATION

The primary means of communication for the SET, in case of emergency developed during construction, will be:

- Air horn
- Radio (or walky-talky);
- Mobile (only in authorized area);


All personnel fulfilling a SET role shall have at all times a radio and/or mobile telephone with himself.

The Emergency alarm during the construction phase will be given by air horn, direct communication, megaphone or walky-talky

7 ERP FOR CONSTRUCTION

Emergency situations occurring within project construction, areas will be managed according to the following sections, through the SET.

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7.1 ALARM SYSTEMS

In case of emergency, the persons shall receive instructions from SET to proceed to the assembly points.

This will be done by radio (or walky-talky) or by alarm system. Alarm system has to be defined;

For **AIR HORNE** use that is:

• **3 short blast on air-horn (approx. 2 seconds each) will activate emergency situation FIRST AID; supervision will respond to the location, assess the situation and call appropriate emergency service.**

• **1 long blast on air-horn (approx. 5 seconds) will activate emergency situation EVACUATION;**

Upon receiving the instructions, all personnel shall proceed in an orderly manner to the nearest Assembly Point and await further instructions. Assign a designated person to proceed to the nearest access/egress gate to direct incoming emergency personnel services.

All other scenarios shall be prompt reported by using the radio / mobile phone system.

7.2 EMERGENCY RESPONSE PROCEDURE

In case of emergency, the person becoming aware of such emergency situation shall immediately inform the SHE Officer or his supervisor **in the area**.


SHE Officer /Supervisor shall immediately communicate with ERT Coordinator providing as clearly as possible:

- Exact location of the incident;
- Nature of the incident;
- Caller's name and location;
- other relevant information.

Upon receiving notification by SHE Officer, ERT Coordinator shall inform the EMM in order to activate the SET.

- At this point, the ERT shall act in the area affected by emergency, based on the information received by the ERT Coordinator.
- At the activation of a local emergency alarm, the personnel shall:
 - Stop all work at once;
 - Shut down and make safe all equipment;
- Vacate the work place, following safety officer instructions proceeding in an orderly manner to the nearest assembly point and wait for further instructions;

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- At the assembly point a roll call is taken and all the personnel are accounted, awaiting further instructions;
- Not return to work until a notification has been received from EMM by the ERT that it is safe to do so.

On being alerted to a **medical emergency**, the personnel shall respect as foreseen in the MERP, but basically must respect following instructions:

- Keep clear of the zone affected by the emergency and remove any vehicles that could cause restriction to the emergency response team (follow the instruction of the SET) or of the ambulance services;
- Not disturb the accident scene;
- Not block the emergency operations;
- Return to work if safe to do so.

During any emergency situation, security personnel shall prevent any person or vehicle not authorized from entering in the incident area. Only authorized Emergency Service, SHE Staff and Project Staff will be allowed into the site incident area.

In the event of person missing:

- SET shall consider likely areas of the site to be searched;
- Provided it is safe to do so, the ERT will organize a systematic search of the area to recover missing persons, starting in the high risk areas;
- As soon as each area is found to be free of casualties, this information shall be transmitted to the EMM;
- Should gas be detected, a Rescue Team with breathing apparatus shall be activated to conduct the activities.


7.3 FIRE

All the personnel shall be instructed on location of fire extinguishers, evacuation routes, and muster points and alarm systems and how to alert them. ERT shall ensure that appropriate extinguishers for the potential types of fires are available.

In the event that a fire should occur, employees shall follow the following procedures, unless directed by the Fire Fighter of the ERT:

- Inform your surrounding colleagues of the fire (i.e. Shout, "Fire", "Fire", "Fire");
- Look for a **ERT member** in the area;

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- If no **ERT member** intervened, try to fight a fire only if have been trained and you deem that it is possible;
- Find appropriate Fire Extinguisher refer to table **below** on type of Fire Extinguisher and use it as below direction:

Most fire extinguishers operate using the following P.A.S.S. technique:


- PULL – Pull the pin. This will also break the tamper seal.
- AIM – Aim low, pointing the extinguisher nozzle (or its horn or hose) at the base of the fire.
- SQUEEZE – Squeeze the handle to release the extinguishing agent.
- SWEEP – Sweep from side to side at the base of the fire until it appears to be out. Watch the area. If the fire re-ignites, repeat steps 2 - 4.

If you have the slightest doubt about your ability to fight a fire... CALL EMERGENCY NUMBER! (refer to section 8.1 reporting of emergency situation)

CLASS	FUEL	USE	DO NOT USE
A	Combustible Materials	Water, Powder	
B	Flammable Liquid and Gases	Foam, Powder, CO ₂	Water (except for cooling and protection)
C	Energized Electrical Components	Powder, CO ₂	Water (except for cooling and protection)
D	Metal	Special Powder, Sand	Any other extinguisher

- Promptly evacuate the area and activate the alarm. Shut off equipment, any involved electric circuit and close down fuel sources, **only** if it can be done without risk.
- When the fire alarm is started, all employees are required to proceed quickly, and orderly to the nearest muster point and alert others to do the same. They shall follow the evacuation procedures and the directions from ERT members.
- Smoke is the greatest danger in a fire, so while evacuating from an area filled with smoke, use a wet handkerchief to protect mouth and nose.
- Special attention shall be paid to ensure that persons with mobility, vision, or hearing disabilities are safely evacuated to a safe distance from the immediate emergency.
- Employees shall not return to the evacuated area unless directed to do so by ERT Team. After any evacuation, employees shall report to muster point. They shall stay there until an accurate headcount is taken. Firefighting team personnel with the assistance of the fire watcher will conduct a roll call for all the workers. They must immediately notify the ERT **Coordinator** of any missing persons, if known.

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7.4 DISASTER RESPONSE SUCH AS STRONG WIND, THUNDERSTORM, HEAVY RAINFALL, FLOODING, EARTHQUAKE, AND TSUNAMI

The risk of incidents involving disaster response such as strong winds, thunderstorm, heavy rainfall, flooding, earthquake and tsunami shall be reduced through proper works planning and weather forecast monitoring.

Watches are issued by relevant Meteorology and Geophysical Organizations to indicate when and where severe thunderstorms and/or tornadoes are most likely to occur. A severe thunderstorm watch implies that storms may develop to sufficient strengths to produce large losses. Information concerning severe weather that may require immediate action is analysed by Construction and followed up by SHE departments which shall access this information by continuously monitoring weather broadcasts.

Alarm shall be sounded when a severe weather watch or warning is announced. However, the clear instruction will be explained below when facing this situation;

A. Strong Wind

For the particular Site Location no strong winds are expected. The monthly wind average velocity ranges from 4 to 7 knots dominantly to the north, south, and south west. These values, classified in the Beaufort scale of winds with the scale number 1-3 (Light Winds) can not cause any disruption to activities or people involved.

The following precautions shall be observed in case of occasional strong winds:

In case of wind speeds over 47 km/h (25 knots, 13 m/s, measuring Beaufort 6, "Strong Winds") measured at 20 m above sea level, the activities on elevation shall be stopped and only particular urgent operations shall be expressly authorized (e.g. securing temporary works).


Particular care shall be paid to working on elevation, where the wind speed is higher than the ground level, and in particular when walking on scaffolding, avoiding, on the same, the transport of materials, equipment and other objects which could fall on the area below.

Taking care of the housekeeping and the materials fastening on work places.

Lifting of plates and/or handworks with a high (surface/ weight) ratio as well as the lifting of people and/or materials inside of baskets, shall be carefully evaluated by the person in charge for the works, with regard to the wind speed, so as to prevent particular oscillations and lifted loads unsteadiness.

Insufficient protection from the wind action, during welding, cutting or scarfing can cause the spreading of smelting drops, with consequent risks due to the people contact and the fire triggers. In these conditions it should considered that also a small smelting drop which nestles in the planks interstices can be the cause of a fire.

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B. Thunderstorm

In case of imminent thunderstorm or severe weather emergency occurred, a sound alarm will warn about the necessity of leaving the work places in outdoor areas.

It should be kept in mind that, in similar situations, lightning is the most dangerous phenomenon for human life.

The main prevention rules to be carried out before or during a thunderstorm are:

- Do not stay by or take cover below metal masses (yard outdoor frameworks, piping, scaffolds, etc.) specially being on the ground;
- Do not stay by cranes, excavators, heavy vehicles or equipment, poles and tower lights, wire ropes, fences;
- Do not stay by earth or power traps;
- Do not stay under trees;
- Do not stay by electric boxes or containers with electrical connected equipment;
- Inside of the workshops do not stay or touch metallic framework (pillars, steel external walls);
- Do not stay or shelter under beach umbrellas or other frameworks with pointed parts;
- Suspend the electrical maintenance activities on facilities (e.g. electrical cabins) and/ or power system connected machines;
- Use the phone only in necessity case, take the headphones off;
- If riding, get off and go away from the bike.

It is reminded that the danger exists even if the lightning strikes close by a person: the current of lightening does not directly "come into" the ground, as commonly one thinks, but it distributes on a surface losing its intensity as the person goes away from the fall point.


If a person goes away from the fall point walking at strides, the electric potential difference between the ground under a foot and the other can be dangerous determining involuntary muscles contractions, respiratory or cardiac arrest.

If the lightning strikes close to a person, therefore, it is recommended to go slowly off and, mostly, to take short steps.

If into a car or into a mean cabin, the risks are the least, but it is necessary to remember of:

- Closing windows and doors or hatches;
- Not to touch metal parts or the car radio;
- In case of the car is not made of metal, on no account, it is not to be considered safe.

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In case a worker was observed being struck by a lightning, he would not result electrically charged and so touching him would not be dangerous. Anyone in the vicinity shall intervene promptly for the first-aid, if trained and qualified to do so, otherwise emergency help shall be sought.

All activities must cease during thunderstorms and personnel must remove themselves to the designated muster point.

ERT **Coordinator** to assign the ERT member to:

- Warn workers in his respective areas;
- Report the number of workers in the muster point;
- Report any persons injured or property damage to CONTRACTOR ERT **Coordinator**;
- ERT members will advise individuals in their area to:
- Remain calm. Do not run, panic, or cause others to panic;
- Quickly gather in small groups of 3-4 people and use the "buddy system" while moving to the nearest shelter.

All workers will remain at the recommended place until the "ALL CLEAR" is given by CONTRACTOR ERT **Coordinator**.

All radio users shall be instructed by SHE personnel to keep channels clear for emergency communications.

SHE and Construction personnel will continue to monitor the local weather conditions under direction of CONTRACTOR ERT **Coordinator**, and shall announce the "ALL CLEAR" status to all workers, when the Severe Weather WARNING is cancelled. Updates will be provided to workers, when possible, as to the status of the severe weather warning.


Protocol for lighting

When the flash/bang count is at 15 seconds, supervision will suspend all crane work and elevated work activities.

When the flash/bang count is at 9 second or less, all activities will be suspended and the site will be cleared. All employees will report to sheltered place at site (buildings, trailers etc.), where a head count will be done as per the evacuation protocols and the proper notification will be made.

All work will remain suspended until the decision to return to work is reached by the CONTRACTORS's Construction manager together with the SUBCONTRACTORS representatives at site,

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C. Heavy Rainfall and Flooding

All efforts will be made to prevent flooding during the heavy rainfall.

The following action should be made to prevent the flooding; but not limited to:


- Make sure that roof's gutters at each building/workshop and downspouts are in good condition
- Periodic maintenance of the drainage system
- Periodically inspection on all the sewage pits

D. Earthquake and Tsunami

During an earthquake, employees shall remain calm and follow the steps below:

- IF INDOOR, employees shall seek refuge in a doorway, under a desk or table. Stay away from glass windows, shelves, and heavy equipment;
- IF OUTDOORS, employees shall move quickly away from buildings, utility poles, and other structures. Always avoid power or utility lines as they may be energized;
- IF IN A VEHICLE, they shall stop in the safest place available, preferably away from power lines and trees. Stop as quickly as safety permits;
- After the initial shock, evaluate the situation and wait for instructions from ERT;
- Employees shall protect their selves at all times & be prepared for aftershocks and tsunami;
- If hazards resulting from the earthquake should occur such as fires, hazardous material spills, and/ or power black-outs, employees shall contact SHE personnel and follow the Emergency Response established in this plan;
- All employees should be made aware on the suggested evacuation routes to the muster points, where assistance can be provided and the headcount is performed till the "all clear" is given;
- Employees shall be alerted for a massive tidal wave or Tsunami. If there is any sign of Tsunami, ERT members shall instruct workers to evacuate to the higher ground or inland, preferably by foot, especially after there has been a strong earthquake, causing damages to roads;
- If on a boat, when a tsunami is coming, it is suggested to leave the shore area/ harbour for the open water, where tsunami effects are minimal.

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7.4.1.1 Machinery or Equipment Failure

In the event of the machinery failures immediately call the and report to Site Supervisor. Assess the situation and immediately shutdown the machinery. Consider consequences:

- Potential spillage
- Potential fire occur

Liaise with the SITE management team in order to assess the potential property damage.

7.4.1.2 Vessel/Barge Collision/ Mooring Failure

In the event that collision occurs between the Vessel with other vessels or mooring failure during berthing at Construction Site location the emergency call to ERT Coordinator shall be done immediately liaise with Marine **Work** Team to assess the situation; the **SUBCONTRACTOR in charge for the operation shall ensure the below assessment completed and full capability in the response**:

- Extent of damage caused – on both affected facilities;
- Likelihood of continuing failure of both facilities induced by the collision;
- Necessity for Partial/Total evacuation of the barge;
- Activate the Evacuation Procedure;

When reporting such incident/ accident refer to Incident Investigation and Reporting (Doc. No. 122018-SPCC-C-SH-PR-0014), the following information is required:


- Size or weight of colliding facility/ vessel;
- Name and Port of Registry of the Vessels;
- Locations related to the facilities;
- Whether it is completely or partially "disabled";
- Present weather conditions i.e. wind, roll, current, tide, etc.;
- Weather focuses and reports;
- Other vessels available in the vicinity of the incident/ accident

7.4.1.3 Transportation Incident

In case of transportation accident the following prompts apply:

- Coordinate evacuation of the **Injured Person (IP)** to the safe area;

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- Call an emergency number;
- Determine level of escalation requirements;
- Coordinate first aid treatment, if trained to do so, until arrival of the ambulance/medical assistance;

Request further resources as may be required;

- Advise the Police as required under the Thailand Road Traffic Regulations, if the incident happened outside of the boundaries of the construction site;
- Ensure adjacent equipment/ plant is moved to a safe area (subject to incident non-disturbance requirements);
- Remain at the location until all injured personnel have been treated/ evacuated and the site has been made safe;
- Advise appropriate person of incident status, number of casualties, or extent of property damage and CONTRACTOR SHE Department – SECURITY Coordinator and HR Manager in order to initiate incident reporting.

7.4.2 SECURITY

7.4.2.1 Security Coordinator

The Security Coordinator is responsible for the supervision and control of security personnel and their performance during an emergency situation. The Security Coordinator shall ensure the instructions he provides to Security Officers (as well as the Security Officers' conduct) comply with the terms of the contract and Company expectations.


7.4.2.2 Security Personnel

The Security Personnel shall be responsible for:

- Registering the Visitor and giving them the Visitor Badge;
- Bringing the visitor log book to be used to re-check the visitors in the muster point;
- Acting as Fire Watcher on their respective areas;
- Ensuring the exit door from office area is available to pass without any obstruction;

Directing the employees/ visitors to the nearest emergency exits and muster point, preventing running or lagging behind and ensuring traffic roles are observed.

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7.4.3 Evacuation

Evacuation of the entire project areas is unlikely to be required but in case will be required all personnel have to stop all activities, clear the area and immediately proceed to the designated site assembly points.

7.4.4 Head Count

- The supervisor/foreman of each working team is responsible for the headcount of its working partners.
- SHE officers are responsible for collecting/accumulating total headcount and have to make sure that all personnel are present with compare of Register File ID access system.
- Rescue operation will start to find out missing personnel, if any.

7.4.5 Emergency Equipment Checklist

During Construction phase following equipment shall be inspected on weekly basis.

Emergency Equipment Checklist for		
Guard Light	Flashlight & Extra batteries	Emergency Contact Sheet
Hard hats/ear protection;	Pocket knife	Evacuation Plan
Leg protectors, approved safety footwear;	First Aid Kit	Local Maps
Goggles/safety glasses with side shields;	Dust Masks	Stretcher and blankets;
Whistle	Fire Extinguisher	Ambulance; emergency vehicle; emergency rescue boat.
Walkie-talkie	Wrench/Saw	Gloves


7.5 TRAINING

The principles and most important information about Emergency Response Plan shall be gathered in:

- CONTRACTOR SHE Induction;
- Regular meetings to explain and understand the emergency procedures;
- Pre-job Safety Meeting and Tool Box Talk.

All SET member shall participate to specific training which advice and inform them about their duty and responsibilities in case of emergency.

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Dedicated training has be done for ERT members.

Training sessions for CONTRACTOR personnel shall be documented by the DEPUTY SHEM.

SUBCONTRACTORS SHE Manager shall ensure training sessions for their personnel to familiarize them with the Emergency Response Plan.

7.6 EMERGENCY DRILLS

- SHEM at site shall prepare a dedicated plan to test and simulate on monthly basis, the response in case of emergency.
- ERT Coordinator shall supervise the Emergency Drills and shall prepare a report to summarize the findings and evaluate possible actions to improve the method/operations. The report shall be shared with CONTRACTOR organization.
- The schedule shall consider new workers and SUBCONTRACTOR arrival on the project in order to include them in the drills.
- Emergency Drills shall include all the foreseen scenarios.(For Emergency Drills form refer to section 10)
- Emergency drills shall cover all foreseen scenarios as identified in sect 12.

7.7 MEDICAL FIRST AID FACILITIES

Inside medical facility (first aid room/clinic) all the equipment shall be periodically checked at least on monthly base by the Nurse/Medical staff in accordance with the number of employees and the relevant medical needs.

After using the First Aid Kit, the Medical staff shall ensure that First Aid Kit is re-furnished and available.


Urgent cases will be evacuated to the Hospital at given **numbers in section 8.2** .

7.8 PROCEDURE UPDATE/ REVISING

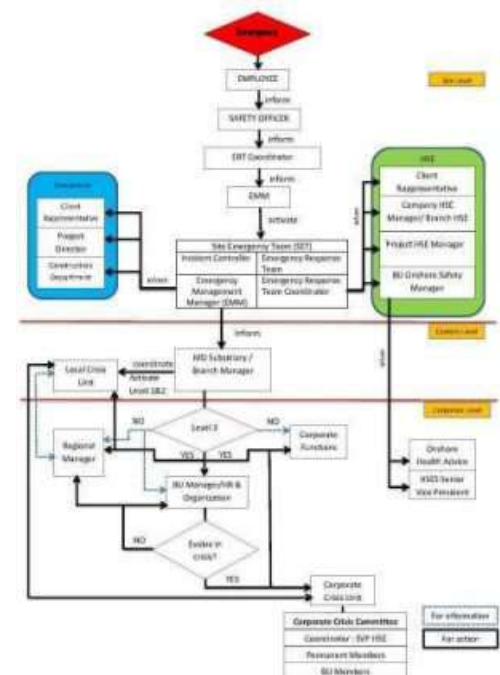
Document will be updated when:

- In case of a change of the legislation/ regulation or revision from authority.
- In case of management of change.
- After completion of the emergency drill or after the occurrence of emergency situations (if necessary)
- Assessment and reviewing to be taken in Annual basis whether they are still relevant with the PROJECT needs.




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7.9 EMERGENCY MANAGEMENT FLOWCHART



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8 SITE EMERGENCY CONTACT NUMBERS

8.1 SITE EMERGENCY CALL (FOR REFERENCE) AT SITE THIS PART SHALL BE UPDATED BASED ON THE NEEDS



SITE EMERGENCY CALL

SPCC Site Emergency Contact

Name	Position	Mobile Phone




SUBCONTRACTOR On Site Representative/Contact Point

Name	Position	Mobile Phone

SITE EMERGENCY RESPONSE TEAM(S) (ERT) SPCC and SUBCONTRACTORS

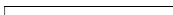
NAME	POSITIONED (WORK PLACE/OFFICE)	CONTACT NUMBER
	SPCC container office	
	PK container office	

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	COORDINATOR		SITE CLINIC			LEADER
8	SECURITY COORDINATOR	TBD			TBD	ERT SECURITY LEADER AND SUPPORT EMM FOR THE COMMUNICATION WITH THE LOCAL AUTHORITIES
9						SUPPORT EMM FOR THE COMMUNICATION WITH THE LOCAL AUTHORITIES
10	SHE OFFICER AREA MARINE WORKS	CHAN				INFORM ERT COORDINATOR
11	SHE OFFICER AREA BOP	SANAN				INFORM ERT COORDINATOR
12	SHE OFFICER AREA TANK	TBD				
13	ENVIRONMENTAL SPECIALIST	VARANGRAT				ERT ENVIRONMENTAL LEADER (ENV INCIDENT / EMERGENCY)
14	SITE NURSE	TBD				SUPPORTING ERT HEALTH LEADER AND ACTING AS DEPUTY
SUBCONTRACTOR SITE EMERGENCY TEAM -SET BOP						
N°	POSITION	NAME	MOBILE	EMAIL	WHF RADIO CHANNEL	ROLE INTO THE SITE EMERGENCY
	PROJECT MANAGER					EMERGENCY MANAGEMENT MANAGER (EMM)
	CONSTRUCTION MANAGER					INCIDENT CONTROLLER (IC)
	SHE MANAGER					EMERGENCY RESPONSE TEAM COORDINATOR
						EMERGENCY RESPONSE TEAM MEMBER

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


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8.2 EMERGENCY CONTACT DIRECTORY

IN AN EMERGENCY SITUATION THE UNDER LISTED CONTACT NUMBERS CAN BE REACHED TO ACTIVATE EMERGENCY RESPONSE ACCORDING TO THE EMERGENCY MANAGEMENT FLOWCHART (7.9)




HOME OFFICE FUNCTIONS							
N°	POSITION	NAME	MOBILE	EMAIL	WHF RADIO CHANNEL	ROLE INTO THE EMERGENCY	
1					NA	NOTIFIED BY SITE MANAGER (EMM)	
2					NA	NOTIFIED BY SHE MANAGER	
3					NA	NOTIFIED BY EMM, ACTIVATE THE LCU	
4					NA	NOTIFIED BY SITE MANAGER (EMM)	
5					NA	NOTIFIED ON BEHALF OF PD BY SITE MANAGER (EMM)	
6					NA	NOTIFIED BY SITE SHE MANAGER (ERT COORDINATOR)	
SITE EMERGENCY TEAM - SET							
N°	POSITION	NAME	MOBILE	EMAIL	WHF RADIO CHANNEL	ROLE INTO THE SITE EMERGENCY	
1					TBD	EMERGENCY MANAGEMENT MANAGER (EMM) INFORM MANAGING DIRECTOR	
2					TBD	AREA INCIDENT CONTROLLER (BOP-IC)	
3					TBD	AREA INCIDENT CONTROLLER (MW-IC)	
4					TBD	AREA INCIDENT CONTROLLER (...)	
5					TBD	ERT COORDINATOR	
6					TBD	DEPUTY ERT COORDINATOR	
7	HEALTH	TBD	MOB.		TBD	ERT HEALTH	

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8.3 SITE PTTLNG/PMC REPRESENTATIVE NOTIFICATION NUMBER

PTTLNG and TGES Site Representative to be notify

Name	Position	Mobile Phone

8.4 EXTERNAL/ PUBLIC SITE EMERGENCY CONTACT NUMBERS

Hospital Table.

Item	Hospital Name	Telephone
1	Rayong Hospital	038 611 104
*2	Princess Sirinthorn Maptaphut Hospital http://www.maptaphuthospital.com	038 684444
*3	Banchang Hospital	038 603995
4	Nikom Pattana Hospital	038 038050-1
*5	Bangkok Rayong Hospital	038 921999
6	Ruamphat Rayong Hospital	038 860890-3
*7	The Mongkut Rayong Hospital	038 691800
11	Queen Sirikit Hospital	038 245700
*12	PTT GC Emergency Control Center http://www.npc-se.co.th	038 977700

Note 1. In Rayong for severe cases the hospital to go are ***3 Banchang Hospital**.

***5 Bangkok Rayong Hospital for No Thai speaking** emergencies to reach Bangkok Hospital Rayong (call 1719 international call centre).

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Note 2. *1 CTCL personnel - The Mongkut Rayong Hospital




Note 3. *2 This Hospital is the closest (6.5km/ 9 min.) to SITE, but Thai language only and open 24/7, Number to call (in Thailand) is **1669**; public ambulance arrives within 4 minutes.

Note 4. *12 This clinic centre is just 700 meters away from SITE and with ambulances on standby.

Nurse Emergency Alert Centre Rayong **1669**

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8.6 POLICE OFFICES NUMBERS



Name	Place	Mobile Phone
Police Center	All areas	191
Rayong Provincial Police Station	Rayong	038 611 111, 038 613 676
Map Ta Phut Police Station	Map Ta Phut	038607 111
Banmang Police Station	Banchang	038 601 111
Nikhom Pattana Police Station	Nikhom Pattana	03863 6111
Huay Pong Police Station	Huay Pong	038 683 100

8.7 FIRE DEPARTMENT NUMBERS



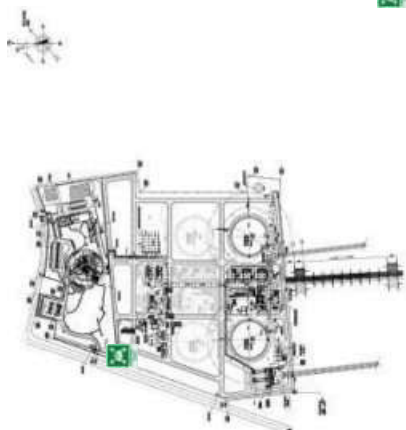
Name	Place	Mobile Phone
Firefighters Center	All areas	199
Rayong Fire Department	Rayong	038 611 145
Map Ta Phut Fire Department	Map Ta Phut	038 675 562, 038 636 438
Banchang Fire Department	Banchang	038 695 271
Rescue, Sawangporn Charity, Rayong	Rayong	038 611 092
Rescue, Siam Deemsha (Pu Inin), Rayong	Rayong	038 636 859

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Revision : F1 Status : IFF		Revision : F1 Status : IFF
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Contractor Project : PTTLNG Nong Fab LNG Receiving Terminal Project	Contractor Phase : EPCC Phase	Contractor Discipline : SH

9 ASSEMBLY POINTS FOR THE SITE PREPARATION (as reference)



ASSEMBLY POINT CLOSE TO THE GATE 2

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	Emergency Preparedness and Response Plan for construction	PTTLNG Doc. No.: 122018-SPCC-C-SH-PR-0017 SPCC Doc. No.: XA74-0000-017 Revision : F1 Status : IFF
Contractor Project : PTTLNG Nong Fab LNG Receiving Terminal Project	Contractor Phase : EPCC Phase	Rev. Date : 20/11/2018
Contractor Discipline : SH		Page 34 of 36

10 EMERGENCY DRILL FORM

EMERGENCY DRILL FORM		DATE	REVISION
DRILL DATE	TIME		
TYPE OF DRILL (mark x in the corresponding column)			
Announced	Unannounced		
Fire	Medical		
Oil/Chemical Spill	Confined Space Rescue		
Civil Unrest	Multiple Casualties		
Rescue	Other (Specify)		
DRILL INITIATED BY	NAME	POSITION	SIGNATURE
PERSON IN CHARGE	NAME	POSITION	SIGNATURE
DRILL SCENARIO (Description of Drill Process and activities simulated)			
SCENARIO:			
SCOPE:			
OBJECTIVES:			
EMERGENCY RESPONSE TEAM:			
OBSERVERS:			
DRILL TIMINGS:			
POSITIVE ITEMS:			
NEGATIVE ITEMS AND CORRECTIVE ACTIONS:			
OBSERVATION	CORRECTIVE ACTION	RESPONSIBLE PERSON	DUE DATE

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	Emergency Preparedness and Response Plan for construction	PTTLNG Doc. No.: 122018-SPCC-C-SH-PR-0017 SPCC Doc. No.: XA74-0000-017 Revision : F1 Status : IFF
Contractor Project : PTTLNG Nong Fab LNG Receiving Terminal Project	Contractor Phase : EPCC Phase	Rev. Date : 20/11/2018
Contractor Discipline : SH		Page 35 of 36

	Emergency Preparedness and Response Plan for construction	PTTLNG Doc. No.: 122018-SPCC-C-SH-PR-0017 SPCC Doc. No.: XA74-0000-017 Revision : F1 Status : IFF
Contractor Project : PTTLNG Nong Fab LNG Receiving Terminal Project	Contractor Phase : EPCC Phase	Rev. Date : 20/11/2018
Contractor Discipline : SH		Page 36 of 36

11 EMERGENCY DRILL PLAN 2018

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12 EMERGENCY AND CRISIS SCENARIO



BU-ON Emergency scenarios

Reply to PTTLNG Comments

PTTLNG Transmittal No. : R-122018-SPCC-PJT-T-32263
PTTLNG Document No. : 122018-SPCC-C-SH-PR-0039
Revision : F1
Title : Emergency Preparedness and Response Plan For Commissioning

PTTLNG Transmittal No. : R-122018-SPCC-PJT-T-32263
PTTLNG Document No. : 122018-SPCC-C-SH-PR-0039
Revision : F1
Title : Emergency Preparedness and Response Plan For Commissioning

No. Rev.	Pages and articles referring	PTTLNG/PMC Comments	SPCC Reply	PTTLNG/PMC Reply
13 R2	pp.13 sec.7	General comment: Please put in Abbreviation and clarify its meaning. Or, Please recheck this abbreviation is correct or not (PHSEM at page 67).	Updated accordingly.	Noted
14 R2	pp.15, sec.7	Please include Ambulance	Updated accordingly.	Noted
15 R2	pp.15, sec.7	Not only "competent and trained personnel" and shall also include "certified, at least intermediate fire fighting."	Include the fire fighting and/or rescue certified	Noted
16 R2	pp.19, sec.8	The responsible for Emergency level 3 will be assistance / supported and commanded by the relevant Corporate functions and/or authorities and public administrations of Province, (as the same comment on page 5)	The PHSEM coordinate with the relevant Corporate functions and/or authorities and public administrations of the Province to assist/supported and commanded	Noted
17 R2	pp.20, sec.8	Please consider to use PA/ GA alarm system instead of radio/ phone for Commissioning	PA/ GA alarm system and /or manual siren and/or two-way radio (explosion-proof type (Ex)):	Noted
18 R2	pp.20, sec.8	This paragraph, please clarify, - When the workers hear the alarm in the first time, he/she shall proceed to move to muster point without further notices like an Emergency Evacuation Level 1,2 and 3, is it correct?	Refer to comment on page 20. Also, Please refer to document No.122018-SPCC-C-SH-PR-0010 F2 Emergency Preparedness and Response Procedure page 11727 Item 7.1 ALARM SYSTEMS	Noted
19 R2	pp.21, sec.8	Please add "Explosive"	Updated accordingly.	Noted
20 R2	pp.21, sec.8	Please additional clarify number of Firefighting Team and Standby Fire Kits for Emergency cases during the Commissioning and shall be adequated and prepared at site.	The number of Firefighting Team and Standby Fire Suite shall be identify on the Pre-Fire Plan for commissioning	Noted

Reply to PTTLNG Comments

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No. Rev.	Pages and articles referring	PTTLNG/PMC Comments	SPCC Reply	PTTLNG/PMC Reply
21 R2	pp.22, sec.8	similarly comment on page 10	Project Document "122018-SPCC-C-SH-PR-0040 Waste Management Plan for Commissioning"	Noted
22 R2	pp.22, sec.8	Please add number of Chemical & Spill Kits and the competency environment management team include but not limited to: - Adequate equipment for standby to use in any emergency cases during Commissioning - Special PPE for hazardous material control to be prepared. ***above list shall be covered Onshore and Offshore then list out and Co-inspection by Client**	The number of Chemical & Spill Kits including ERT shall comply with the minimum Project requirement.	Noted
23 R2	pp.23, sec.8	Please describe how to manage the access/egress and Emergency Evacuation exit route in Commissioning area.	The access/egress shall provide the security guard control and the Emergency Evacuation exit route in the commissioning area shall designate to be safe places up to the emergency situation and wind direction.	Noted
24 R2	pp.23, sec.8	Please clarify the alarm tone system of each of siren tone for each emergency level (1,2 and 3) - How to proceed when hearing siren i.e. 1st, 2nd and 3rd times. - Is there specified of siren tone when Emergency is under control	The kind of siren tone shall estimate and communicate to the concerned person by the training program and Project ID badge.	Noted
25 R2	pp.27, sec.12	Please check and correct to right place (Gas Plant)	Updated accordingly.	Noted
26 R2	pp.27, sec.12	Please list out the Emergency Facilities including with number of each Emergency equipment to comply with the minimum as project requirements.	(Ref. from [5] to [12]).	Noted

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Title : Emergency Preparedness and Response Plan For Commissioning

No. Rev.	Pages and articles referring	PTTLNG/PMC Comments	SPCC Reply	PTTLNG/PMC Reply
1 R2	pp.5, sec.3	General comment: revise "Saipem" to be "SPCC"	Update wording SAIPEM to SPCC.	Noted
2 R2	pp.5, sec.3	Shall be revised to align with PTTLNG Emergency response plan guide line. For, neighbor Industrials and Local community to get an impact" and Emergency level 3 will be assistance / supported and commanded by the relevant Corporate functions and/or authorities and public administrations of Province.	Noted and revised	Noted
3 R2	pp.7, sec.5	Please re-check what the requirement is needed to be complied with IEAT regulations.	No requirement is to comply with IEAT regulations.	Noted
4 R2	pp.8, sec.6	Please consider to add more potential of emergency (Refer to PTTLNG Emergency response Plan Guideline) such as: - LNG leakage - Jetty/ impact such as ship collision - Disaster of Nature such as Earthquake, High wave - Disease Outbreaks (extremely) - Man Overboard from Jetty (extremely) - etc.	<ul style="list-style-type: none">LNG spillage/leakage and Gas cloudsJetty impact such as ship collisionDisaster of Nature such as Earthquake, High waveDisease Outbreaks (extremely)Man Overboard from Jetty (extremely)	Noted
5 R2	pp.9, sec.6	Please add neighbor Industrials and Local community to get an impact refer to the same comment on page 5	Update accordingly	Noted
6 R2	pp.9, sec.6	Please move it up	Update accordingly	Noted
7 R2	pp.10, sec.6	Please move it up	Update accordingly	Noted

Reply to PTTLNG Comments

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No. Rev.	Pages and articles referring	PTTLNG/PMC Comments	SPCC Reply	PTTLNG/PMC Reply
8 R2	pp.10, sec.6	Shall be insufficient	Update accordingly	Noted
9 R2	pp.10, sec.6	Even though this statement is able refer to Contingency Plan Procedure but also need to revise statement on item 7 OIL SPILL OFFSHORE MITIGATION MEASURES, bullet (1) first paragraph "A sufficient number of sea fence boom for Commissioning activities atleast 250 meters oil boom for quick deployment"	This comment already mention on item 8 COMMISSIONING SPILL PREVENTION PLAN second paragraph bullet (2)	Noted
10 R2	pp.11, sec.6	Please move it up	Updated accordingly.	Noted
11 R2	pp.11, sec.6	The Security Plan shall be specified only for commissioning and Start-up	Refer to the Security Plan (122018-SPCC-C-SH-PR-0029). -As per project requirements and reasons related HSSE and/or Construction and/or Commissioning, it can be necessary to open new gates or to change the status of the mentioned gate. For any changes related to the gates SPCC will inform PTTLNG/PMC. Under any case all gates will be provided with security checks and personnel.	Noted
12 R2	pp.11, sec.6	Please consider to add statement of Lighting fixtures shall be specified the types of lighting equipment for using at Commissioning and Start-up area	Updated accordingly.	Noted

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PTTLNG Transmittal No. : R-122018-SPCC-PTT-T-32263
PTTLNG Document No. : 122018-SPCC-C-SH-PR-0039
Revision : F1
Title : Emergency Preparedness and Response Plan For Commissioning

No. Rev.	Pages and articles referring	PTTLNG/PMC Comments	SPCC Reply	PTTLNG/PMC Reply
48 R2	pp.37	Medical Please consider to be amended "Overall Emergency Medical Management and Communication Flowchart" The detail of this flowchart shall be explained the information of Emergency's scope but not limited to: 1. Category level of Emergency for Commissioning 2. Communication channel (Radio & Phone) including with External Parties. 3. Classification which is the level of Emergency is required to communicate to Internal/External parties. 4. Sequence of Emergency Response Plan shall be running by not limited to: 4.1 Notice of Emergency 4.2 Evacuate level of Emergency and notice to perform evacuation/move to designated Muster Points. 4.3 Control the event as per Emergency Response Procedure. 4.4 Initial Press Release. 4.5 Notice of Event is under control. 4.6 Investigation meeting. 4.7 Provide the Corrective Action and Preventive Measures (Restoration) 5. Item 1-4 to be responsible by "Whom?" DRILL NO:	Updated accordingly. Updated accordingly.	Noted
49 R2				
50 R2	pp.38		Updated accordingly.	Noted
51 R2	pp.38		Updated accordingly.	Noted

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No. Rev.	Pages and articles referring	PTTLNG/PMC Comments	SPCC Reply	PTTLNG/PMC Reply
52 R2	pp.39	Please specific the Responsible person; - Prepared by - Approved by	Responsible persons for Drill report were mentioned on the right bottom of the page	Noted
53 R2	pp.40	Please Delete	Noted and revised.	Noted
54 R2	pp.40	Please add Marine dept. on list	Updated accordingly.	Noted

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PTTLNG Document No. : 122018-SPCC-C-SH-PR-0039
Revision : F1
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No. Rev.	Pages and articles referring	PTTLNG/PMC Comments	SPCC Reply	PTTLNG/PMC Reply
27 R2	pp.27, sec.12	In addition, First Aid Facilities shall be list out including with the number of each Emergency Equipment to comply with the minimum Project requirements.	First Aid Facilities and the number of the Emergency equipment shall comply with the minimum Project requirement.	Noted
28 R2	pp.28, sec.12	please move it up one step	Updated accordingly.	Noted
29 R2	pp.28, sec.12	-Refer to previous comment. - Oil Spill Facilities shall be listed out including with number of each Emergency Equipment to comply with the minimum of the Project requirements.	The number of Chemical & Spill Kits including ERT shall comply with the minimum Project requirement	Noted
30 R2	pp.28, sec.12	Wind sock installation location shall be marked on the plot plan layout	Wind sock installation shall be marked on the plot plan layout put on the Pre-Fire Plan for commissioning	Noted
31 R2	pp.28, sec.12	"What type of Radio?"	(explosion-proof type (Ex))	Noted
32 R2	pp.28, sec.12	"List as per item 12.1"	(Ref. from [5] to [12]).	Noted
33 R2	pp.28, sec.12	Please refer to attachment XXX	(refer to APPENDIX 1 - Emergency Contact Numbers)	Noted
34 R2	pp.28, sec.12	Please consider to add equipment include but no limited to - CCTV.	13.CCTV shall comply with the minimum Project requirement	Noted
35 R2	pp.29, sec.12	please move it up one step	Updated accordingly.	Noted
36 R2	pp.29, sec.12	(Special)	Updated accordingly.	Noted
37 R2	pp.29, sec.12	Emergency Special PPEs shall be listed out with total number of each.	The number of Emergency Special PPE shall comply with the minimum Project requirement	Noted

Reply to PTTLNG Comments

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PTTLNG Document No. : 122018-SPCC-C-SH-PR-0039
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Title : Emergency Preparedness and Response Plan For Commissioning

No. Rev.	Pages and articles referring	PTTLNG/PMC Comments	SPCC Reply	PTTLNG/PMC Reply
38 R2	pp.29, sec.13	/ Explosion & Evacuation	Updated accordingly.	Noted
39 R2	pp.29, sec.13	Please consider add simulation for "Gas leakage"	Spillage/leakage and Gas clouds	Noted
40 R2	pp.32	PTTLNG/PMC Key persons (Emergency Team) shall be listed one more table	Updated accordingly.	Noted
41 R2	pp.32	What is the difference meaning between PHSEM?	Updated accordingly.	Noted
42 R2	pp.32	PTTLNG/PMC Key personal (Emergency Team) shall be listed in new table	Updated accordingly.	Noted
43 R2	pp.32	Please move it down one step	Updated accordingly.	Noted
44 R2	pp.34	PTTLNG/PMC Terminal-1 Fire Brigade	Updated accordingly.	Noted
45 R2	pp.34	Please move it down	Updated accordingly.	Noted
46 R2	pp.34	SPCC shall be listed out of all involved of Local Communities are needed to be informed the Emergency Situations for each Level	Updated accordingly.	Noted
47 R2	pp.36	1. Please consider specific Muster Points location and shall be separated depend on each Commissioning activity and area. 2. The Escape route line of Evacuation needs to be specific on plot plan in both Onshore and Offshore. 3. Where is proper windsock location needed to be installation of both Onshore and Offshore? (update for commissioning period) 4. No more temp. pond # 2 please update plot plan.	Confirm with revised. -The proper windsock and Escape route shall identify on the Pre-Fire Plan for commissioning	Noted


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			Revision: F1	Status: IFF
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EMERGENCY PREPAREDNESS AND RESPONSE PLAN FOR COMMISSIONING

DOC CLASS Z2

REV.	STATUS	DATE	REVISION DESCRIPTION	BY	CHK.	APPR.
F1	IFF	28/09/2021	Issued for Final			
R2	IFR	30/08/2021	Issued for Review			
R1	IFR	27/07/2021	Issued for Review			


	EMERGENCY PREPAREDNESS AND RESPONSE PLAN FOR COMMISSIONING		PTTLNG Doc. No.: 122018-SPCC-C- SH-PR-0039	
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1. INTRODUCTION

The purpose of this document is to ensure that all foreseeable emergency situations arising during pre-commissioning, commissioning, start up and test of the new plant, particularly for offshore where distance (5 km +) from transport and emergency facilities will be developed, properly identified, reported and dealt with in a safe and effective manner.

This Emergency Response Plan covers:

- Nomination of persons responsible for managing an emergency situation;
- Definition of roles/responsibilities of emergency response team;
- Procedures for reporting, communicating and response action in an emergency;
- Monitoring, testing and maintenance of alarm systems and early warning devices;
- Training requirement including mock drill exercises for emergencies;
- Rescues and medical treatment of casualties.

It is the responsibility of the CONTRACTOR Project Manager to ensure that all personnel, including visitors, are made fully aware of the contents of the emergency response procedures and receive information and induction training as necessary. The information and the training shall be documented.


This Emergency Response Plan describes the initial response actions, resource mobilisation, training in emergency response, and testing in respect of incidents which could occur during pre-commissioning and commissioning of the project, where an incident may arise on the work site.

Note:

This document is a living document and gives an initial guide/procedure to manage emergency in the Project and should be reviewed at Site during work execution, if necessary.

2. SCOPE


This procedure is applicable to all activities in connection with the pre-commissioning, commissioning, start up and test of Project and shall include all company employees, subcontractors, visitors and others who may be affected by the project's activities.

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3. DEFINITIONS

Within this review the following definitions shall apply:

Accident	Any unforeseen event causing an emergency
Crisis	An event or sequence of events of extreme concern or danger, able to disrupt the organization capability to re-conduct the situation under control with its own resources.
CLIENT	PTTLNG
CONTRACTOR	SPCC JV
PROJECT	Nong Fab LNG Receiving Terminal Project
Emergency	Event that causes a deviation from normal operating conditions, and such as to result in harm or potential harm to the health and safety of people, the environment and the PTTLNG's or third parties' assets. Emergency may result from human behaviours (terroristic attack, civil war, riots, demonstrations, sabotage, etc.), malfunctions or failure of machine or plant, technical event (ignition, explosion, short circuit, etc.) or natural events (earthquake, hurricane, etc.).
1st level Emergency (Minor case)	A minor emergency that can be effectively addressed locally using personnel and equipment available on site and/or to the Operating PTTLNG.
2nd level Emergency (Major case)	An emergency that can be addressed locally with the support of personnel and equipment made available by authorities and public administrations at peripheral level.
3rd level Emergency (Serious case)	An emergency which cannot be addressed locally and impacts the Site's and/or the Operating Company's operations and/or neighbor Industrials and/or Local community, requiring assistance/support and command by the relevant Corporate functions and/or authorities and public administrations of the province.
Emergency Response Team	Group of qualified personnel responsible for managing emergencies (fire, medical or rescue)
HSE Crisis Unit	The SPCC HSE Crisis Unit coordinates management of emergency situations level at SPCC Group level and is responsible for providing the necessary information to all interested parties.
Medical Emergency response Plan (Merp)	Procedure for dealing with medical emergencies and the necessary emergency response.
SECURITY OFFICER	The person at the security office who is responsible for responding to the emergency call and immediately activating the ERP.
SITE	Any place in the Project where the facilities will be reinstated, constructed and/or installed where SPCC JV can set HSE Standards and directly and enforce their application Site Boundaries.
Incident	An accidental event or chain of events that causes an emergency within the project context.
Medical Evacuation	Evacuation plan for medical emergencies.

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- Building Control Act BE 2522 - 1979/ Building Control Act No. 2 BE 2535 - 1992 and Associated Ministerial Regulations.
- Protective Measures for Operational Safety, Notification of Ministry of Industry No. 3 (BE 2542 - 1999) issued under the Factory Act.
- ARC (American Refugee Committee) Port Information and Marine Terminal Regulations NPC (National Petrochemical Corporation) Jetty Regulations.
- Notification of MSTe (Ministry of Science, Technology and Environment) Ref EPA.
- Standard for Determination of NOx, SOx and Particulate Emissions from Stationary Sources of Flue Gas dated 25/12/95.
- Energy Conservation Promotion Act BE 2535 (1992).

5.2. Codes and International Standards

- ISO 45001 - Occupational Health and Safety Management System
- ISO 14001 - Environmental Management System
- ISO 9001 - Quality Management System
- HSE documents issued by OSHA, the Occupational Safety and Health Administration (United States of America)
- Permitting required Documents
- National Fire Protection Association (NFPA) standards.

5.3. Project Reference Documentation

- 122018-SPCC-C-SH-PR-0037 HSE Manual for Commissioning
- 122018-SPCC-C-SH-PR-0001 Project SHE Plan
- 122018-SPCC-C-SH-PR-0002 SHE Procedures
- 122018-SPCC-C-SH-PR-0020 Project SHE Requirements for Subcontractors and Vendors
- 122018-SPCC-C-SH-PR-0005-Health Management Procedures and Planning
- 122018-SPCC-C-SH-PR-0014 Incident Notification and Investigation Procedure
- 122018-SPCC-C-SH-PR-0012 Medical Emergency Response Plan (MERP)
- 122018-SPCC-C-SH-PR-0025 Project Spill Contingency Plan
- 122018-SPCC-C-SH-PR-0040 Waste Management Plan for Commissioning


6. EMERGENCY CASES

Emergencies, based

on the nature of the triggering event, are classified in three main categories :

Operative: emergency due to carrying out of the site activities;

Natural: emergency due to event not related to the site activities and that cause and could cause harm to asset, health and safety of the personnel, environment or PTTLNG and CONTRACTOR reputation;

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4. ABBREVIATIONS

PTTLNG	PTTLNG	CM	Construction Manager
SPCC JV	SPCC-CTCI Joint Venture	COMM	Commissioning Manager
SET	Site Emergency Team	SO	Safety Officer
ERT	Emergency Response Team	PROJECT	NongFab LNG Receiving Terminal Project
ERTC	Emergency Response Team Coordinator	QHSE	Quality, Health, Safety, Environment
PHSEM	Project HSE Manager	ERP	Emergency Response Plan
HR	Human Resources	GS	General Service
HSE	Health, Safety, Environment	MEDEVAC	Medical Evacuation
SM	Site Manager	MERP	Medical Emergency Response Plan
IC	Incident Controller		

5. REFERENCE DOCUMENTS

5.1. Thailand National Laws

- National Environmental Quality Act BE 2535 (NEQA 1992)
- Ministerial Regulation on the Prescribing of Standard for Administration and Management of Occupational Safety, Health and Environment in relation to
- Hazardous Chemicals, B.E. 2556 (A.D. 2013), Fire Prevention and Control, B.E. 2555 (A.D. 2012), Machines.
- Ministerial Regulation on the prescribing of Standard for Administration and Management of Occupational Safety, Health and Environment B.E. 2552 (A.D. 2009)
- Safety, Occupational Hygiene and Workplace Environment Act B.E. 2554 (2011)
- Ministerial Order No. 123/2555 re: Appointment of OSH inspectors to under the OSH Act 2011.
- Notification of the Ministry of Labor concerning Specific Health Check-up for Employees Performing Works in relation to Chemical Risk Factors, B.E. 2552 (A.D. 2009)
- Ministerial Regulation on the Standard for Administration and Management of Safety, Occupational Health and Working Environment in Relation to Construction work year/ 2009
- Labor Announcement Regarding safety signs and safety symbol / year 2011
- Factory Act BE 2535 (1992)
- Public Health Act BE 2535 (1992)
- Hazardous Substances Act BE 2535 (1992)
- Oil Fuel Storage Act BE 2542 (1999)
- LPG Storage Act BE 2538-2450 (1995 - 1997)
- Fire Protection & Prevention Act BE 2542 (1999)

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Security: emergency due to event not related to the site and that cause and could cause harm to asset, health and safety of the personnel, environment or CONTRACTOR reputation.

an event that seriously threatens the immediate and future safety, health and security of people, the environmental, property integrity or business function. Examples (but not an exhaustive list) of potential emergency situations are listed below:

- Medical emergency at site
- Medical evacuation
- Heavy storm (with lightning possibility)
- Industrial disruptor/dispute
- Multiple injury (combine of any of these)
- Fatality
- Death of a person by natural causes
- Emergency at neighboring facilities to the affected project area.
- Fire (class A/B/C)
- Explosions (e.g. Compressed gas cylinder)
- Spillage of oil, chemicals, or black water
- LNG spillage/leakage and Gas clouds
- Crane or Vehicle incidents
- Radiations incident
- Incident involving live power lines
- Jetty impact such as ship collision
- Disaster of Nature such as Earthquake, High wave
- Disease Outbreaks (extremdly)
- Man Overboard from Jetty (extremely)

Emergency and Crisis Scenarios should be developed on the basis of equipment and probability by a team under the leadership of the Emergency Management Manager (EMM) according to the template given in the relevant annex. Depending on severity of the accident, as result of a site incident, Site evacuation could be foreseen.

LEVEL 1	LEVEL 2	LEVEL 3
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6.1. Emergency Levels

LEVEL 1 (Minor case): A minor emergency that can be effectively addressed locally using personnel and equipment available on site and/or to the Operating Company.

This includes, but is not limited to, the following:

- minor injuries to contractor or subcontractor personnel;
- damage to plant and/or equipment without significant harm to personnel, the environment, and/or public health;
- minor fire;
- manifestation
- small leak of dangerous chemicals
- Minor release of toxic or flammable gases
- Oil spill which can be dealt by local clean up resources

LEVEL 2 (Major case): An emergency that can be addressed locally with the support of personnel and equipment made available by authorities and public administrations at peripheral level.


This includes, but is not limited to, the following:

- fire with intervention of the fire-brigade;
- medical evacuation (MEDEVAC);
- local demonstration.

LEVEL 3 (Serious case): An emergency which cannot be addressed locally and impacts the Site's and/or the Operating Company's operations and/or neighbor Industrials and/or Local community, requiring assistance/support and command by the relevant Corporate functions and/or authorities and public administrations at central level.

This includes, but is not limited to, the following:

- serious social unrest that cause the repatriation;
- serious injuries to contractor or subcontractor personnel
- requiring MEDEVAC;
- contractor asset stoppage.
- A very serious event whose effects cause or may cause major impacts on the activities, health and safety of the employees and to the environment.
- A crisis/serious case is required the involvement of Crisis Management Team for the operational coordination of internal and external personnel and equipment available locally or provided by the relevant Corporate functions or by other group Companies.
- An event whose resolution can be extended over time.

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6.4. Medical Emergency Response Plan (MERP)

In the event of a serious accident, illness, or any other medical emergency during the PROJECT Operations, reference should be made to Medical Emergency Response Plan refer to the Medical Emergency Response Plan (122018-SPCC-C-SH-PR-0012).

6.5. Security Plan

In case of a Security Emergency, the Security Team will be alerted. Specific actions shall be contained in the Security Plan, refer to the Security Plan (122018-SPCC-C-SH-PR-0029).

- As per project requirements and reasons related HSSE and/or Construction and/or Commissioning, it can be necessary to open new gates or to change the status of the mentioned gate. For any changes related to the gates SPCC will inform PTTLNG/PMC, Under any case all gates will be provided with security checks and personnel.

6.6. Lightning Policy

When the flash/bang count is at 15 seconds, supervision will suspend all crane work and elevated work activities.

When the flash/bang count is at 9 second or less, all activities will be suspended and the site will be cleared. All employees will report to sheltered place at site (buildings, trailers etc.), where a head count will be done as per the evacuation protocols and the proper notification will be made.

All work will remain suspended until the decision to return to work is reached by the CONTRACTORS'S Construction manager together with the SUBCONTRACTORS representatives at site.

6.7. LNG spillage/leakage and Gas clouds

LNG is a cryogenic liquid and is stored and transported at approximately -260°F (-160°C) because cooling natural gas to this temperature turns it into a liquid and reduces its volume by a ration of 600:1 at which point its transport and storage is more economical. Contact with a cryogenic liquid can cause freeze burns and eye damage.

LNG is flammable in its vapor state between approximately 5 percent and 15 percent concentration of gas in air. LNG is less flammable than other fuels such as propane and gasoline and requires a higher ignition temperature (1004°F). If a flammable vapor-air mixture from an LNG spill is ignited, it may result in a flash fire, which is a short-duration fire that burns the vapors already mixed with air in flammable concentrations. The flame front will burn back through the vapor cloud to the spill site, provided the vapor concentration along this path is high enough to continue burning. An unconfined methane-air mixture will burn slowly, tending to ignite combustible materials within the vapor cloud, whereas a confined methane-air mixture will produce fast flame speeds that tend to produce flash burns rather than self-sustaining combustion.

As a liquid, LNG will neither burn nor explode. Methane, the primary component of LNG, is colorless, odorless, and tasteless, and is classified as a simple asphyxiant for human exposure. LNG vaporizes rapidly when exposed to ambient heat sources such as water, producing 620 to 630 standard cubic feet of natural gas for each cubic foot of liquid.


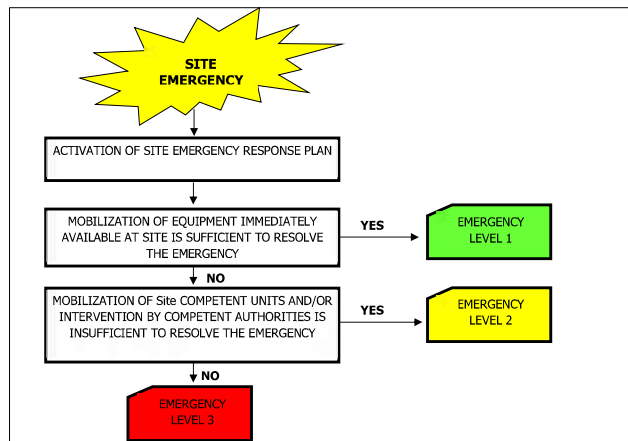
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Figure 1: Flow chart for Emergency level determination




6.2. Pre-fire planning

Pre-fire planning is an important part of preparing for fire and provides emergency services with information about the property so a more efficient and effective operation can be conducted, meaning less damage to property and a better chance of a successful rescue. This document captures building characteristics, occupancy, protective features and hazards.

6.3. Spill Contingency Plan

A specific "122018-SPCC-C-SH-PR-0025 Project Spill Contingency Plan" which address the emergency response in case of environmental contamination has been developed. It details the response to spills of hazardous substances associated with project activities.

The Spill Contingency Plan is aimed to organize the control, alert and intervention systems which shall be in function, so as to avoid and, in case, reduce any potential pollution, refer to the Project Spill Contingency Plan.

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When spilled onto water, LNG will initially produce a cold vapor cloud that is denser than air and will stay close to the water or ground. As this cloud mixes with air, it will warm up and cause dispersion into the atmosphere. If not ignited, the flammable vapor cloud could drift downwind until the effects of dispersion dilute the vapors below a flammable concentration. The downwind distance that flammable vapors might reach is a function of the volume of LNG spilled, the rate of the spill, and the prevailing weather conditions. Also, in order to disperse to significant downwind distances, a vapor cloud must avoid ignition. An event of sufficient magnitude to rupture an LNG cargo tank is likely to provide ignition sources. If a flammable cloud is ignited by the initiating event or by other ignition sources (e.g., on the ship, on other nearby vessels, or on shore), the flame will burn back to the vapor source, and the flammable cloud would not travel a significant distance over land.

Although LNG vapors can explode if ignited within a confined space, such as a building or structure, there is no evidence suggesting that LNG vapor is explosive when ignited in unconfined open areas.

LNG is less hazardous than liquefied petroleum gas (LPG) and liquefied ethylene, which have (1) higher specific gravities, (2) a greater tendency to form explosive vapor clouds, (3) lower minimum ignition energies (MIEs), and (4) higher fundamental burning velocities. LNG is not toxic, and it rapidly evaporates; therefore, long-term environmental impacts from a release are negligible if there is no ignition of natural gas vapors.

7. EMERGENCY RESPONSE ORGANIZATION, ROLES & RESPONSIBILITIES

7.1. General

Care for people lies at the heart of any emergency response; it does not include the immediate lifesaving activities, which are well provided for by the emergency services, but it does include meeting the essential needs of survivors when removed from danger.


The Emergency Response Plan will be implemented by means of the Contractor Emergency Response Team (ERT).

The purpose of the ERT is to take care of people before, during and after emergencies. The ERT has to be trained to response to all kind of credible emergencies and included in this procedure.

The ERT activities will ensure that:

The needs of people are the focus for both preparation and activity following an emergency;

- Care for people is reached effectively and timely;
- People's needs are met by those best able to fulfil them;
- People's essential personal needs are identified at all times;
- There is both a single point of access to all services and that services are delivered at the most suitable place;
- Care for people is integrated with other multi-disciplinary activities.

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7.2. Organisation

Incident response on site will be implemented by the Site Emergency Team (SET). The SET will comprise a group which will direct emergency response and which will implement on-the-ground emergency response activities. Site Emergency Team shall establish the Dress Code i.e. Reflective Jackets.

Emergency response team (ERT) will be arranged at site. Contractor SM will normally lead the team during emergency being the Emergency Management Manager (EMM), Emergency Response Team Coordinator (PHSEM) is appointed as deputy EMM if SM is not available and is responsible to keep the team updated and monitor for the application of this plan.

Site Emergency Team (SET) Table

Emergency Role	Fulfilled one of the following:	Managed by
Emergency Management Manager (EMM)	SM	CONTRACTOR
Incident Controller (IC)	G.S./CM/PRE-COMM/COMM	CONTRACTOR
Emergency Response Team Coordinator	PHSEM	CONTRACTOR
Emergency Response Team	Fire/Rescue/Medical Team	CONTRACTOR

The SET will gather in the designated Emergency Control Centre located in CONTRACTOR Site Office.

The Room will be clearly indicated and equipped with the following items:

- Copy of Emergency Response Plan;
- Spare Radio with charger;
- Hot line to the Emergency Control Centre;
- A dedicated line to guarantee 24 hours connection with the PTTLNG;
- Maps and plant lay-out;
- Emergency lighting.


A copy of the ERP will also be distributed to:

- PTTLNG, in order to facilitate the coordination between the different emergency team;
- All the above responding personnel (SET) and entities;
- SUBCONTRACTOR personnel which will be integral part of the SET, whenever required.

7.3. Responsibilities

The Site ERP will be implemented via the CONTRACTOR SET.

For the construction, pre-commissioning and commissioning activities, the SET will be composed by the following persons:

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The PHSEM is the Coordinator of the Emergency Response Team; he shall:

- Manage every emergency scenarios along with EMM;
- Coordinate, manage and promptly activate the ERT, providing information about the kind of emergency in order to obtain an adequate response by Team;
- Provide information and advice concerning the health and safety aspects of the response activities;
- Ensure that ERT is provided with all the equipment necessary to adequately response in case of every emergency;
- Ensure that ERT is composed only by competent and trained personnel;
- Ensure that all the employee involved in the activities are informed about the procedure to follow in case of emergency;
- Assign for each assembly point a dedicate safety officer;
- Ensure that this document will be revised, when necessary.

CONTRACTOR PHSEM shall appoint a competent person to carry out his duties and responsibilities in his absence.

7.3.3. Incident Controller (IC)

The Incident Controller, acting as logistics coordinator shall:

- Maintain continuous contact with EMM and ERT Coordinator during emergency;
- Arrange for the provision of additional equipment such as cranes, forklift, etc. to support activities of the ERT;
- Ensure the availability of emergency escape vehicles (buses) and ambulance in appropriate number and at all times, for emergency evacuation.

7.3.4. Safety Officer (SO)


The Safety Office shall:

- Immediately inform ERT Coordinator about the emergency, specifying location and type of incident;
- Make an initial assessment of the severity of the incident;
- Maintain contact with the EMM and ERT Coordinator warn of potential for escalation of incident;
- On agreement with the EMM and ERT Coordinator, activate the Area Escape Alarm, thus ensuring that personnel escape to a safe assembly point away from the affected area;
- In the event of person missing, immediately inform EMM or ERT Coordinator in order to activate the search and rescue procedure.

7.3.5. Emergency Response Team

Emergency Response Teams shall be composed by competent and trained personnel include the fire fighting and/or rescue certified and shall promptly respond when activated by EMM. This team shall be composed by :

- △
- Fire Fighting Team;
 - Rescue Team;
 - Medical Team.
 - Security Team
 - Support Team
 - CSR Team
 - Communication Team
 - Mechanical/Electrical Team

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Emergency Management Manager (EMM): CONTRACTOR Project Manager for Construction or his delegate;

Emergency Response Team Coordinator (ERT Coordinator): CONTRACTOR Field HSE Manager or his delegate;

Incident Controller (IC): CONTRACTOR Construction Manager, Pre-Commissioning or Commissioning Manager and General Service.

Emergency Response Team: Fire brigade, Rescue Team, Security team, CSR team, Communication team, Mechanical/Electrical team, Support team and Medical Team.

In case of any emergency, every worker shall report incident directly to the HSE Officer if available in the nearby or will call the emergency number 098 881 87 00 (by phone) or Channel 49 (by radio).

The caller (HSE officer or any worker) shall provide as clearly as possible:

- Nature of the incident;
- Location of the incident;
- Caller's name and contracting Company;
- Caller's location & sublocation.

Caller shall not hang up the phone until instructed to what to do. It's everyone responsibility to report as soon as possible the emergency and be available at site to collaborate with ERT.


7.3.1. Emergency Management Manager (EMM)

The Emergency Management Manager shall be responsible for the overall direction of the emergency response strategy. He/she shall:

- Manage every emergency scenarios along with ERT Coordinator;
- Maintain contact during emergency with ERT Coordinator in order to properly response in case of specific necessity;
- Establish the extent of the incident and the type of support required;
- Ensure proper line of communication with CONTRACTOR Management and PTTLNG representative (as per flowchart);
- Ensure that safe escape routes and assembly points are properly identified;
- Ensure that this document will be revised, when necessary.
- Lead the Emergency and Crisis Scenarios developing team

The CONTRACTOR SM is the Emergency Management Manager and he shall appoint a competent person to carry out his duties and responsibilities in his absence.

7.3.2. Emergency Response Team Coordinator (PHSEM)

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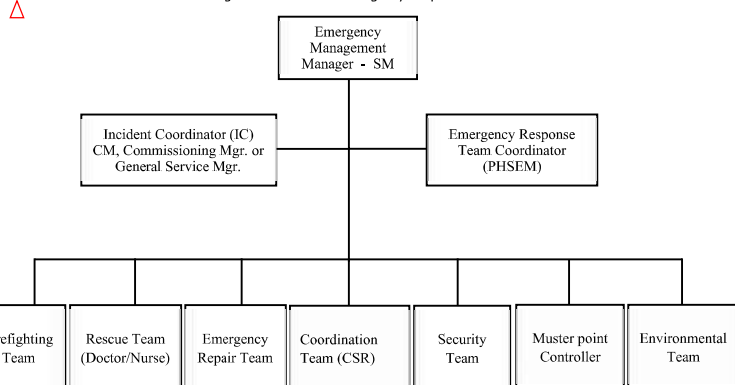
- Muster point controller
- Environmental Team
- Etc.

ERT will be composed by the following persons:

- SM
- PHSEM
- Contractor Construction Manager
- Contractor Commissioning Manager
- Nurses
- Client HSE representatives
- Subcontractor PM
- Subcontractor HSEM
- HSE Supervisor/officers
- First Aiders
- Fire Wardens

- ERT shall check that emergency equipment are always in good condition, properly maintained and available in case of necessity.
- ERT shall involve adequate number of employee (HSE supervisor/officer) that during emergency shall guide workforce to dedicated Assembly Point.
- ERT shall be available 24 hours per day, in order to properly response in case of emergency.
- The ratio of First Aider to workers shall be minimum 1:20
- Fire wardens shall be enough to quickly guarantee a suitable action in case of fire.
- List of names and contact numbers of ERT will be shared among the team and clearly posted on site communication boards.
- ERT will be constantly updated by PHSEM on revision of every emergency plan, result of drills and any main event potentially involving emergency actions.
- ERT will be activated and coordinated by EMM, all ERT members will actively participate and be available during any eventual emergency.

Organization Chart of Emergency Response Team

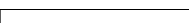


7.3.6. Employee/Worker

Each person who, once an emergency situation is detected, shall immediately inform the SO and/or supervisor of the area in order to start the emergency response process.

7.3.7. Visitors

Visitors shall be inducted on the Emergency Procedure in place and Emergency contact.

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8. MANAGEMENT OF EMERGENCY RESPONSE

8.1. General

Contractor shall provide and maintain an Emergency Response System to ensure that any emergencies that occur during construction are responded to in an expedient manner with the capability to preserve life property.

8.2. Dedicated Emergency

An "emergency response" may be initiated and declared by any person who becomes aware of an event that may have any or all of the following consequences:

- Has caused or threatens to cause fatalities or serious injury;
- Has caused or threatens to cause major damage or loss of asset;
- Poses the threat of injury / damage to third parties;
- Has caused or threatens to cause damage or seriously affect the environment;
- Sounded an electrical/hand siren.
- Call the hotline

Any Contractor employee or any other person on Site becoming aware of the need for a dedicated emergency shall "raise the alarm" and declare an emergency response.

8.3. Emergency Level 1

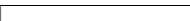
In the event of an emergency classified as Level 1, all of the following actions must be carried out by those responsible:

- The company units concerned, managerial and support, shall activate all actions aimed to manage the emergency effectively at local level with the resources on site;
- The PHSEM establishes all necessary communication channels with the SPCC JV HSE Crisis Unit;
- The Site Project Manager establishes all necessary communication, following the Company Standards, guidelines and Client regulations.

8.4. Emergency Level 2

In the event an emergency classified as Level 2, all of the following actions aimed at establishing the appropriate communication channels and emergency response procedures must be carried out by those responsible:

- The PHSEM establishes the necessary communication channels with the HSE Crisis Unit;
- The competent member of the Crisis Unit ensures all necessary operational assistance is provided and, if necessary, mobilizes emergency services (for example, organization of medical evacuations, environmental emergency response interventions, etc.);
- The competent member of the Crisis Unit keeps the SPCC JV HSE Crisis Unit Leader and Deputy informed of the event and the progress made;
- The SPCC JV HSE Crisis Unit Leader and Deputy assess, according to their respective competence, whether any further resources (human, economic or technical, with the involvement of other company units) should be provided to the SM affected by the emergency, in order to ensure an effective response to the emergency;

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7.3.8. Interface with Client

Contractor issued Emergency and Crisis Management Plan and Client follows this plan in order to identify, study, forecast crisis issues, and implement specific actions and elements to respond or control any such crisis. Client is responsible to ensure availability at site of medical equipment and ambulances fully working and ready to be used in case of emergency.

In case of an emergency which cannot be effectively managed by JV at local level (Emergency Level 2 and Level 3), JV EMM shall inform Client Crisis manager in order to activate JV emergency procedures and to coordinate the different structures.

Otherwise in case of an Emergency Level 1, Client shall be informed about the emergency, the follow-up of corrective actions and the investigation.

The presence of monitoring devices is particularly important in close to the existing sump considering the possible discharge of hazardous gases. Client will ensure permanent gas detectors provided.

In case of an emergency from Client, it is Client representatives responsibility to communicate immediately (Radio / Telephone etc.) to Site PM and PHSEM the event.

This scenario will be considered as a major emergency scenario and will be managed as hereafter described.

All site project personnel will stop all kind of activities and will meet in muster point, waiting for communication of next action.

7.3.9. Interface with Subcontractors

Each Subcontractor shall prepare for its own working area an Emergency Response Plan for minor emergency of level 1 and is responsible for its application and implementation.


Each Subcontractor shall explain the content of its own ERP to all personnel at site before starting any new working activity, as well as ensure that a copy of its own ERP is made available at each working site (including offices).

The PHSEM is responsible to verify the compliance of Subcontractors' ERP with the present document.

The SM and PHSEM are responsible for ensuring efficient communication with the key staff of Subcontractors.

ERP Drills shall be conducted also with Subcontractors participation in order to verify the communication systems and to avoid possible interferences.

It is responsibility of all Subcontractors to be fully conversant with the present ERP and to ensure that this document is circulated through their own emergency organization and Line Management.

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- The SM affected by the emergency provides (either directly or through the SPCC JV HSE Crisis Unit) the necessary information to the Owner Representative, which, in collaboration with the Public Relations Units of Client., handles media relations.

8.5. Emergency Level 3

In the event of an emergency classified as Level 3, all of the following must be carried out by those responsible:

- The PHSEM coordinate with the relevant Corporate functions and/or authorities and public administrations of the Province to assist/supported and commanded
- The PHSEM establishes the necessary communication channels with the Corporate SPCC HSE Crisis Unit;
- The competent member of the Crisis Unit ensures all necessary operational assistance is provided and, if necessary, mobilizes emergency services (for example, organization of medical evacuations, environmental emergency response interventions, etc.);
- The competent member of the Crisis Unit keeps the SPCC JV HSE Crisis Unit Leader and Deputy informed of the event and its developments;
- The SPCC JV HSE Crisis Unit Leader and Deputy assess, according to their respective competence, whether any further resources (human, economic or technical, with the involvement of other company units) should be provided to the SM affected by the emergency, in order to ensure an effective response to the emergency;
- The SPCC JV HSE Crisis Unit Leader and Deputy contact the Client Crisis Unit to arrange the appropriate assistance required.


8.6. Alarm System

When an emergency has to be declared, the following shall be used for raising the alarm using the PA/ GA alarm system and /or manual siren and/or two-way radio (explosion-proof type (Ex)):

- Person raising the alarm to clearly state the words "EMERGENCY – EMERGENCY – EMERGENCY";
- Security Officer will acknowledge the receipt of the alarm call;
 - Person raising the alarm will clearly state:
 - The name and the precise location of the emergency response incident;
 - The nature of the emergency event (fire, vehicle accident, fall, person trapped in, etc.);
 - The number of persons injured;
 - Severity of injuries (if obvious, e.g. broken leg, spinal injury, head injury, etc.);
 - The need for any special rescue or recovery equipment;
 - Prevailing weather conditions or any other pertinent information.

People in charge of Emergency Response and/or specific reference number are defined in the specific sections, enclosed into the document. In general the ERP face the following scenarios:

- Medical Emergency
- Fire Emergency;
- Environmental emergency

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The ERTC shall repeat and confirm the nature of the information for clarification.

Person raising the alarm to clarify or correct the information and then to stand-by on the radio for further instructions from the ERTC, unless required to render immediate assistance to injured persons.

ERTC shall then follow the emergency response activation and callout process.

In case of emergency the workers shall receive instruction from the PHSEM, by means of their Safety Officer and/or Supervisors, if the alarm is relevant to their location.

▲ Upon hearing the Emergency Evacuation Alarm Activating, all personnel shall proceed in an orderly manner to the nearest safe Contractor muster point and await further instructions.

8.7. Emergency Instructions

In case of Emergency siren all personnel shall immediately move to designated Emergency muster point.

ERTC broadcasts over, phone, radio network and amplification system that there is:

- State of emergency declared;
- Emergency Number or channel
- Site Emergency Response Alarm activated;
- Radio silence to be implemented and maintained except for emergency radio traffic: messages to be brief and to the point;
- ERT personnel are to ensure that messages are understood by the receiver and acted upon;
- ERTC ensure the arrival of ambulance with doctor and nurse to the scene of incident;
- Site Emergency Response Team members consult their checklist and carry out duties as assigned;
- Office Administration staff are briefed on the incident and shall assist where and when instructed to do so.


8.8. Fire, Explosive LNG spillage/leakage and Gas clouds Accident

A person becoming aware of a fire emergency situation shall:

- It has to directly call the Emergency Hotline Number
- If trained extinguishing the fire only use nearby fire extinguisher if the fire is small enough; do not fight the fire if this is spreading rapidly and initiate a fire alert by reporting the emergency to the designated Safety Officer;
- Then follow the procedure reported in this document for this case.
- The number of Firefighting Team and Standby Fire Suite shall be identify on the Pre-Fire Plan for commissioning.

In case of fire; the worker shall report incident directly to the Safety Officer that shall report directly to the ERT by radio and/or verbal and provide as clearly as possible:

- Nature of the incident;
- Location of the incident;
- Caller's name and contracting Company;
- Caller's location & sublocation.

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- Prevent any person or vehicle not authorised from entering in the incident area.

Only authorised Emergency Service, HSE Staff and Project Staff will be allowed into the site incident area.

8.10.2.Site Access & Egress

In the event of a Site closure resulting from an emergency event, vehicles remaining on Site shall be parked and secured in such a manner to avoid obstruction to any emergency response action or personnel. Keys should be left in the ignition in case ERT has to remove them

- The access/egress shall provide the security guard control and the Emergency Evacuation exit route in the commissioning area shall designate to be safe places up to the emergency situation and wind direction.

8.11. Communication

Any worker at the Project can activate the emergency procedure. In case of emergency, the persons shall receive instructions from SET to proceed to the assembly points.

This will be done by radio (or walky-talky) or by alarm system. Alarm system has to be defined; for siren system shall be defined the siren tone (e.g. continuous sound for fire emergency, intermittent sound for medical emergency, etc.).

Upon receiving the instructions, all personnel shall proceed in an orderly manner to the nearest Assembly Point and await further instructions.


- The kind of siren tone shall estimate and communicate to the concerned person by the training program and Project ID badge.

Declaring as follow:

- Who is calling
- Exact location of the accident;
- Nature of the accident;
- Number of persons involved;
- Short description of their condition;
- If there may be need for special medical equipment;
- Other relevant information.
- Do not hang up until instructed to do so. You may be required to assist or guide
- CONFIRM MESSAGE IS UNDERSTOOD;

Communication flow as follow:

- In the event of a medical emergency occurring at Project, the person identifying the situation shall immediately activate the medical emergency procedure by identified communication lines or by sending someone for help.
- The Hotline Officer shall answer the call and you shall be required to provide information to him.
- After ensuring that all details have been accurately recorded, the Hotline Officer shall immediately, notify relevant response parties.

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Personnel Instruction:

At the activation of a local fire alarm, the personnel shall:

- Stop all work at once;
- Shut down and make safe all equipment;
- Vacate the work place, proceed in an orderly way to the nearest muster point and wait for instructions;
- At the muster point a roll call is taken by foreman and all the personnel are accounted for, awaiting further instructions;
- Do not return to work until a notification has been received from ERT by means the Safety Officer.

8.9. Environmental Emergency

Contractor establishes, implements and maintains the procedures to identify potential emergency situations and potential accidents that can have impacts on the environment and how it will respond to them.

In this way Contractor shall respond to actual emergency situations and accidents and prevent or mitigate associated adverse environmental impacts.

The possible scenarios identified as Environmental Emergency are:

- Spill or Sewage System failure;
- Waste Accumulation.

Spills definition and classification, identification of potentially polluting substances pollution scenarios, emergency response actions and spill prevention strategies are described into the Project Document "122018-SPCC-C-SH-PR-0025 Project Spill Contingency Plan"

Waste segregation and disposal strategy in order to reduce any possible environmental emergency are presented in the Project Document "122018-SPCC-C-SH-PR-0040 Waste Management Plan for Commissioning".

Please refer to the above document for any detailed information.

The number of Chemical & Spill Kits including ERT shall comply with the minimum Project requirement.

8.10. Other General Emergency


In case of other kind of emergency (i.e. road accident):

- Communicate the emergency calling the Safety Officer;
- Do not block or obstruct the emergency operations;
- Do not disturb the accident scene;
- Wait until the PHSEM or Construction Manager arrives on site if safe to do so.

8.10.1.Security Personnel

During any emergency situation, security personnel shall be immediately informed and will:

- Guard the gate (for avoid any entry from unauthorised outsiders and to promptly open in case of evacuation);
- Ensure that the roads are clear for emergency vehicles;

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- The Hotline Officer shall record all the details on the emergency response log to provide accurate details of the emergency and any injuries to the nurse/medical centre.
- The Security Officer shall immediately contact with Project HSE Manager.
- The Area manager and ERT members shall proceed to the emergency scene and provide assistance as required.
- The person, who has reported the incident, if competent, should assist where possible to manage the emergency situation until assistance arrives.
- Until the normal response team are operating the initial response will generally be coordinated by trained field personnel.

8.12. Actuation

An emergency situation occurring inside the project area shall be managed according to this Emergency Response plan.

Typically the following tasks/roles shall be put in place in the event of a declared emergency response:

- State of emergency declared;
- Contact people in charge of Emergency Response (Emergency Number or channel, ERT or its foreman/Supervisor)
- Radio silence put in place on project radio channels;
- Ambulance, Doctor and Nurse dispatched to the scene of incident;
- In case of fire, fire extinguishers are provided along the Site during the working shift by subcontractors;
- First Aid / medical centre manned if required;
- Emergency Response Team reports to emergency response control room and consults his checklist;
- Client Site Representatives are briefed on the incident and shall assist where and when instructed to do so by ERTC;
- Emergency Evacuation Plan, which shall include a list of all personnel on Site;


9. MEDICAL EMERGENCY RESPONSE PLAN (MERP)

9.1. Risk Management

Risk Management is a critical component of the Medical Emergency Response Plan. It is mandatory that all personnel who respond in a emergency situation ensure that the hazards are identified and that associated risk are controlled to an acceptable level.

In a situation where the risk associated with the planned response is unacceptable then all personnel shall be immediately withdrawn to a safe place. The person in charge shall then develop a suitable plan before the response is reactivated. This plan shall be documented on a risk assessment form.

Risk assessment strategies and processes shall be implemented to ensure the safety of all personnel. These processes include:

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- The recovery / rescue of people
- The securing of an incident scene
- The normalization of an incident area
- The ongoing security of an incident scene
- All re-enactments of an incident

The identification of hazards and the management and control of the risk associated with these hazards will be in accordance with the current policies, procedure and health and safety requirements detailed in the Project HSE Plans.

The Project MERP shall be tested by scheduling a minimum of one exercises per month. These can consist of a desktop system analysis as well as comprehensive emergency exercise.

To ensure the reliability of emergency response equipment it shall be inspected on a regular basis.

For the Ambulance inspection shall be daily.

The respective owners are responsible for keeping equipment in operational condition. (All emergency response equipment should be considered critical)

9.2. Medevac Exercise

A medical emergency is a situation in which, due to illness or an accident, there is the danger of losing a limb, an organ or life. In order to face possible emergencies, an evacuation plan is prepared for each WORKSITE / vessel involved in the project. A MEDEVAC has priority over normal operations.

The plan is prepared in collaboration with the Client and considers specific needs for the working activity that will be performed and the general situation of the country in which working activities are carried out.


In any case, medical emergencies require timely clinical and surgical intervention capabilities, such as:

- Immediate intervention;
- Operational unit, adequately trained people to perform first aid interventions.
- First-aid team members are easily identified, by means of a badge or other particular identification sign. Their names and, if possible, their photographs are posted on the main notice board of the workshop, WORKSITE or the vessel concerned.

In case an Offshore MEDEVAC is necessary for SUBCONTRACTOR, relevant SUBCONTRACTOR responsible onboard shall liaise with his employer ensuring a prompt response onshore according with SUBCONTRACTOR emergency response plan. All SUBCONTRACTORS emergency contacts list shall be available onboard.

The resources to make available will be Medical team in the different WORKSITES, the roads are related to the location and the condition of the traffic at the time of the emergency case.

Normally the Injured Person is to be taken to the WORKSITE first aid/clinic, to one of the Hospitals to be defined by the Health Coordinator/Doctor who treats the Injured Person in accordance with the Injured Person and the Injured Person organization.

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- Individual members of ERT will be trained and competencies assessed for their roles and responsibilities;
- Training plans will be developed for the individual roles based on an analysis of the skill and competencies for the roles and responsibilities of ERT personnel;
- Record of emergency response training will be main tended on file;
- Teams will be retrained on a needs basis and after any revision or changes to the present ERP.

The specific trainings foreseen for the ERT are:

- Fire fighting
- First Aid
- Rescue at Height
- Rescue in confined Space
- HAZMAT (HAZardous MATERIAL)
- Other specific trainings (if necessary according to activity and risk assessment)

In addition to the abovementioned specific training, each operator and other key personnel (such Security officer) shall receive a dedicated training on the content of this Plan.

Subcontractors HSE Manager shall ensure training sessions for their personnel to familiarize them with the Emergency Response Plan. This training session shall be documented and the minute of meeting will be sent to the PHSEM.

12. EMERGENCY PREPAREDNESS

12.1. Emergency Facilities

Fire Fighting Facilities

Gas Plant is equipped with firefighting system to manage fire emergency situations. For details regarding system configuration refer to technical documentation (Ref. from [5] to [12]).

First Aid Facilities


Project clinics for providing first aid services to all personnel will be provided with all the medical equipment necessary; adequate number of nurses and ambulances with driver and a qualified nurse will be provided and will be available 24 hours per day.

- First Aid Facilities and the number of the Emergency equipment shall comply with the minimum Project requirement.

The First Aid Kits shall be reviewed periodically by the subcontractor medical staff in accordance with the number of employees and the relevant medical needs. After using the First Aid Kit, the medical staff shall ensure that First Aid Kit is re-furnished and available.

Urgent cases will be evacuated to the Hospital.

Confined space and work at height rescue

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In each medical emergency, it is necessary to utilize the most suitable means of transport available.

After the first aid by site Nurse / Doctor or competent person, the patient should be transported to the onsite first aid/clinic for further assessment and stabilization by ambulance or other appropriate means of transport to the nearest local specialized hospital.

If repatriation is needed for CONTRACTOR's employee, the Country Health Coordinator in collaboration with Hospital's Doctors and Business Unit Offshore Health Manager will evaluate the means of repatriation case by case.

In order to evaluate the level of readiness/preparedness of the operating unit in the event of medical emergency, and to identify any weak links in the medical evacuation chain, specific drills shall be carried out periodically according to the MERP.

10. NOTIFICATION AND REPORTING

At the end of an emergency, Emergency Management Manager, supported by the PHSEM, shall prepare a detailed report to Site Project Manager and to be forward to Client Project Representative (than the report can be sent to local authority if needed).

The report shall include, at least:

- Location and time of emergency;
- Person involved;
- Equipment involved;
- Neighbouring plants involved;
- Root Cause's;
- Actions undertaken during the emergency;
- Actions undertaken after the emergency.

The forms to be used to carry out the investigation after an emergency and to ensure that proper follow-up is performed is the "122018-SPCC-C-SH-PR-0014 Incident Notification and Investigation Procedure", which is also reported in Attachment 2,3,4.

11. TRAINING

Mandatory training sessions shall include at least:


- Contractor Orientation and Induction (for new personnel, at arrival on site);
- Regular meetings to explain and understand the emergency procedures (for all personnel, periodically during construction activities).

Training sessions for Contractor personnel will be documented by the PHSEM. The PHSEM shall train the ERT members.

ERT members and crews will be formed and trained in accordance with the following list:

Training for each ERT member in handling anticipated emergencies that could reasonably be expected to occur;

- Training for all Site personnel in the Contractor's and Subcontractors' ERP;
- Training for all Site personnel in the Contractor's and Subcontractors' evacuation procedures;

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A dedicated mobile equipment equipped with confined space rescue facilities (tripods, SCBA, etc.) and work at height rescue facilities (harnesses, ropes, pulleys, etc.) must be constantly available at side by subcontractor.

Oil Spill Facilities

Spill Kit oil and chemical spill emergency must be available at site.

- The number of Chemical & Spill Kits including ERT shall comply with the minimum Project requirement.

Wind Socks


Enough number of wind socks are located in different location of the project in order to guarantee visibility from all location. In case of gas release, all personnel must go toward the nearest Emergency Assembly Muster Point moving perpendicularly wind direction. Only in case leak location is clearly known, evacuation in opposite wind direction is allowed.

- Wind sock installation shall be marked on the plot plan layout put on the Pre-Fire Plan for commissioning.

12.2. Emergency Rooms

To proper manage and organize emergency responses 2 different Emergency Control Room (ECR) shall be provided located:

ECR No.	Located in	Main Function	Equipped with
1	Control Room	Coordinate FERT during any emergency	1. Local radios (explosion-proof type (Ex)) 2. Dedicated line to the CMR 3. Clocks 4. Emergency log sheet book for writing down events 5. Suitable PPE, SCBA sets, Emergency equipment, escape masks (Ref. from [5] to [12]). 6. Emergency contact list (refer to APPENDIX 1 - Emergency Contact Numbers) 7. Station Bill (Instruction and ERT composition) 8. PAGA system
2	Project Operations Building	• Meeting room for Management Level of ERT • Coordinate response for major emergency (level 2 and 3) establishing a direct communication line with ECR No. 1 and with external authorities.	1. International and local communications (Satellite Phone, Internet) 2. Radios, fax machine, VHF radio 3. PC and printer (connected to Site Access Control System) 4. Status board for writing down events 5. Clock 6. Plans and maps of the Site 7. Office supplies (pens, pencils, paper etc.) 8. Map of country and region 9. Telephone directory 10. Email 11. Documentation, including ERP 12. Visio-conference


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ตำรวจน้ำ Marine Police		038-437-056		

HOSPITAL CONTACT INFORMATION

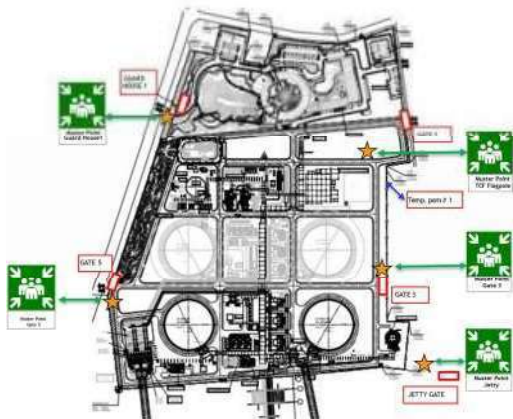
NAME	ADDRESS	PHONE NUMBER
Memorial Hospita Sirindhor <i>(Primary evacuation hospital for life threatening cases)</i>	111 Sukhumvit Rd, Huai Pong , Muang Rayong District, Chang Wat Rayong 21150, Thailand	+66(0)38 684 444 / +66(0)819226248 / 1669 (Local call) https://www.hrh.go.th
Bangkok Hospital in Rayong <i>(Primary Evacuation Hospital)</i>	8 Moo 2Sangianneramit Road, T.Noen-Phra, A.Muang, Rayong 21000, Thailand	+66 (0)38 921 999 / +66 (0) 33 108 999 / +66(0)38 921 821 / 1719 (Local call) http://www.bangkokrayong.com/en/home
Mongkut Rayong Hospital <i>(Primary Evacuation)</i>	149/1 Ma Ya Road, Amphoe Muang Rayong Chan Wat Rayong 21000 Thailand	+66(0)38 6918 000 / +66(0)38 6821 36-9 / +66(0)86 3684505 http://www.mongkutrayong.com
Bangkok Hospital <i>(Secondary Evacuation Hospital)</i>	2 Soi Soonvijai 7, New Petchburi Road, Bangkok 10310, Thailand	Hospital Hotline Call: +662 310-3000, or 1719 (Local call) https://www.bangkokhospital.com/index.php/en
Bumrungrad International Hospital in Bangkok <i>(Secondary Evacuation Hospital)</i>	33 Soi Sukhumvit 3, Khwaeng Khlong Toei Nuca, Khet Watthana, Krung Thep Maha Nakhon 10110, Thailand	+66 (0) 2011 2222 / +66 (0) 2011 5222 https://www.bumrungrad.com
Thainakarin Hospital in Bangkok <i>(Secondary Evacuation Hospital)</i>	345 Bang Na-Trat Road, Khwaeng Bang Na, Khet Bang Na, Krung Thep Maha Nakhon 10260, Thailand	+66 (0) 2361 2727 / +66 (0) 2361 2828 https://www.thainakarin.co.th
Banchang Hospital <i>(Secondary Evacuation Hospital)</i>	77 Moo 1, Sukhumvit Rd, Plala Banchang District , Rayong 21130	+66(0)38 603 838 http://www.banchanghospital.net


PUBLIC EMERGENCY CONTACT NUMBERS

NAME	PHONE NUMBER
Ambulance and Rescue	1544
Fire	199
Police	191
Medical Emergency	1669
Tourist Police	1155

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APPENDIX 2 – ASSEMBLY POINTS FOR EVACUATION AT PROJECT



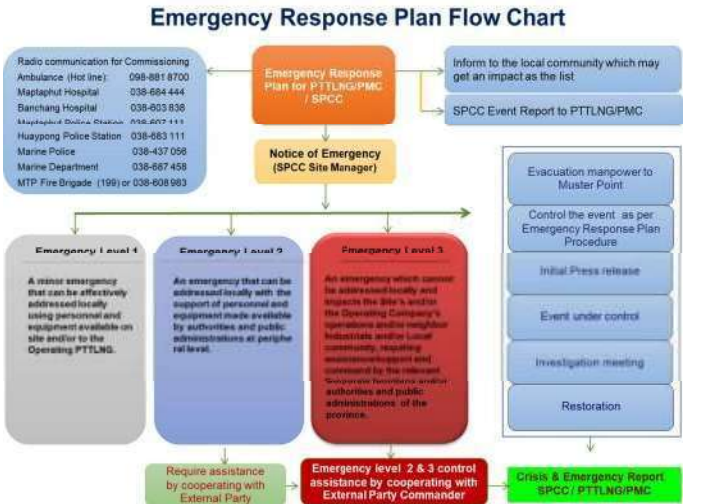
		EMERGENCY PREPAREDNESS AND RESPONSE PLAN FOR COMMISSIONING	PTTLNG Doc. No.: 122018-SPCC-C- SH-PR-0039	
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LOCAL COMMUNITIES CONTACT NUMBERS

ชุมชนในรัศมี 5 กิโลเมตร จำนวน 8 ชุมชน (8 Community in 5 k.m. from Construction Area)			
ลำดับที่	ชื่อ-สกุล (Name)	ชื่อชุมชน (Community Name)	หมายเลขโทรศัพท์ (Tel.)
1			
2			
3			
4			
5			
6			
7			
8			
กลุ่มประมงเรือเล็ก(Fisherman Community total 10 group)			
ลำดับที่	ชื่อ-สกุล (Name)	ชื่อชุมชน (Community Name)	หมายเลขโทรศัพท์ (Tel. No.)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

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APPENDIX 3 – EMERGENCY MANAGEMENT FLOW CHART



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APPENDIX 4

Drill Date/ วันที่ซ้อมแผน		Time - Drill Start/ เวลาเริ่ม	
Location/ สถานที่		Time - Drill End/ เวลาสิ้นสุด	
Emergency Level and Type of Drill/ ระดับของเหตุการณ์และประเภทของการซ้อมแผน		<input type="checkbox"/> Planned <input type="checkbox"/> Unplanned	


The Scenario	
<div></div>	
Equipment Utilized/อุปกรณ์ที่ใช้ 1. 2. 3. 4. 5.	

Timetable :/ ช่วงเวลา	
Time	Action/ การปฏิบัติ


Assessment of Emergency Exercise Drill	
Positive / ข้อดี	Improvement / ข้อควรปรับปรุงแก้ไข
1. 2. 3. 4. 5.	1. 2. 3. 4. 5.

PHOTO OF DRILL

Report Prepared By	PHSEM
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APPENDIX 5 – EMERGENCY CRISIS AND SCENARIOS

		EMERGENCY & CRISIS SCENARIOS			
Working Condition Pre-Commissioning and Commissioning		Scenario number	Scenario title		
Foreseen Emergency level		Level 1	Level 2	Level 3	Crisis
Causes		Collision (e.g. with helicopters, other vessels)	Human error		
		Structural failure	Piracy/Sabotage		
		Loss of position	Country risks / Political or Social riots		
		Failure due to a wrong weight disposition	IT system failure		
		Extreme and catastrophic weather (e.g. Tsunami, typhoons)	Lack of compliance with local laws & regulations and Standards		
		Lack of propulsion	Others Specify: ...		
Potential Impacts		Operational and Business Continuity of the Supply Chain	Intangible Asset damage (e.g. reputation, relations with stakeholders)		
		Tangible Asset damage (with consequent economic/financial loss)	Block of the operations (Economic Loss consequently)		
		Security	Environmental Damage / Pollution		
		Personnel Health & Safety	Others Specify: ...		
Emergency Response Responsibility/Leadership	TO FILL for the specific case ... All the terms are agreed by the parts (eg, by means of Contract, Bridging Documents) Medevac procedure (Medevac = Medical Evacuation) is normally managed by the Client. When ... the Responsibility is normally up to Saipem.				
Response actions	Entities involved				
	Coast Guards		Hospitals		
	Police		Local Authorities (eg Ministry, Environmental Agency and Marine department)		
	Fire Fighters		Others Specify:		
	Internal Communication				
	Refer to Communication Flow Diagram...				
	Emergency Preparedness				
	Emergency Response Plan		Crisis Team onboard		
	Satellite device (GPS)		Vessels mapped and tracked by the Flag		
	SOPEP (Shipboard Oil Pollution Emergency Plans)		Operational control and preventive measures in place		
	Vessel maps promptly available		Voyage Plan		
	Weather Forecast service		Others Specify: ...		
Occurred events	TO FILL for the specific case ...				