

ภาคผนวก ข.19

การติดตั้ง Check Valve ที่ปลายท่อขนถ่าย

ภาคผนวก ข.20

การแต่งตั้งคณะกรรมการความปลอดภัย อาชีวอนามัย
และสภาพแวดล้อมในการทำงาน



STAR PETROLEUM REFINING PUBLIC COMPANY LIMITED
บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)

เลขทะเบียนนิติบุคคล 0107556000155

ประกาศ

วันที่ 31 มีนาคม 2566

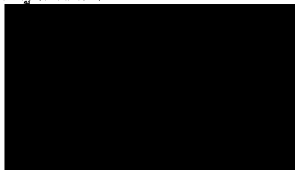
จาก : ประธานเจ้าหน้าที่บริหาร

ถึง : พนักงานทุกท่าน

เรื่อง : การแต่งตั้งคณะกรรมการความปลอดภัย อาชีวอนามัยและสภาพแวดล้อมในการทำงาน (ฉบับปรับปรุงครั้งที่ 1)

เพื่อให้การดำเนินงานด้านความปลอดภัย อาชีวอนามัยและสิ่งแวดล้อมเป็นไปอย่างมีประสิทธิภาพและต่อเนื่อง จึงได้มีการปรับปรุงรายชื่อสมาชิกคณะกรรมการความปลอดภัย อาชีวอนามัยและสภาพแวดล้อมในการทำงานในส่วนของผู้แทนนายจ้าง (ประธาน) ซึ่งสอดคล้องกับการเปลี่ยนแปลงผังองค์กรของบริษัทฯ ดังนั้น จึงขอประกาศแต่งตั้งคณะกรรมการความปลอดภัย (ฉบับปรับปรุงครั้งที่ 1) ซึ่งประกอบด้วยกรรมการที่มาจากแต่งตั้ง (ผู้แทนนายจ้าง) และกรรมการที่มาจากการเลือกตั้ง (ผู้แทนลูกจ้าง) ดังรายชื่อต่อไปนี้

กรรมการผู้แทนนายจ้าง



GR ประธานกรรมการ
GE
PN
PD
AS
AS/6

กรรมการผู้แทนลูกจ้าง



PN/53
PN/34
PD/31
AS/243
HR/12
TE/26

กรรมการและเลขานุการ



QS/41



STAR PETROLEUM REFINING PUBLIC COMPANY LIMITED
บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)

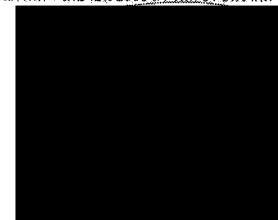
เลขทะเบียนนิติบุคคล 0107556000155

โดยให้คณะกรรมการความปลอดภัย อาชีวอนามัยและสภาพแวดล้อมในการทำงานมีหน้าที่ดังต่อไปนี้

1. จัดทำนโยบายด้านความปลอดภัยอาชีวอนามัยและสภาพแวดล้อมในการทำงานของสถานประกอบกิจการเสนอต่อนายจ้าง
2. จัดทำแนวทางการป้องกันและลดการเกิดอุบัติเหตุ การประสบอันตราย การเจ็บป่วยหรือการ เกิดเหตุเดือดร้อนรำคาญอันเนื่องมาจากการทำงานของลูกจ้างหรือความไม่ปลอดภัยในการ ทำงานเสนอต่อนายจ้าง
3. รายงานและเสนอแนะมาตรการหรือแนวทางปรับปรุงแก้ไขสภาพการทำงานและสภาพแวดล้อมในการทำงานให้เป็นไปตามกฎหมายเกี่ยวกับความปลอดภัยในการทำงานต่อนายจ้างเพื่อความปลอดภัยในการทำงานของลูกจ้าง ผู้รับเหมาและบุคคลภายนอกที่เข้ามาปฏิบัติงานหรือเข้ามาใช้บริการในสถานประกอบกิจการ
4. ส่งเสริมและสนับสนุนกิจกรรมด้านความปลอดภัยในการทำงานของสถานประกอบกิจการ
5. พิจารณาคู่มือว่าด้วยความปลอดภัยอาชีวอนามัยและสภาพแวดล้อมในการทำงานของสถานประกอบกิจการเพื่อเสนอความเห็นต่อนายจ้าง
6. สืบรวจการปฏิบัติการด้านความปลอดภัยในการทำงานและรายงานผลการสำรวจดังกล่าว รวมทั้งสถิติการประสบอันตรายที่เกิดขึ้นในสถานประกอบกิจการนั้น ในการประชุมคณะกรรมการความปลอดภัยทุกครั้ง
7. พิจารณาโครงการหรือแผนการฝึกอบรมเกี่ยวกับความปลอดภัยในการทำงาน รวมถึงโครงการหรือแผนการอบรมเกี่ยวกับบทบาทหน้าที่ความรับผิดชอบในด้านความปลอดภัยของลูกจ้าง หัวหน้างาน ผู้บริหาร นายจ้างและบุคลากรทุกระดับเพื่อเสนอความเห็นต่อนายจ้าง
8. จัดวางระบบให้ลูกจ้างทุกคนทุกระดับมีหน้าที่ต้องรายงานสภาพการทำงานที่ไม่ปลอดภัยต่อนายจ้าง
9. ติดตามผลความคืบหน้าเรื่องที่เสนอต่อนายจ้าง
10. รายงานผลการปฏิบัติงานประจำปี รวมทั้งระบุปัญหา อุปสรรคและข้อเสนอแนะในการปฏิบัติงานที่ของคณะกรรมการความปลอดภัยเมื่อปฏิบัติงานที่ครบหนึ่งปีเสนอต่อนายจ้าง
11. ประเมินผลการดำเนินงานด้านความปลอดภัยในการทำงานของสถานประกอบกิจการ
12. ปฏิบัติงานด้านความปลอดภัยในการทำงานอื่นตามที่นายจ้างมอบหมาย

คณะกรรมการดังกล่าว มีวาระการทำงานตั้งแต่วันที่ 1 เมษายน 2566 ถึงวันที่ 31 ธันวาคม 2567

จึงประกาศมาเพื่อทราบโดยทั่วกัน





STAR PETROLEUM REFINING PUBLIC COMPANY LIMITED
บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)

เลขทะเบียนนิติบุคคล 0107555000155

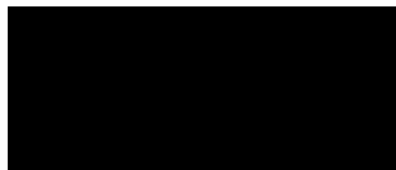
Announcement

Mar 31st, 2023

From : Chief Executive Officer
To : All SPRC Employees
Subject : Appointment SPRC EHS Main Committee (Rev.1)

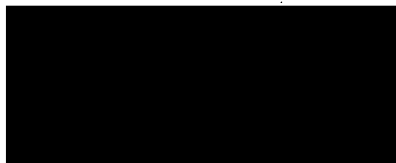
In order to effective and continual implement of SPRC EHS Management, the EHS Main Committee has been revised by changing employer representative (Chairman) which aligning with the updating SPRC Organization. So, the company would like to announce the updating SPRC EHS Main Committee revision one which consists of the Person from Appointment (Employer Representative) and Election (Employee Representative) as following:

Employer Representative Members:



GR (Chairman)
GE
PN
PD
AS
AS/6

Employee Representative Members:



PN/53
PN/34
PD/31
AS/243
HR/12
TE/26

Member and secretary



QS/41



STAR PETROLEUM REFINING PUBLIC COMPANY LIMITED
บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)

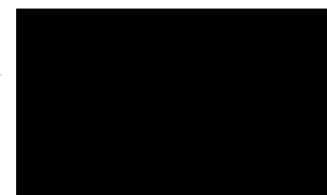
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Responsibilities of the EHS Main Committee

1. Develop EHS related policies, action plan and activities for both work and non-work related safety to prevent accidents, illness, nuisance or unsafe conditions proposing to the employer.
2. Develop EHS measures, guideline to prevent incidents from the employee's work and make suggestion for the employer.
3. Recommend any corrective or improvement measures to comply with the law and standard for the safety of employee, contractor and visitor.
4. Promote and support EHS programs and related activities.
5. Consider EHS rules, regulations, safety manual and safety standard proposing to the employer.
6. Conduct EHS walkthrough survey and review injury statistic once a month.
7. Consider EHS training program or plan and responsibility training program or plan about responsibility of supervisor, manager, employer and staff at all level proposing idea to the employer.
8. Set the unsafe condition and near miss report system which are the responsibility of all employees.
9. Follow up the progress of proposed EHS items.
10. Prepare performance report of the committee including problems found and suggestion for the employer on a yearly basis.
11. Evaluate the EHS performance of the company.
12. Implement any EHS activities assigned by employer.

The term of this committee is valid from April 1, 2023 to December 31, 2024.

Please be informed accordingly.





Minutes of SPRC EHS Main Committee Meeting

Meeting No. : EHS2024-12

Place : M-226 meeting room

Date : 19 Dec 2024

Time : 13:30-14:30 hrs.

Attendees:

K. Narong T. (GR)	- Chairman
K. Pongkorn C. (GE)	- Employer representative
K. Paul R. (PN)	- Employer representative
K. Wisit S. (PD)	- Employer representative
K. Akasit R.(AS)	- Employer representative
K. Phoowadon C (AS/6)	- Employer representative
K. Sathapana S. (PD/31)	- Employee representative
K. Watcharaporn W. (TE/26)	- Employee representative
K. Songkran (AS/243)	- Employee representative
K. Paitoon M. (QS/4)	- Lead Health & Safety
K. Nillawan P (QS/43)	- Health and Safety Specialist
K. Teerawat C (TE/81)	- Laboratory Supervisor
K. Warayut (QS/41)	- Secretary

Apologize:

K. Saowapha T.(HR/12)	- Employee representative
K. Pinpong H. (PN/53)	- Employee representative
K. Tassanapan A. (PN/34)	- Employee representative

Agenda	Details	Action by	Status/ Due date
1	IIF Moment/SAA Highlight		
	<p>K.Paitoon shared the highlight SAA at Sulfur Loading area as follow,</p> <ul style="list-style-type: none">• All workers were equipped with full PPE, aware of the hazards, and supervised on-site by their supervisors.• Found a handmade, substandard tool bag was used to carry tools.Observed five out of eight bicycle brakes were not functioning properly. <p>The committee recommended to set up the campaign to fix the bicycles that are not in good conditions.</p> <p>K.Sathapana shared the highlight SAA at 76D106A - Reinstalling the skimmer arm and gear drive area as follow,</p> <ul style="list-style-type: none">• The barricade was being in place and proper manage during lifting gear.		

1	IIF Moment/SAA Highlight (Cont.) <ul style="list-style-type: none">Found the gas suction from portable gas detector tube is position incorrectly to represent the working area.Found the recording the time when entry personnel exited the area was missed. <p>K.Akasit shared the highlight SAA for removing activated carbon activity at SRU area as follow.</p> <ul style="list-style-type: none">Overall was good barricade, personnel understand their work and full PPE. <p>K.Songkran shared the highlight SAA for remove scaffold sulfur tank 68D101are detail as follow.</p> <ul style="list-style-type: none">Overall was good, there was proper barricades along with signposts which identified responsible persons were well managed.Personnel clearly understood their roles.																																																							
2	EHS Performance 2.1 EHS Performance <p>K.Warayut reported EHS performance of Nov 2024 are as followings;</p> <p>OE Statistic</p> <table><thead><tr><th rowspan="2">Focus Area</th><th rowspan="2">KPI</th><th colspan="2">Performance</th></tr><tr><th>Month</th><th>YTD</th></tr></thead><tbody><tr><td rowspan="3">Workforce Safety & Health</td><td>No one get hurt (Recordable Injuries)</td><td>0</td><td>0</td></tr><tr><td>Serious Injuries & Fatalities -case</td><td>0</td><td>0</td></tr><tr><td>Probable Serious Injuries & Facilities -case</td><td>0</td><td>1</td></tr><tr><td rowspan="3">Process Safety, Reliability and integrity</td><td>LOC Tier 1 - case</td><td>0</td><td>0</td></tr><tr><td>LOC Tier 2 - case</td><td>0</td><td>4</td></tr><tr><td>Operational Availability (OA) - %</td><td>96.87</td><td>97.17</td></tr><tr><td rowspan="2">Environment</td><td>Recordable Spill - case</td><td>0</td><td>0</td></tr><tr><td>Recordable Community Disturbance - case</td><td>0</td><td>0</td></tr><tr><td>Efficiency</td><td>EII</td><td>90.40</td><td>90.70</td></tr><tr><td>Security</td><td>Cybersecurity incident - case</td><td>0</td><td>0</td></tr><tr><td>Stakeholder</td><td>Enforcement Actions - case</td><td>0</td><td>0</td></tr><tr><td colspan="2">Hours since last Recordable Injury Case (30 Nov 2023)</td><td colspan="2">2,734,204</td></tr><tr><td colspan="2">Hours since last Days Away From Work Case (24 Jun 2013)</td><td colspan="2">38,842,524</td></tr></tbody></table> <p>Off the Job Injury</p> <ul style="list-style-type: none">There were 7 first aid cases of off the job injury occurring in Oct, YTD First aid case = 78 casesThere was 1 recordable case, YTD = 25 casesTRIR off the job injury for Oct =0.25, YTD 0.69	Focus Area	KPI	Performance		Month	YTD	Workforce Safety & Health	No one get hurt (Recordable Injuries)	0	0	Serious Injuries & Fatalities -case	0	0	Probable Serious Injuries & Facilities -case	0	1	Process Safety, Reliability and integrity	LOC Tier 1 - case	0	0	LOC Tier 2 - case	0	4	Operational Availability (OA) - %	96.87	97.17	Environment	Recordable Spill - case	0	0	Recordable Community Disturbance - case	0	0	Efficiency	EII	90.40	90.70	Security	Cybersecurity incident - case	0	0	Stakeholder	Enforcement Actions - case	0	0	Hours since last Recordable Injury Case (30 Nov 2023)		2,734,204		Hours since last Days Away From Work Case (24 Jun 2013)		38,842,524			
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2	EHS Performance (Cont.)	-	
	<p>2.2 Annual Check Up Result of 2024</p> <p>K.Nillawan provided update on 2024 Health Check-up result are key summary below;</p> <ul style="list-style-type: none"> There were 99.81% employee participated in the annual check-up. There has been a significant improvement in cholesterol and LDL levels compared to last year, however the prevalence of overweight and obesity has increased by approximately 4%. The test results of biological substance exposure from Benzene and Mercury were normal range. There were 3 new abnormal audiograms which's been investigated by Occupational medic. <p>The way forward in 2025 will focus on continuing the Healthy Education & Awareness program with bi-monthly communication, promoting health journey activities and closely monitoring abnormal cases under the supervision of a medical doctor.</p> <p>The committee recommended to showed the summary result for high risk group next meeting.</p> <p>2.3 Review EHS Main Committee Performance in 2024</p> <p>K.Warayut summarized lookback 2024 performance of EHS Main committee are detail below;</p> <p>Provided summarize aside from main activities and what committee did endorsements including</p> <ul style="list-style-type: none"> Take a break with IIF SPRC get fit challenge Using cell phone in restricted area Etc. <p>The proposed action plan for 2025 includes the following:</p> <ul style="list-style-type: none"> Apart from continuing SAA and organizing outside visits for committee members. K.Narong and K.Akasit encouraged Employee Representatives to actively share feedback and ideas from the employee side, as your voices are important to our committee. If stepping back from the committee, there is opportunity to provide input and voice concerns, ensuring the focus stays aligned with employee needs. As key representatives, your role is important to enhance safety and well-being across family members. 	-	

2	EHS Performance (Cont.)	-	
	<ul style="list-style-type: none"> K.Akasit shared different opportunities to better listen to employees through SAA, understanding their needs and feedback to create valuable improvements. <p>2.2 Highlight Activity from Supporting Committee</p> <p>K.Wisit reported to the committee about the key highlight issues of PD EHS committee as detailed below;</p> <ul style="list-style-type: none"> Shared feedback which was raised of safety concern about safety shoes from Marine Operation , requesting support special while they being more suitable when they working on vessel deck such as anti slip etc. TTLT feedback on the fatigue from personnel as creasing demand from 5 AM and late and lighting condition in early morning that they come at the same way of road while have big truck, motorcycle. <p>K.Songkran reported to the committee about the key highlight issues of Maintenance & Contractor EHS committee as detailed below;</p> <ul style="list-style-type: none"> Provided update about the communication about e-PTW upgrade to the contractors team understand the way forwards. K.Akasit additionally update TBT feedback, there will be new update for toolbox talk that'll engage more contractor. <p>K.Teerawat reported to the committee about the key highlight issues of Laboratory safety committee as detailed below;</p> <ul style="list-style-type: none"> Provided update regarding the electrical extension cord which was involved in a near miss related to tripping while being used for Lab equipment. The issue has been fixed and replace to permanent electrical cord. 	-	
3	Review of Action Item from Last Meeting		
	<p>3.1 Review of Action Item from last meeting</p> <p>The action items in progress include:</p> <p>K.Warayut provided update, the majority of actions are currently in-progress following:</p> <ul style="list-style-type: none"> Review and create updating SWP audit checklist to addresses the risks of the activities and aligns with the requirements of the updated e-PTW system. 	Warayut	In-progress

3	Review of Action Item from Last Meeting (Cont.)		
	3.1 Review of Action Item from last meeting The action items in progress include: <ul style="list-style-type: none"> Find the promotion activity to raise awareness on motorcycle riding safety with contractor. 	IIFIT Paitoon	In-progress
4	Consideration		
	4.1 Update Golden Rules of Safety K. Paitoon provided an update on the Golden Rules of Safety, according the pilot implementation plan of mobile phone usage in restricted areas next year. Therefore, it's related to; <ul style="list-style-type: none"> Rule #3 has been updated to: "Never use unapproved mobile phones in restricted areas" or "ไม่ใช้โทรศัพท์มือถือที่ไม่ได้รับอนุญาตในเขตพื้นที่หวงห้าม." The EHS Main Committee has endorsed for updating the Golden Rules of Safety No#3 in alignment with this new implementation cell phone in restricted area		
5	Roundtable		
	5.1 Recognition EHS Main Committee K. Warayut presented the top attendees in the EHS Main Committee meetings during their tenure, showing most attendee both Employer Representatives and Employee Representatives. The top three most attendees from Employer Representatives are K. Paul R., Pongkorn C., and Phoowadon C., respectively. The top three most attendees the Employee Representatives are Sathapana S., Songkran Y., and Watcharaporn W., respectively.		

5	Roundtable		
	Additionally, K.Narong also gave pens as recognition awards to all committee members and thanks for being an essential part of EHS Main Committee, serving as key representatives throughout the year. Slide pack: EHS main committee\2024\Meeting Presentation 19Dec 2024.pptx	-	Infor.

Close meeting on 14:30 hrs.

ภาคผนวก ข.21

แผนการจัดอบรมด้านอาชีวอนามัยและความปลอดภัย

ประจำปี พ.ศ. 2567

Please save file, then close file after using (Share File)								
EHS Training Schedule 2024								
Course Name	Target Group	Shift/Day	Duration	Type	Date	Est. Participant	Venue	QS/3 Team
Adv. Fire Training Refresher (Normex suit and PPE)	ERT, EST, OSC, OSC-NON	Shift A	1 day	Theory & Practice	7-Mar-2024	40	NPC S&E	QS/3 Team
Adv. Fire Training Refresher (Normex suit and PPE)	ERT, EST, OSC, OSC-NON	Shift B	1 day	Theory & Practice	19-Mar-2024	40	NPC S&E	QS/3 Team
Adv. Fire Training Refresher (Normex suit and PPE)	ERT, EST, OSC, OSC-NON	Shift C	1 day	Theory & Practice	5-Mar-2024	40	NPC S&E	QS/3 Team
Adv. Fire Training Refresher (Normex suit and PPE)	ERT, EST, OSC, OSC-NON	Shift D	1 day	Theory & Practice	12-Mar-2024	40	NPC S&E	QS/3 Team
Technical Fire Fighting Training for ERT Leader & Member - 1 (Normex suit and PPE)	ERT (JG G-H) ERT Member	Shift A	1 day	Classroom/Exercise	26-Mar-2024	40	R-106 / Fire Station	QS/3 Team
Technical Fire Fighting Training for ERT Leader & Member - 1 (Normex suit and PPE)	ERT (JG G-H) ERT Member	Shift B	1 day	Classroom/Exercise	28-Mar-2024	40	R-106 / Fire Station	QS/3 Team
Technical Fire Fighting Training for ERT Leader & Member - 1 (Normex suit and PPE)	ERT (JG G-H) ERT Member	Shift C	1 day	Classroom/Exercise	14-Mar-2024	40	R-106 / Fire Station	QS/3 Team
Technical Fire Fighting Training for ERT Leader & Member - 1 (Normex suit and PPE)	ERT (JG G-H) ERT Member	Shift D	1 day	Classroom/Exercise	21-Mar-2024	40	R-106 / Fire Station	QS/3 Team
Technical Fire Fighting Training for ERT Leader & Member - 2 (Normex suit and PPE)	ERT (JG G-H) ERT Member	Shift A	1 day	Classroom/Exercise	22-Aug-2024	40	R-106 / Fire Station	QS/3 Team
Technical Fire Fighting Training for ERT Leader & Member - 2 (Normex suit and PPE)	ERT (JG G-H) ERT Member	Shift B	1 day	Classroom/Exercise	29-Aug-2024	40	REB / Fire Station	QS/3 Team
Technical Fire Fighting Training for ERT Leader & Member - 2 (Normex suit and PPE)	ERT (JG G-H) ERT Member	Shift C	1 day	Classroom/Exercise	20-Aug-2024	40	R-106 / Fire Station	QS/3 Team
Technical Fire Fighting Training for ERT Leader & Member - 2 (Normex suit and PPE)	ERT (JG G-H) ERT Member	Shift D	1 day	Classroom/Exercise	27-Aug-2024	40	R-106 / Fire Station	QS/3 Team
On Scene (Fire Command)	OSC	Shift A	1 day	Theory & Practice	4-Apr-2024	30	R-106	QS/3 Team
On Scene (Fire Command)	OSC	Shift B	1 day	Theory & Practice	2-Apr-2024	30	R-106	QS/3 Team
On Scene (Fire Command)	OSC	Shift C	1 day	Theory & Practice	30-Apr-2024	30	R-106	QS/3 Team
On Scene (Fire Command)	OSC	Shift D	1 day	Theory & Practice	25-Jul-2024	30	REB	QS/3 Team
CPR & First Aid Refresher for Shift Staff	PN, PD, Lab Shift Staff	Shift A	0.5 day (A.M.)	Theory & Practice	23-Apr-2024	40	R-106	QS/43
CPR & First Aid Refresher for Shift Staff	PN, PD, Lab Shift Staff	Shift B	0.5 day (A.M.)	Theory & Practice	25-Apr-2024	40	R-106	QS/43
CPR & First Aid Refresher for Shift Staff	PN, PD, Lab Shift Staff	Shift C	0.5 day (A.M.)	Theory & Practice	9-May-2024	40	R-106	QS/43
CPR & First Aid Refresher for Shift Staff	PN, PD, Lab Shift Staff	Shift D	0.5 day (A.M.)	Theory & Practice	24-May-2024	40	R-106	QS/43
Fire Truck Training - 1st Half (Normex suit and PPE)	PN, PD (Driver) Assigned Fire truck driver (2 person /area)	Shift A	1 day (AM-6 PP, PM-6 PP)	Practice	10-May-2024	12	Fire Station	QS/3 Team
Fire Truck Training - 1st Half (Normex suit and PPE)	PN, PD (Driver) Assigned Fire truck driver (2 person /area)	Shift B	1 day (AM-6 PP, PM-6 PP)	Practice	28-May-2024	12	Fire Station	QS/3 Team
Fire Truck Training - 1st Half (Normex suit and PPE)	PN, PD (Driver) Assigned Fire truck driver (2 person /area)	Shift C	1 day (AM-6 PP, PM-6 PP)	Practice	27-May-2024	12	Fire Station	QS/3 Team
Fire Truck Training - 1st Half (Normex suit and PPE)	PN, PD (Driver) Assigned Fire truck driver (2 person /area)	Shift D	1 day (AM-6 PP, PM-6 PP)	Practice	30-Jul-2024	12	Fire Station	QS/3 Team
Fire Truck Training - 2nd Half (Normex suit and PPE)	PN, PD (Driver) Assigned Fire truck driver (2 person /area)	Shift A	1 day (AM-6 PP, PM-6 PP)	Practice	10-Sep-2024	12	Fire Station	QS/3 Team
Fire Truck Training - 2nd Half (Normex suit and PPE)	PN, PD (Driver) Assigned Fire truck driver (2 person /area)	Shift B	1 day (AM-6 PP, PM-6 PP)	Practice	12-Sep-2024	12	Fire Station	QS/3 Team
Fire Truck Training - 2nd Half (Normex suit and PPE)	PN, PD (Driver) Assigned Fire truck driver (2 person /area)	Shift C	1 day (AM-6 PP, PM-6 PP)	Practice	17-Sep-2024	12	Fire Station	QS/3 Team
Fire Truck Training - 2nd Half (Normex suit and PPE)	PN, PD (Driver) Assigned Fire truck driver (2 person /area)	Shift D	1 day (AM-6 PP, PM-6 PP)	Practice	13-Sep-2024	12	Fire Station	QS/3 Team
HAZMAT Training Refresher (Normex suit and PPE)	ERT, EST, OSC, OSC-NON	Shift A	1 day	Theory & Practice	30-May-2024	40	R-106 & Field	QS/3 Team
HAZMAT Training Refresher (Normex suit and PPE)	ERT, EST, OSC, OSC-NON	Shift B	1 day	Theory & Practice	18-Jul-2024	40	R-106 & Field	QS/3 Team
HAZMAT Training Refresher (Normex suit and PPE)	ERT, EST, OSC, OSC-NON	Shift C	1 day	Theory & Practice	31-Jul-2024	40	R-106 & Field	QS/3 Team
HAZMAT Training Refresher (Normex suit and PPE)	ERT, EST, OSC, OSC-NON	Shift D	1 day	Theory & Practice	16-Aug-2024	40	REB & Field	QS/3 Team
Rescue Training Refresher (Normex suit and PPE)	ERT, EST, OSC, OSC-NON	Shift A	1 day	Theory & Practice	16-Jul-2024	40	R-106 & Field	QS/3 Team
Rescue Training Refresher (Normex suit and PPE)	ERT, EST, OSC, OSC-NON	Shift B	1 day	Theory & Practice	26-Jul-2024	40	R-106 & Field	QS/3 Team
Rescue Training Refresher (Normex suit and PPE)	ERT, EST, OSC, OSC-NON	Shift C	1 day	Theory & Practice	23-Jul-2024	40	R-106 & Field	QS/3 Team
Rescue Training Refresher (Normex suit and PPE)	ERT, EST, OSC, OSC-NON	Shift D	1 day	Theory & Practice	19-Jul-2024	40	R-106 & Field	QS/3 Team
Radiation Safety Awareness Refresher	N, Instrument, Inspector, Lab Staff, RTO, QM	Shift A/D	1 day	Classroom	5-Sep-2024	40	R-106	QS/41 & IR/2
Radiation Safety Awareness Refresher	N, Instrument, Inspector, Lab Staff, RTO, QM	Shift B/C	1 day	Classroom	3-Sep-2024	40	R-106	QS/41 & IR/2
Oil Spill Response training refresher for front line operator (IMO Level 1)	Shift staff (PD/31,PD/32, PD/33, PM), AS/1, R	Shift A/D	1 day	Theory & Practice	9-Apr-2024	41	R106, Marine	PD/1B
Oil Spill Response training refresher for front line operator (IMO Level 1)	Shift staff (PD/31,PD/32, PD/33, PM), AS/1, R	Shift B/C	1 day	Theory & Practice	23-May-2024	41	R106, Marine	PD/1B
Fire Training Refresher for Lab	Lab Staff	Day, Shift A/D	0.5 day (P.M.)	Practice	18-Apr-2024	10	NPC S&E	QS/3 Team
Fire Training Refresher for Lab	Lab Staff	Day, Shift B/C	0.5 day (P.M.)	Practice	15-Feb-2024	10	NPC S&E	QS/3 Team

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EHS Training Schedule 2024								
Course Name	Target Group	Shift/Day	Duration	Type	Date	Est. Participant	Venue	QS/3 Team
Safety Working with Hazardous Substance and Gas cylinders handling (refresh every year)	Lab & Warehouse	Day, Shift B/C	0.5 day (P.M.)	Classroom	9-May-2024	20	R-105	QS/43
Safety Working with Hazardous Substance and Gas cylinders handling (refresh every year)	Lab & Warehouse	Day, Shift A/D	0.5 day (P.M.)	Classroom	16-May-2024	20	R-105	QS/43
Basic Fire Fighting Refresher for Day Staff (Q4)	Day Staff + PN, PD Operator (Not FIT)	Day	0.5 day	Theory & Practice	TBC	35	NPC S&E	QS/3 Team
Basic Fire Fighting Refresher for Day Staff (Q4)	Day Staff + PN, PD Operator (Not FIT)	Day	0.5 day	Theory & Practice	TBC	35	NPC S&E	QS/3 Team
Basic Fire Fighting Refresher for Day Staff (Q4)	Day Staff + PN, PD Operator (Not FIT)	Day	0.5 day	Theory & Practice	TBC	35	NPC S&E	QS/3 Team
Basic Fire Fighting Refresher for Day Staff (Q4)	Day Staff + PN, PD Operator (Not FIT)	Day	0.5 day	Theory & Practice	TBC	35	NPC S&E	QS/3 Team
CPR & First Aid Training Refresher for Day Staff	Day Staff	Day	0.5 day (A.M.)	Theory & Practice	14-Aug-2024	40	R-106	QS/43
CPR & First Aid Training Refresher for Day Staff	Day Staff	Day	0.5 day (P.M.)	Theory & Practice	14-Aug-2024	40	R-106	QS/43
CPR & First Aid Training Refresher for Day Staff	Day Staff	Day	0.5 day (A.M.)	Theory & Practice	21-Aug-2024	40	R-106	QS/43
CPR & First Aid Training Refresher for Electrical Team	Electrical Team	Day	0.5 day (P.M.)	Theory & Practice	21-Aug-2024	40	R-106	QS/43
Isolation of Equipment (1 hr.) & Safe Work Practice	PN, PD, AS/1, AS/2		1 day					QS/41
Confined Space / AGT Refresher	ations, Central maintenance Group and Laboratory		1 day					QS/41
Confined Space for New Operator	New Operator	Day	4 days	Theory & Practice	TBC	17		QS/41
Chief Safety Department	New Manager QS	Day	7 days	Classroom	TBC	-	PUB (if any)	QS/42
Safety Training for Supervisor Level	New Supervisor	Day/Shift	2 days	Classroom	TBC	-	PUB (if any)	QS/42
Safety Training for Management Level	New Management	Day/Shift	2 days	Classroom	TBC	-	PUB (if any)	QS/42
EHS Main Committee Member	Assigned Person	Day/Shift	2 days	Classroom	TBC	-	PUB (if any)	QS/42
EHS for Job Rotation (significant change in risk and hazard)	Assigned Person	Day/Shift	3 hrs.	Classroom	TBC	-	INH	QS/42
Electrical safety + First Aid for Electrician	New I&E	Day	1 day	Theory & Practice	TBC	-	R-106	QS/42
CPR & First Aid Training for New Staff	New Staff	Day	1 day	Theory & Practice	TBC	30	R-106	QS/43
Basic Fire Fighting for New Staff	New Staff (Inc. Operator)	Day	1 day	Theory & Practice	May	-	NPC S&E	QS/3 Team
Technical Fire Fighting for New Operation staff (PN & PD)	New Staff (Operator)	Day	1 day	Theory & Practice	TBC	22	R-106 & Fire Station	QS/3 Team
SCBA for New Operation Staff (Normex suit and PPE)	New Staff (Operator)	Day	0.5 day	Theory & Practice	TBC	17	Fire Station	QS/3 Team
SCBA refresher (refresh every 2 years) (Normex suit and PPE)	Shift A		0.5 Day	Theory	23-Apr-2024	40	Fire Station	QS/3 Team
SCBA refresher (refresh every 2 years) (Normex suit and PPE)	Shift B		0.5 Day	Theory	25-Apr-2024	40	Fire Station	QS/3 Team
SCBA refresher (refresh every 2 years) (Normex suit and PPE)	Shift C		0.5 Day	Theory	9-May-2024	40	Fire Station	QS/3 Team
SCBA refresher (refresh every 2 years) (Normex suit and PPE)	Shift D		0.5 Day	Theory	24-May-2024	40	Fire Station	QS/3 Team
Confined Space Entry (4 ผู้)	New Staff (Operation, OC)	Day/Shift	4 days	Classroom/Practice	TBC	-	PUB	QS/42
Confined Space Entry (ผู้ปฏิบัติงาน)	New Staff (Process Engineer)	Day	2 days	Classroom/Practice	TBC	-	PUB	QS/42
Environmental Manager	New Manager QS	Day	1 day	Classroom	TBC	-	PUB	QS/2 Team
Environmental Controller	New Environmental Specialist	Day	5 days	Classroom	TBC	-	PUB	QS/2 Team
Environmental Operator (Water)	New PD Shift Supervisor	Shift	2 days	Classroom	TBC	-	PUB	QS/2 Team
Environmental Operator (Air)	New PN Shift Supervisor	Shift	2 days	Classroom	TBC	-	PUB	QS/2 Team
Environmental Operator (Waste)	New Equipment Service Supervisor	Day	2 days	Classroom	TBC	-	PUB	QS/2 Team
Energy Responsible Person (ผู้รับผิดชอบด้านพลังงาน)	Assigned Person			Classroom	TBC	-	PUB	QS/2 Team
Senior Energy Responsible Person (ผู้รับผิดชอบด้านพลังงานอาวุโส)	Assigned Person			Classroom	TBC	-	PUB	QS/2 Team
Boiler Operator Refresher			1 Day	Classroom	13-Aug-2024	25	REB	Outsider
Boiler Operator Refresher			1 Day	Classroom	15-Aug-2024	25	REB	Outsider

ภาคผนวก ข.22

แผนฉุกเฉิน และการซ้อมแผนฉุกเฉิน



บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)

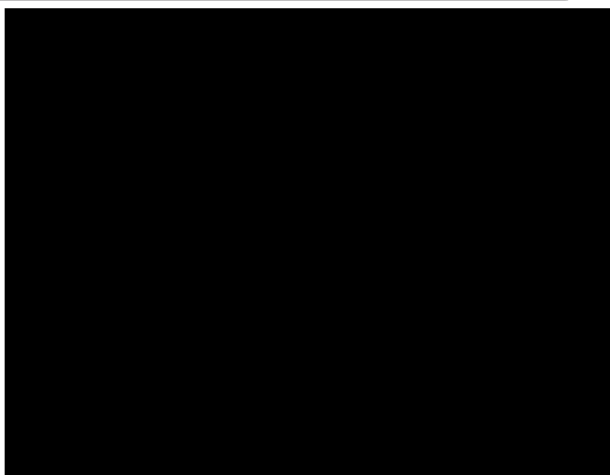
แผนคุณภาพ สิ่งแวดล้อม อาชีวอนามัยและความปลอดภัย

แผนปฏิบัติการประจำท่าเรือ เพื่อป้องกันและขจัดมลพิษทางน้ำเนื่องจากน้ำมัน

จัดทำโดย:

ทบทวน

และอนุมัติโดย:



แผนปฏิบัติการประจำท่าเรือเพื่อป้องกันและขจัดมลพิษทางน้ำเนื่องจากน้ำมัน

1. บทนำ

(ก) ข้อมูลทั่วไป

ท่าเทียบเรือ และท่ารับน้ำมันดิบกลางทะเลของบริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน) (SPRC) ได้รับการออกแบบ บำรุงรักษา และดำเนินการเพื่อลดโอกาสการรั่วไหลของน้ำมัน อย่างไรก็ตาม SPRC ตระหนักดีว่าโอกาสที่น้ำมันจะรั่วไหลนั้นไม่สามารถกำจัดได้อย่างสมบูรณ์ ดังนั้นแผนฉุกเฉินนี้จึงได้รับการออกแบบมาเพื่อให้คำแนะนำสำหรับการรับมือเหตุฉุกเฉินต่อการรั่วไหลของน้ำมัน แผนอธิบายการดำเนินการตอบสนองที่สามารถดำเนินการเพื่อปกป้องบุคลากรและลดความเสียหายต่อสิ่งแวดล้อม

(ข) วัตถุประสงค์ของแผน

SPRC มุ่งมั่นที่จะตอบสนองอย่างทันทั่วถึงและเหมาะสมต่อการรั่วไหลของน้ำมัน วัตถุประสงค์ของขั้นตอนนี้คือเพื่อตรวจสอบและเตรียมรับมือการรั่วไหลของน้ำมัน แผนนี้จัดทำขึ้นเพื่อเตรียมบุคลากรของโรงกลั่น ท่าเทียบเรือและท่ารับน้ำมันดิบสำหรับการตอบโต้สถานการณ์น้ำมันรั่วไหลในทะเล เพื่อลดผลกระทบต่อสิ่งแวดล้อม ปกป้องสุขภาพและความปลอดภัยของบุคลากร ปกป้องอุปกรณ์โรงงาน และช่วยให้บุคลากรปฏิบัติตามกฎระเบียบ

แนวคิดของการตอบโต้ภาวะฉุกเฉินคือการลดการแพร่กระจายของการรั่วไหลของน้ำมันให้น้อยที่สุดและบรรเทาผลกระทบ โดยการควบคุมแหล่งที่มาของการเกิดการรั่วไหล และกักเก็บให้ใกล้กับแหล่งที่มากที่สุด การปกป้องพื้นที่ชายฝั่งและพื้นที่อ่อนไหวด้านสิ่งแวดล้อม และกำจัดน้ำมันและคราบน้ำมันโดยเร็วที่สุด

(ค) ขอบเขตของพื้นที่รับผิดชอบ

การดำเนินงานของ SPRC อยู่ในพื้นที่ของการนิคมอุตสาหกรรมแห่งประเทศไทย (กนอ.) ที่นิคมอุตสาหกรรมมาบตาพุด จังหวัดระยอง ประกอบด้วยท่ารับน้ำมันดิบกลางทะเล ท่าเทียบเรือ และโรงกลั่น ตั้งอยู่ห่างจากกรุงเทพฯ ประมาณ 200 กม. ในเขตพัฒนาชายฝั่งทะเลตะวันออก แผนฉุกเฉินนี้ครอบคลุมความเสี่ยงของการรั่วไหลของน้ำมันที่เกิดจากกิจกรรมที่สถานีรับน้ำมัน คือ ท่ารับน้ำมันดิบกลางทะเล Single Point Mooring (SPM) และท่าเทียบเรือเท่านั้น



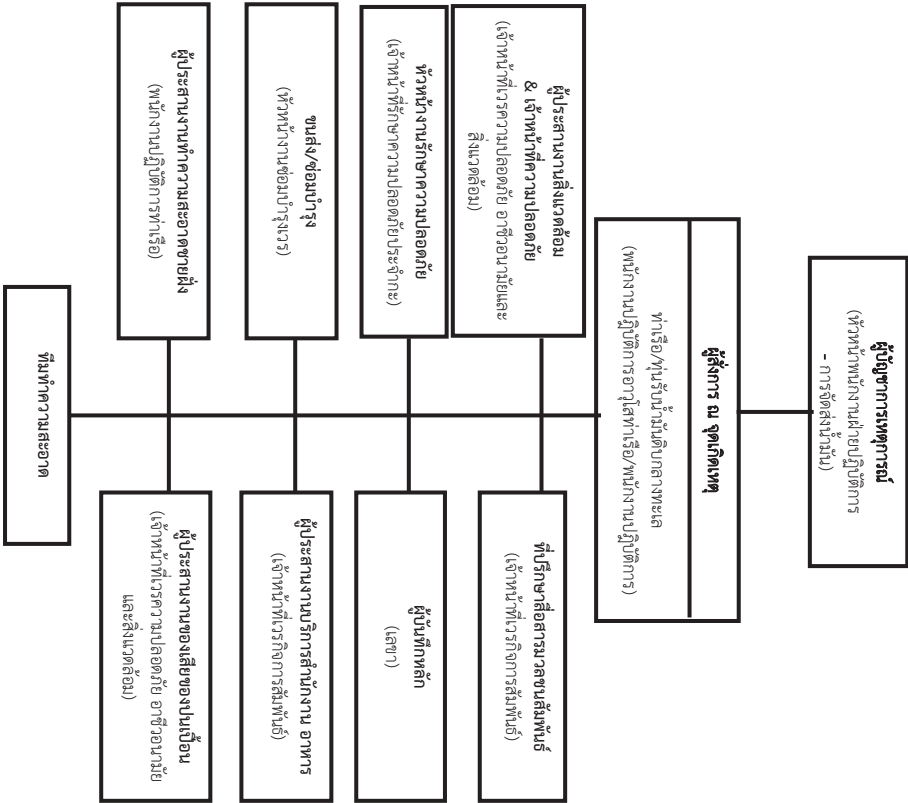
ท่ารับน้ำมันดิบกลางทะเล

ท่ารับน้ำมันดิบกลางทะเล หรือ Single Point Mooring (SPM) อยู่นอกชายฝั่งที่ละติจูด 12° 29' 12.6" N ลอง 101° 11' 57.6" E ห่างจากนิคมอุตสาหกรรมมาบตาพุดไปทางใต้ประมาณ 20 กม. ในอ่าวไทย SPM เชื่อมต่อกับระบบการรับน้ำมันดิบบนฝั่ง โดย Pipeline End Manifold (PLEM) บนพื้นทะเลใต้ SPM และท่อแข็งใต้ทะเล

SPM ถูกใช้เพื่อรับน้ำมันดิบระดับปานกลาง โดยมีความถี่เฉลี่ย 5 ครั้งต่อเดือน และสามารถรองรับเรือบรรทุกน้ำมันขนาด Very Large Crude Carrier (VLCC) ได้ ปริมาณน้ำมันดิบที่ได้รับผ่านทาง SPM โดยเฉลี่ยประมาณ 165,000 บาร์เรลต่อวัน (26,000 ลูกบาศก์เมตรต่อวัน) โดยสถิติการขนถ่ายผ่านท่ารับน้ำมันดิบกลางทะเล ตั้งแต่ปีพ.ศ. 2562-2566 มีดังนี้

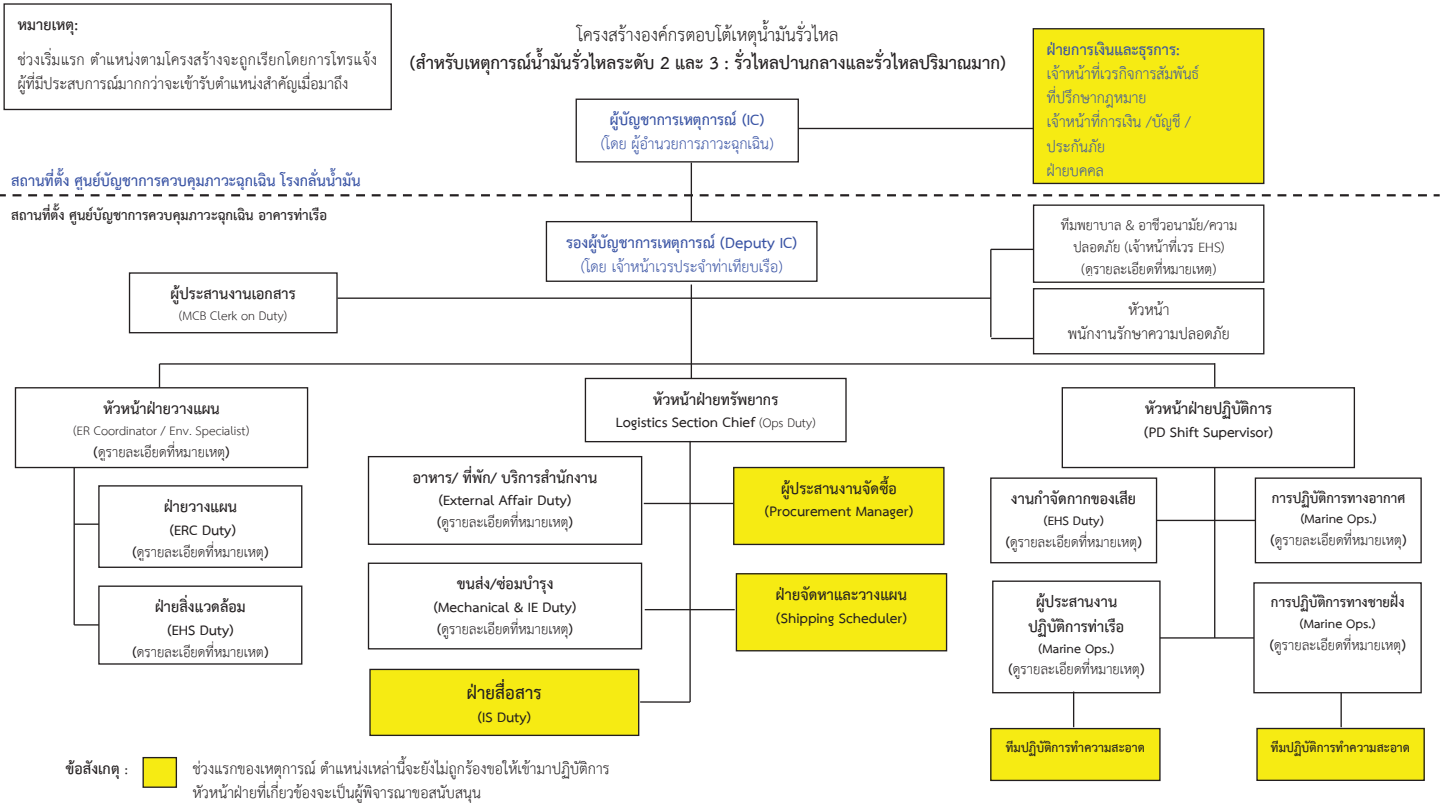
2. การกำหนดองค์การและหน้าที่ความรับผิดชอบ
(ก) บทบาทหน้าที่ผู้รับผิดชอบ แผนผังแสดงหน้าที่ผู้รับผิดชอบ

โครงสร้างองค์การตอบโต้เหตุน้ำมันรั่วไหลระดับ 1



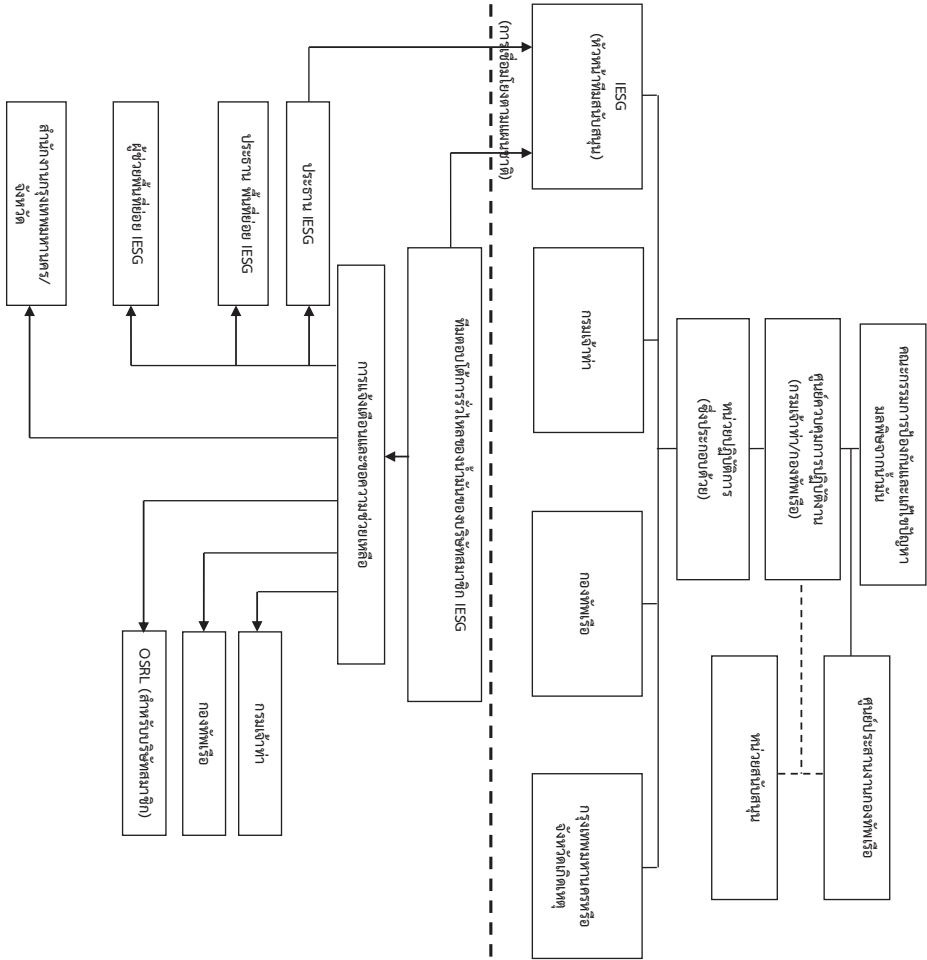
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โครงสร้างองค์กรตอบโต้เหตุน้ำมันรั่วไหล
(สำหรับเหตุการณ์น้ำมันรั่วไหลระดับ 2 และ 3 : รั่วไหลปานกลางและรั่วไหลปริมาณมาก)



ข้อสังเกต : ช่วงแรกของเหตุการณ์ ตำแหน่งเหล่านี้จะไม่ถูกร้องขอให้เข้ามาปฏิบัติการ หัวหน้าฝ่ายที่เกี่ยวข้องจะเป็นผู้พิจารณาขอสนับสนุน

โครงสร้างการเชื่อมต่อการช่วยเหลือทุนนั้นไว้หลัก
(สำหรับเหตุการณ์ระดับ 2 และ 3 การเชื่อมโยงงานแนวชาติ)



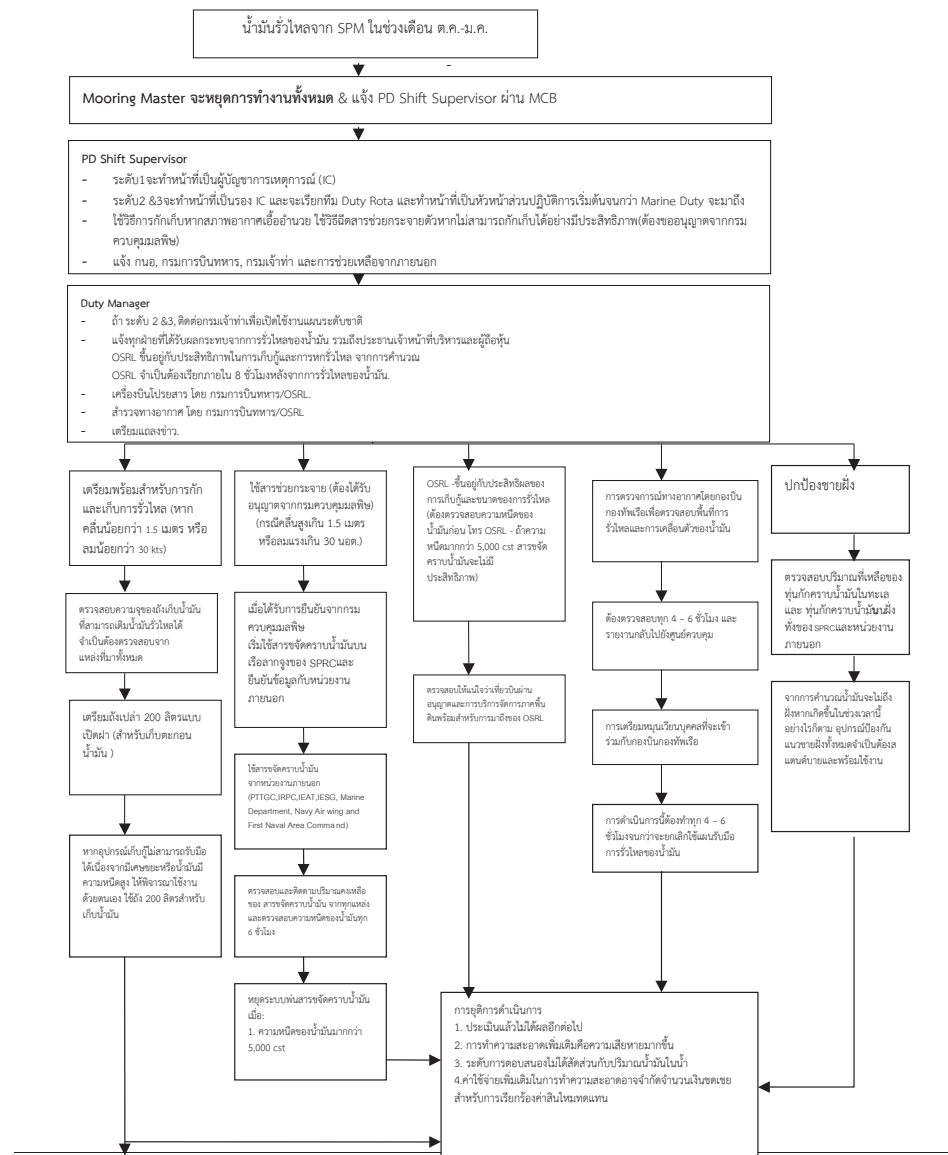
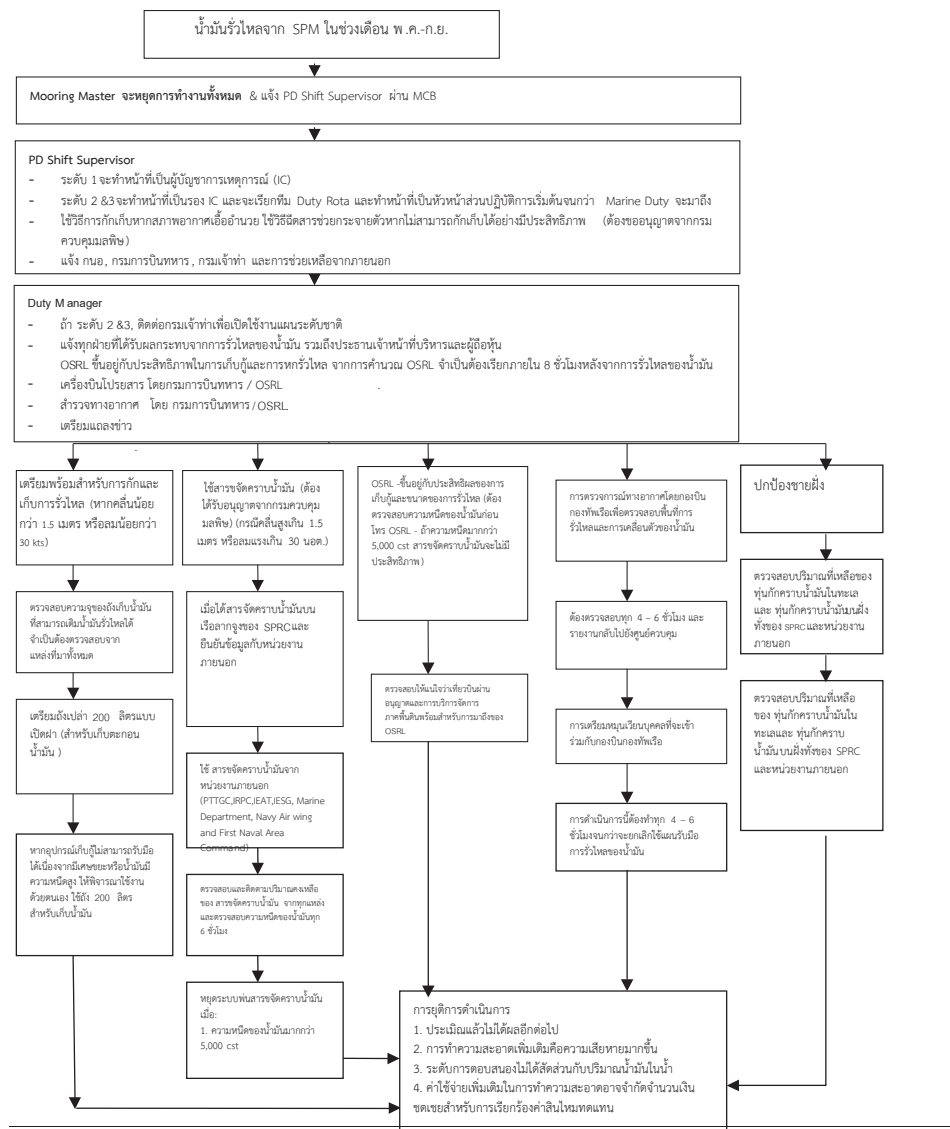
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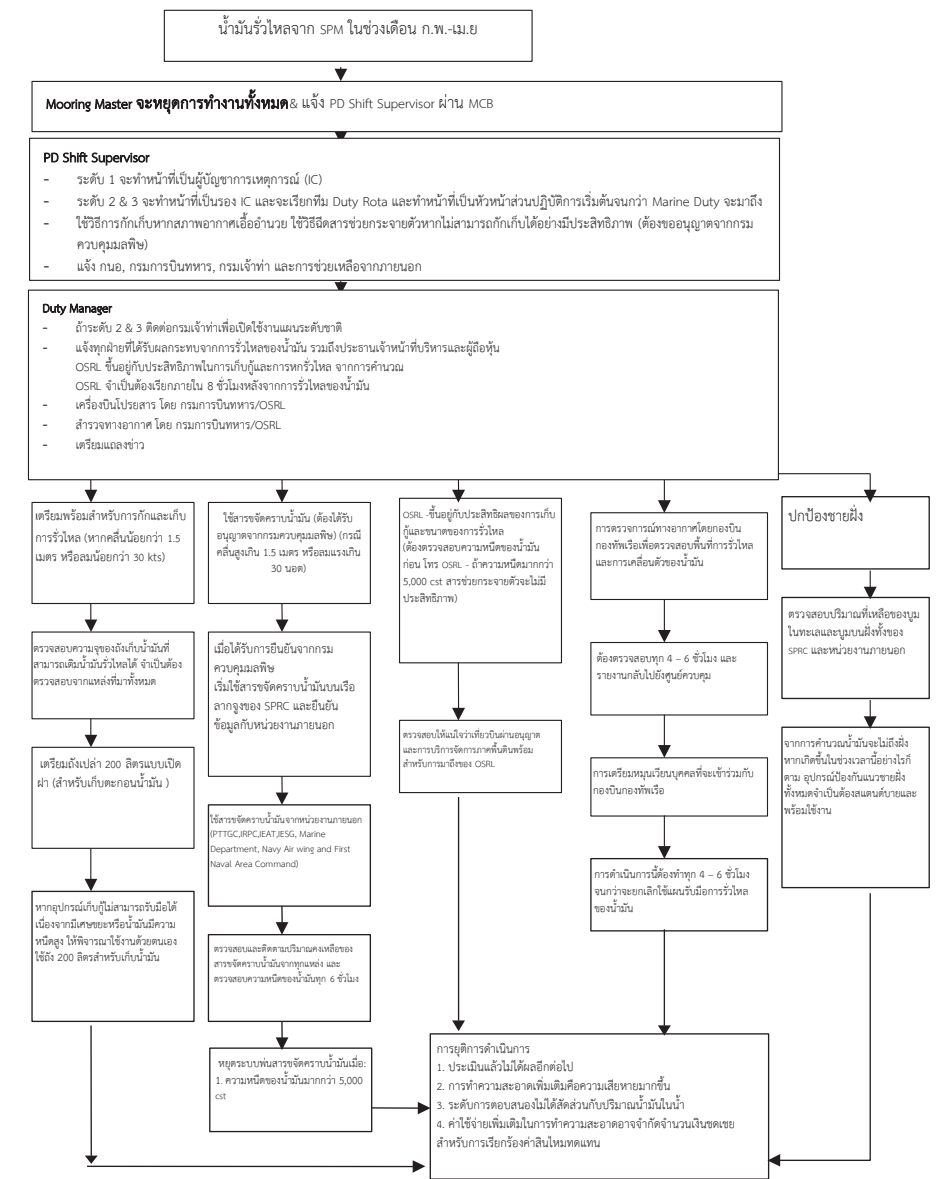
ความรับผิดชอบ:

- ❑ มั่นใจว่าเหตุการณ์ที่มีนัยยะสำคัญจะต้องถูกบันทึกอย่างถูกต้อง
- ❑ ประสานกับศูนย์สื่อสารว่าทุกข้อมูลที่มีนัยยะสำคัญถูกบันทึก
- ❑ มั่นใจว่าสมาชิกในศูนย์ฉุกเฉินให้ข้อมูลที่มีนัยยะสำคัญหรือเหตุการณ์ที่มีการเปลี่ยนแปลงสถานการณ์ฉุกเฉิน

ในกรณีเหตุการณ์ผิดปกติ เหตุการณ์ภาวะฉุกเฉิน ผู้อำนวยการภาวะฉุกเฉินต้องมั่นใจว่า ผู้มีส่วนได้เสียทั้งหมดได้รับการแจ้งเตือนแล้ว

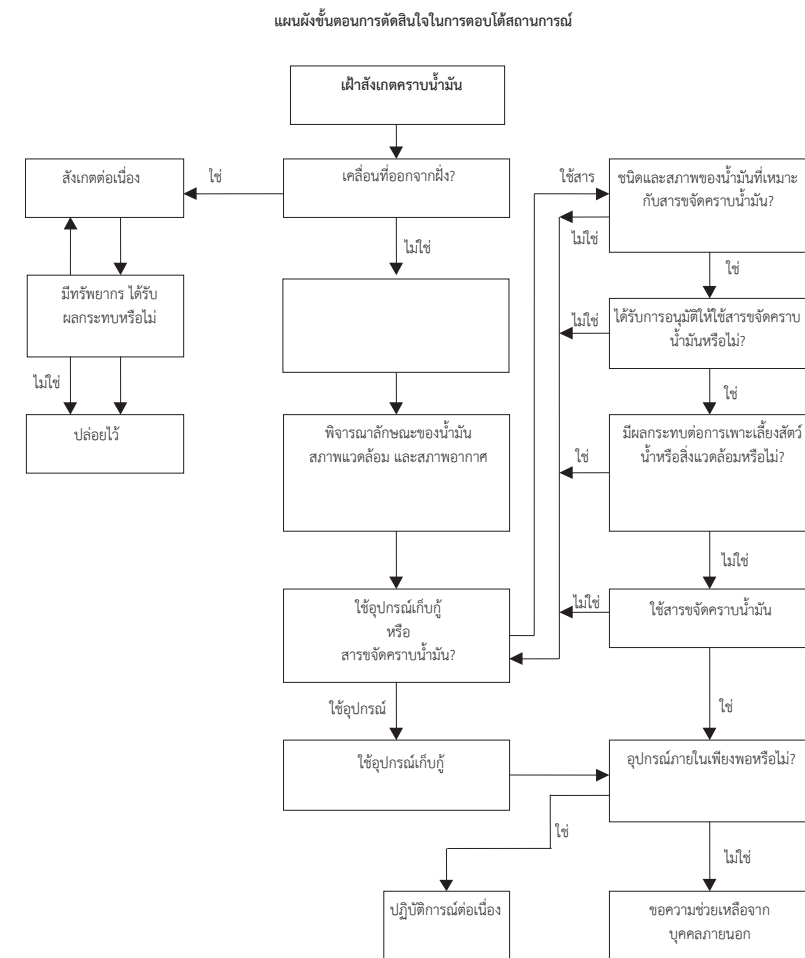
ผู้มีส่วนได้เสีย สถานการณ์	สำนักงานท่าเรือ อุตสาหกรรม มาบตาพุด	กรมเจ้าท่า ระยอง	กรมควบคุม มลพิษ (PCD)	เทศบาล มาบตาพุด จังหวัดระยอง	สมาคมอนุรักษ์ สภาพแวดล้อม ของกลุ่ม อุตสาหกรรม น้ำมัน	โรงพยาบาล คูสัญญา	ชุมชนใกล้เคียง / บริษัทที่อยู่ใน เอกสารติดต่อ หน่วยงาน ภายนอก (AM-OT-CA-012)	บริษัท พีทีที โกลบอล เคมี คอล จำกัด (มหาชน)	เซฟรอน
ภาวะฉุกเฉินระดับ 1	✓	✓	✓	ในกรณีที่เกิด เหตุบนฝั่ง	-	ในกรณีที่มี ผู้บาดเจ็บ และต้องนำส่ง โรงพยาบาล	✓	✓	-
ภาวะฉุกเฉินระดับ 2	✓	✓	✓		✓		✓	✓	✓
ภาวะฉุกเฉินระดับ 3	✓	✓	✓		✓		✓	✓	✓

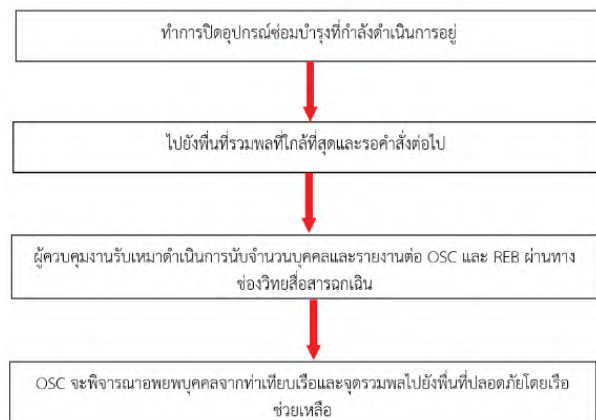




(2) การตอบโต้ทั่วไป

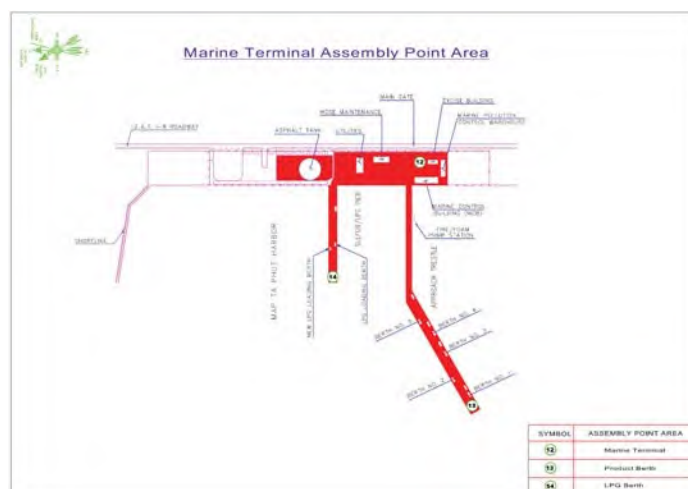
ส่วนต่อนี้จะอธิบายขั้นตอนการตอบโต้เบื้องต้น โดย Marine Terminal Senior Operator/Mooring Master มีหน้าที่รับผิดชอบในการตรวจสอบให้แน่ใจว่าได้ปฏิบัติตามขั้นตอนต่างๆ จนกว่าจะถึงเวลาที่ได้ออกจากตำแหน่งผู้บัญชาการในที่เกิดเหตุแล้วส่งมอบหน้าที่ให้ Marine Duty





รายละเอียดของขั้นตอนการอพยพได้อธิบายไว้ในแนวทางปฏิบัติในการอพยพออกจากท่าเทียบเรือทะเล (EHS-OT-QS-3021)

แผนผังจุดรวมพลท่าเทียบเรือ





Star Petroleum Refining Public Company Limited

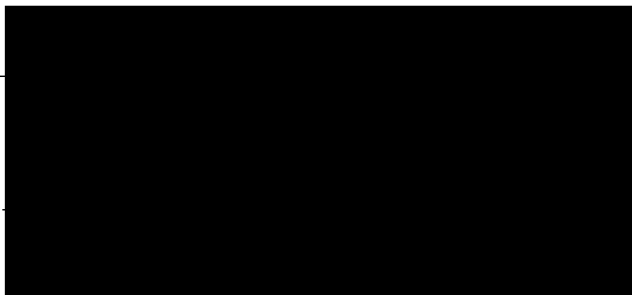
Process Safety & QEHS Department

**EHS-SP-QS-0006
Emergency Response Plan**

Prepared by: _____

Reviewed and

Approved by: _____



Distribution List

Copy No.	Controller/ Owner	Location
00	Emergency Response Coordinator (Document controller)	EDMS
01	PN EOC	Fire Station (F-115)
02	MCB EOC	MCB
03	PN CCB	CCB
04	QEHS and lab Document Control Room	R - 202
05	Emergency Response Coordinator	RE -103
06	Duty Manager	Duty Manager Brief Case
07	Operations Duty	Operations Duty Brief Case
08	External Affairs Duty	External Affairs Duty Brief Case
09	EHS Duty	EHS Duty Brief Case
10	ERC Duty	ERC Duty Brief Case
11	Marine Duty	Marine Duty Brief Case
12	Mechanical Duty	Mechanical Duty Brief Case
13	I&E Duty	I&E Duty Brief Case
14	PD Shift Supervisor	Incident Commander Brief Case
15	Tank Truck Loading Terminal	TTLT Office

Amendment List

Revision	Date	Page/ Section	Reason	By
0	06 Oct 08	First release	QS/1	0
1	1 Oct 09	Page Vi/ EMAG	Add IRPC in to member of Emergency Mutual Aid Group	Athit C.
		4/4.0Emergency Response Organization Overview	Change the line of command for emergency support team to under OSC	
		6/6.0 Emergency Response Decision Procedure Appendix R	Add action of PD shift supervisor as IC on asking REB to notify PTTAR-1 FIT in case of emergency.	
		7/7.0 Actions on Emergency	Add action of REB as following; 1. Alert PTTAR-1 via hotline to alert their FIT team (Level 1) 2. Send SMS to all FIT team (level 2) to call in to support at site.	
		8/8.0 Communication Method	Add scope of communication to all SPRC personnel and contractor to cover emergency level 1 which has significant impact on operation or affect public.	
		11/9.2.1 General requirement	1. Update the name of Rayong Emergency to "Kho Kaew" 2. Add notification to the authority (IEAT Map Ta Phut and Map Ta Phut Municipality for emergency level 1 that significant affect public.	
		20/11.3	Add link of Community Evacuation Plan	
		22/11.4 Emergency Contact Points in case of neighboring company incident	Add PTTAR 1 to the company that might affect to MCB.	
		65/3.1 Bomb Threat Checklist	Add link to bomb threat checklist	
		74/9.0 Offsite Road Accidents Involving Product from SPRC	Update telephone number of SPRC TTLT Coordinator; delete PPT and Caltex Depot Manager telephone number by link to the Emergency Telephone Number instead.	
		82/ Appendix F Headcount Procedure	Add areas of building that the Office warden shall do headcount (Marine Terminal Building and Construction Building)	
		87/ Appendix I Drinking Water and Refreshment	More clarification on cash reserved for emergency situation that EA duty will be	

Revision	Date	Page/ Section	Reason	By
		90/ Appendix N	the person to coordinate with treasurers for cash.	
		95	Update Emergency Operation Center Layout Add appendix R Mutual aid agreement between SPRC and PTTAR Refinery	
		97	Add appendix S Pier Evacuation Guideline	
		98	Add appendix T PTT group crisis and Emergency Report (form)	
2	3-May-11	10/8. Notification and Reporting	Revise the sub content of Notification and reporting by grouping the reporting to authority e.g. IEAT-MTP, MTP municipality, community (8.2) and share holder (8.3) in to one table (8.2 Notification and Reporting to Stakeholders). This change is to comply with the IEAT-MTP complex emergency response plan and Rayong Emergency Response Plan B.E.2553.	Athit C.
		11/8.2.4 Shareholder notification	Add a role of ERC duty to notify to the PTT communication center in case of emergency level 1. This updating is to comply with the PTT Group Emergency Management Plan	
		21/10.3 Neighboring Community/Company Notification	More explanation about community notification process in case of emergency can effect to the communities nearby the company by linking to Community Communication Process Guideline (EHS-WI-QS-3012)	
		31/ 5.1 Duty Manager	Re-write the specific task of Duty Manager Roles and Responsibilities by changing from Shareholders to be the Stakeholder which in line with the 8.2.4	
		36/5.3 External Affair	Define a scope of role and responsibility of External Affair Duty to cover the provision of additional resource including food and refreshment to support emergency response which can ask support and cooperate with ME/IE duty to help as well as mentioned about the list of vendor/supplier available in the contact list file.	
		43/5.8 Mechanical/Instrument and Electrical Duty	More explanation of ME/I&E role and responsibility about coordinate and process request for additional resource including foods, refreshment by coordinate and process with External Affair Duty and help to mobilize the additional resources.	
3	24-Jun-12	2/Glossary	Changing the company of the following company	
		6/5.0 Emergency		

Revision	Date	Page/ Section	Reason	By
		Response Decision		
		22/10.4 Emergency Contact Points In case of Neighboring Company Incident	PTTAR-1 to PTTGC-6 PTTChem I-1 to PTTGC-2, PTTChem I-4 to PTTGC-3 PTTAR-2 to PTTGC-4	
		95-96/Appendix R Mutual Aid Agreement between SPRC and PTTAR	Changing the name of PTTAR to PTTGC6	
		12/8.2 Notification& Reporting to Stakeholder	Update the name list of Shareholder Management (PTT) Management that to be notified in case of emergency level 2,3 according PTT Organization.	
4	15-Jan-13	All 2/Glossary 9/SMS 12/8.2 Notification& Reporting to Stakeholder 14/8.2.1 14/8.2.4 Appendix A/Role and Responsibilities – 35/5.2 Operation Duty 36/5.3 External Affair Duty 40/5.5 EHS Duty 43/5.8 ME &IE duty 79/Appendix D Mutual Assistance 86/Appendix H Foam Supplier 97/Appendix U 98/Appendix V	Update company name from Co.,Ltd to Public Company Limited Add new EMAG member – MOC Delete SMS code N Add notification to PTT Emergency Center in case of Emergency level 1 (by ERC Duty) Add the notification and reporting form to IEAT-MTP and MTP- Port Update the notification requirement according to labor law (Update the requirement). Add new notification requirement to the Office of Atomic for Peace according to the Radiation Safety law requirement Change the location of Operation Duty from CCB to EOC Re-write the responsibility of EA duty to be more clearly on buying additional resource include food and refreshment Add new responsibility “Call in Company Radition Safety Officer (RSO) in case of Radiation Incident Re-write the responsibility of ME&IE duty to be more clearly on supporting to EA Duty by mobilize the additional resource include food and refreshment Add new EMAG Member (MOC) Update name list of Foam Suppliers Add Appendix U: Reporting form to the Labor Protection and Welfare Add Appendix V: Reporting form to the IEAT-MTP (EMCC) in case of emergency	Athit C.

Revision	Date	Page/ Section	Reason	By
		99/Appendix W	Add Appendix W: Reporting form the MTP-Port (in case of abnormal situation and emergency occur at Port.	
5	1-Sep-14	2/Glossary 8/ 7.0 Communication 11-12 /8.2 Notification &Reporting to stakeholder	Update the EMAG member to be in line with updated EMAG agreement. Identify more area that need to communicate to SPRC family members via all mailboxes to cover the incident occur at adjacent companies. Add the wording of periodically update required to notify to the IEAT-MTP (EMCC) according to level3 exercise recommendation. State a requirement of have to notify to the IEAT-MTP (EMCC) in case of abnormal situations resulting from emergency shutdown that required to notify to the IEAT-MTP (EMCC) within 15 minutes after aware of the Shutdown (refer to the IEAT Notification no67/B.E.2557 announce date 31 July B.E.2557) Update the notification to shareholder (PTT) from the specific name list of PTT executives to the PTT Communication Center which in line with the PTT group emergency and Crisis Management Plan Add new subject “Leak Response Guides Decision” to be use as the guideline of SPRC leak response according to the CVX Leak Response Protocol guide of practice Update the EMAG member to be in line with updated EMAG agreement. Update refinery and marine terminal assembly areas Update pipe line lay out to be in line with service agreement	Athit C.
6	22-Dec-14	All pages 39-47 and 54/ Appendix A 62/Appendix B 78/Appendix C	Change SPRC logo More clearly identified the person to call in of each duty rota member to support Update the alcohol level in blood to be 0mg% Update the mobile phone number of TTLT coordinator	Athit C.



Star Petroleum Refining
Public Company Limited

EHS-SP-QS-0006: Emergency Response Plan

Revision	Date	Page/ Section	Reason	By
7	1-Sept-15	20/ 10.6 Leak Response Flow Chart	Update the Leak Response Flow Chart to be reflex the current practice	Athit C.
		26/ 11.4 Emergency Contact Point in case of Neighboring Company Incident	Change the company name from Bayer Thai to Covestro (Thailand)	
		44/Appendix A.5.5 EHS Duty	Add role of keep monitoring and tracking of an injured person and head count details (to update to the Duty Team members)	
		50/Appendix A7.Emergency Support Team	Add the wording of the responsibilities will be assigned by Emergency Response Coordinator	
		54/Appendix A11.Historian	Identify the roles of Historian to be the Assign Administrative Assistance or Marine Duty (If available/Not the Marine Case) by Duty Manager	
8	24-Feb-16	65/Appendix C	Update the H2S concentration at fence line from 10 ppm to 5 ppm	Athit C (QS/3)
		103-104/Appendix V/W	Update the IEAT and IEAT-MTP Port Abnormal and Incident Notification Form to be in line with the IEAT Emergency Response Plan B.E.2557	
		106/15.Reference List	Change the revision of IEAT-IEAT_MTP port emergency response plan from B.E.2557 to B.E.2558	
		10/8.1 Notification Flow Chart	Take the PTT company out from the stakeholder notification list	
		11/8.2 Notification and reporting to Stakeholder	Indicate the tracking and follow up process of recommendation/feedback received from post incident review.	
		28/ 13 Post Incident Review		Soontorn S. (TE/717)
		45/ Appendix A Role and Responsibility 5.6 Emergency Response Coordinator (Duty)	Delete the role and responsibility of ERC Duty to notify the PTT out.	
		100/Appendix U Notification to the PTT	Delete the Notification from to PTT out	
		79, 80, 81 / Appendix C10.Failure of SPRC Trunked Radio system procedures	Update content on SPRC Trunked Radio system from old (analog) to new (digital) to reflect the fall back modes on new system implemented	



Star Petroleum Refining
Public Company Limited

EHS-SP-QS-0006: Emergency Response Plan

Revision	Date	Page/ Section	Reason	By
9	15-Aug-16	1/1.Purpose & Scope 19/ 10.5 Leak Response Protocol 20/10.6 Leak Response Flow Chart	Add table of Employee involvement Delete Leak Response Protocol out Update the workflow of Leak Response Flow Chart	Athit C (QS/3)
10	16-Dec-16	43/ Appendix A (Role and Responsibilities) 92/Appendix M Emergency Training and Exercise	add role of EHS (5.5) duty to advise to OSC through IC about suspend the emergency operation when scene atmosphere is IDLH and/or imminent danger condition Add link to the EHS-OT-QS-3005 Emergency Response Training and Exercise Guideline	Athit C (QS/3)
11	28-May-18	Viii / Appendix A	4.0 Changed FIT to ERT 9.0 Changed EST (Back up team) to Emergency Support Team	BunditV . (QS/3)
		Page 2	Changed FIT to ERT	
		4 / Glossary	Changed FIT to ERT Changed FIT-B to ERT or EST Added CMP and CMT	
		21 / 10.5	Deleted note and Leak check list out	
		34	Changed FIT to ERT	
			Role: ERT was reviewed	
		39 / 3.0	Changed FIT to ERT	
		50 / 7.0	EST added wording (Day Staffs)	
			Who: removed off-shift operators out	
			Emergency level 3 → 2, 3	
			FIT changed to ERT	
		53 / 9.0	FIT B revised to EST Operations and revised Responsibilities	
		62 / 17.0	Revised Legal Adviser Responsibility: Removed out "the Treasurer's Unit related to Traders Insurance Policy and /or other"	
		72 / 4.1	FIT changed to ERT	
		77 / 7.0	FIT changed to ERT	
		78 / 8.0	FIT changed to ERT	
		79 / 9.0	Revised: Off Site Road Accidents Involving Product from SPRC	
		95 / Appendix M	Revised Emergency Training and Exercises	
		103 / Appendix U	Updated form	
		104 / Appendix V	Updated form	
		105 / Appendix W	Removed out: APPENDIX W Emergency Response Considerations and Hazard Assessment Checklist for Process Loss of Containment	
		105 / REFERENCE LIST	Removed out: PTT Group Emergency Plan (CP-SSHE-3G-002)	
12	8-Apr-19	2 / 1.0 purpose and scope	Revised: response to the emergency situation by create emergency level 1A / 1B	QS/3
		2 / 3.0 Emergency level	Revised: Emergency level	
		9 / 4.0	Revised: EMERGENCY RESPONSE ORGANISATION OVERVIEW	

Revision	Date	Page/ Section	Reason	By
		8-9 / 5.0	Revised: EMERGENCY RESPONSE DECISION PROCEDURE	
		68 / Appendix C	Action major leak change item evacuation guideline 10.3 to 11.3	
		15-16 / 8.2	Revised emergency level in: Notification and Reporting to Stakeholder	
13	28-Oct-19	7 / 3.0	Revised stage of emergency, Map Ta Phut municipality move to Level 3 of company	QS/3
		15-16 / 8.2	Add inform Certification Body in Level 3	QS/3
14	7 Jun 21	<p>6 / 2</p> <p>10 / 6</p> <p>15 / 8.2</p> <p>29 / 11.3</p> <p>34 / Appendix A 2</p> <p>35 / Appendix A 3</p> <p>35 / Appendix A 4</p> <p>36 / Appendix A 5</p> <p>36 / Appendix A 6</p> <p>38 / Appendix A 7.1</p> <p>47 / Appendix A 7.6</p> <p>56 / Appendix A 14</p> <p>59 / Appendix A 16</p> <p>83 / Appendix D 2</p> <p>92 / Appendix H</p> <p>98 / Appendix R</p> <p>100 / Appendix S</p> <p>102 / Appendix U</p> <p>103 / Appendix V</p>	<p>- Changed the Department name of QS & CA</p> <p>- Changed the position of Emergency Response Coordinator to Lead Emergency Management and Fire system specialist to Emergency management Specialist.</p> <p>- Add location of document control and updating on Smart Procedure</p> <p>- update actions on emergency table</p> <p>- Add Thai- MECC agency in Notification and Reporting to Stakeholder.</p> <p>- Changed the contact person to notify PorPor from CA to Emergency Response Coordinator.</p> <p>- Update responsibilities of OSC</p> <p>- Update responsibilities of PU Shift Supervisor</p> <p>- Add position and responsibilities of Emergency Response Team-Leader</p> <p>- Update responsibilities of ERT</p> <p>- Update responsibilities of FTD</p> <p>- Delete specific task "Act as site spoke person".</p> <p>- Update responsibilities of Emergency Response Coordinator (Duty)</p> <p>- Revised communication channel form EOC to REB</p> <p>- Update responsibilities of Staging Officer</p> <p>- Revised the SPRC Assistance to Other Companies and added the flow chart.</p> <p>- Add National Foam Universal Gold 1/3% at Foam Suppliers</p> <p>- Revised number of operation supporter from 4 person to 2 persons</p> <p>- Revised the assembly point.</p> <p>- update the IEAT-MTP Emergency Reporting Form</p> <p>- update the MTP-Port Abnormal situation and Emergency Reporting Form</p>	QS/3

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1. PURPOSE & SCOPE

Purpose

Star Petroleum Refining Public Company Limited (SPRC) Prepare Emergency Response Plan to provides an integrated approach to the management of all emergencies related to SPRC. This response plan details the action, coordination and resources required for the mitigation of an emergency. In the event of an emergency situation, available resources shall be used to achieve the following, in order of priority;

1. Preservation of human life, health and well-being.
2. Protection of the environment.
3. Protection of Company Assets
4. Render affected areas safe and stable.
5. Restoration of disrupted utilities.
6. Resumption of normal production.

Scope

The emergency response plan covers all SPRC operated locations. It also covers assistance to other parties as requested. Emergencies outside SPRC operated Locations (e.g. pipeline Emergencies) should be coordinated with the IEAT Emergency Response efforts.

The following events would be considered as an emergency:

1. A fire or explosion
2. Serious escape of gaseous, liquid hydrocarbons, and Hazardous Material likely to create health, safety hazards and contamination of environment.
3. Oil Spill.
4. The spilling or spreading of a source of ionizing radiation, or the exposure of personnel to harmful radiation.
5. Any event requiring the evacuation of buildings and other working areas
6. A bomb threat or the discovery of suspicious objects.
7. Any event which may harm the company's reputation

Employee Involvement

Process Activities	Employee Involvement	How	Training/ Competency Assurance of the Involved Employees
Response to the emergency situation			
Emergency Response Level 1A (Emergency Activation)	<ol style="list-style-type: none"> 1) Senior Operator of Area affect 2) Emergency Response Team 3) Incident commander 4) Security Shift Officer 	<ol style="list-style-type: none"> 1) Assess the situation that have to mobilize the ERT to response to the incident 2) Communicate via trunk radio (announcement) for the resources need 	Pass the required emergency related training according to the EHS Training Requirement
Emergency Response Level 1B (Emergency Activation)	<ol style="list-style-type: none"> 1) Senior Operator of Area affect 2) Incident commander 3) Emergency Response Team 4) Security Shift Officer 5) Duty Team members 	<ol style="list-style-type: none"> 1) Assess the situation at the scene that need more resource to handle the incident. 2) Communicate via trunk. 3) Call the Duty team by Security Shift officer (via SMS). ERT/EST by SS 	<p>Passed the required emergency related training according to the EHS Training Requirement.</p> <p>Trained the Emergency Response for Duty Rota team</p>
Emergency Response Level 2	<ol style="list-style-type: none"> 1) Senior Operator of Area affect 2) Incident commander 3) Emergency Response Team 4) Security Shift Officer 5) Duty Team members 6) Mutual Aid Team members 7) 	<ol style="list-style-type: none"> 1) Assess the situation at the scene that need more resource to handle the incident 2) Communicate via trunk 3) Call the Duty team by Security Shift officer (via SMS). ERT/EST by SS 	<p>Passed the required emergency related training according to the EHS Training.</p> <p>Requirement.</p> <p>Trained the Emergency Response for Duty Rota team</p>
Emergency Response Level 3	<ol style="list-style-type: none"> 1) Senior Operator of Area affect 2) Incident commander 3) Emergency Response Team 4) Security Shift Officer 5) Duty Team members 6) Mutual Aid Team members 	Full scale emergency, which required more resource to be made available from refinery personnel and other Mutual Aid and Activate the Rayong Province Emergency Response Plan	Same as above

Process Activities	Employee Involvement	How	Training/Competency Assurance of the Involved Employees
Notification and Reporting to Stakeholder			
Notification and reporting to stakeholder- Abnormal situation	1) Environmental 2) CA Department 3) Security Shift officer (off-hour)	1) Telephone and IEAT Notification form (within 10 mins-via fax/Email)	Not required
Notification and reporting to stakeholder in case of emergency	1) External affair duty- Relevant authorities and communities 2) Nurse on Duty- Contract hospital 3) ERC Duty-Rayong Province 4) Duty Manager- Shareholder	1) Telephone and IEAT Notification form (within 10 mins-via fax/Email) 2) Telephone 3) E-mail	Not required
Mutual Aid and Assistance to Third Party			
Assistance to SPRC	1) Mutual aid group (EMAG) 2) Shift Security officer 3) On Scene Commander	1) Contact via telephone with resource required by the Security officer 2) Coordinate with the On Scene when arrival	Mutual aid group members
SPRC Assistance to other companies- Agreement Companies	1) Shift Supervisor on duty 2) ER Coordinator or Emergency management specialist.	1) Coordinate via telephone or trunk radio 2) Provide support according to the agreement or under decision of Shift Supervisor if there is any plant constraint	Not required
SPRC Assistance to other companies- Non agreement companies	1) ER Coordinator 2) Duty Manager 3) Shift supervisor on duty 4) Security Shift Officer	1) Coordinate and cooperate via telephone or trunk radio 2) Consider the plant constraint by Shift supervisor on duty 3) Get approval from Duty Manager which propose by the ER Coordinator	Not required

Process Activities	Employee Involvement	How	Training/Competency Assurance of the Involved Employees
Emergency Exercise			
Set up yearly ER master plan	Emergency Management Specialist and Area owner (PUs Process instructors)	Review; • Shift work schedule • Incident in the past (internal/External) • Past exercise scenario	Work position (Seniors) and exercise
Exercise master plan review and endorsement	QS/3, PUs Shift Supervisor and Area owner	E-Mail (circulation feedback)	Note required See details in the Emergency Response Exercise Guidance (EHS-OT-QS-3005)
Exercise preparation	Emergency Management Specialist	Meet with area owner for the scenario	Not required
Conduct the exercise and report the result	Emergency Management Specialist and Emergency Response Team	Table top exercise and field exercise	Not required
Post review	QS/3 Team and emergency response team	Evaluation and post exercise review meeting	Not required
Record keeping & Follow up	Emergency Management Specialist and whom may concern	Follow up meeting/Email (Exercise report form)	Not required
Fire Fighting Equipment Inspection Master Plan			
Set up yearly Fire Fighting Equipment Inspection	Emergency Management Specialist and fire service contractor	Review the past inspection record and schedule Applicable requirement (procedure/legal)	Education back ground/Experience on fire inspection/testing (Contractor)
Inspection master plan review	QS/3, Emergency Management Specialist, Supervisor and Area owner	E-Mail (circulation feedback)	Not required
Conduct the inspection and testing	Emergency Management Specialist, Area owner and fire service contractor	Field audit and inspection	Education back ground/Experience on fire inspection/testing (Contractor)
Record keeping & Follow up	Emergency Management Specialist and whom may concern	Follow up meeting/Report/E-mail	Not required

GLOSSARY

The following terms are used throughout the Emergency Response Plan and have the meanings given below:

Alarm	There are 3 emergency alarm levels for both sites as follow; Level 1 Wail tone for 15 second follow by announcement. Level 2 Second Wail Tone for 15 second Level 3 Third Wail Tone for 15 second All clear 15 seconds of Steady Tone
CCB	Central Control Building is located at PN
EMAG	Emergency Mutual Aid Group, including 9 companies (13 Units) in IEAT-MTP area. There are SPRC, PTTGC-6, PTTGC-2, PTTGC-3, PTTGC-4, PTTGC-5, ROC, TPE, VNT, <u>Covestro (Thailand)</u> , PTT (Gas Separation Plant), IRPC and MOC.
Emergency	A situation in which fire, explosion, Material damage, Destruction, or other circumstances threaten human life, the refinery's operation, company assets, business or environment.
EOC	Emergency Operation Centre
ERP	Emergency Response Plan.
ERC	Emergency Response Coordinator
ERT	Emergency Response Team
EST	Emergency Support Team
FIT	First Intervention Team
IC	Incident Commander
IEAT	Industrial Estate Authority of Thailand
IEAT-MTP	Map Ta Phut Industrial Estate Authority of Thailand
MC	Mutual aid Coordinator
MCB	Marine Control Building
MTP Fire brigades	Map Ta Phut Fire Brigade
OSC	On Scene Commander
PN	Production Unit
PD	The areas of Tank Farm and TTLT
RSO	Radiation Safety Officer
TTLT	Tank Truck Loading Terminal
CMP	Crisis Management Plan
CMT	Crisis Management Team
THAI MECC	Thai Maritime Enforcement Command Center

2. DOCUMENT CONTROL AND UPDATING

Controlled copies of the Emergency Response Plan are documented and maintained in the following locations:

- SMART PROCEDURE
- EDMS
- Holders at various locations (see distribution list page 1).

The Emergency Response Coordinator reviews the Emergency Response Plan when there are substantial changes in the document. The Emergency Response Coordinator controls the Emergency Response Plan by:

- Maintaining controlled copies of the Plan in EDMS
- Revising the Plan to comply with the changes in documentation
- Notifying the revision of the Plan to all duty team and distribute controlled revised copies to the holders.

3. EMERGENCY LEVEL

State of Emergency

This section defines the levels of emergency and the resources required for emergency situations of increasing severity.

The following levels of emergency have been defined;

Level 1A

An emergency, which can be handled by personnel available already on site and requires no additional resources to be called in.

Level 1B

An emergency, which will require some additional resources to those currently available in the refinery. This would be the SPRC Duty Rota Team, ERT or EST Team

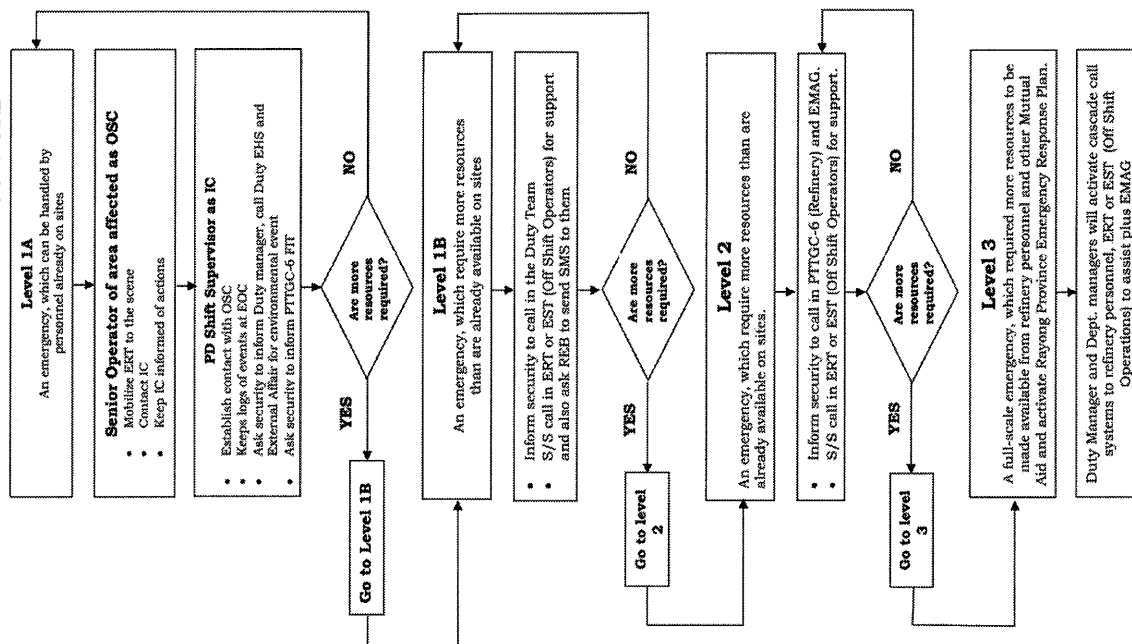
Level 2

An emergency, which will require some additional resources more than SPRC team. This would be the third-party mutual aid teams (EMAG,)

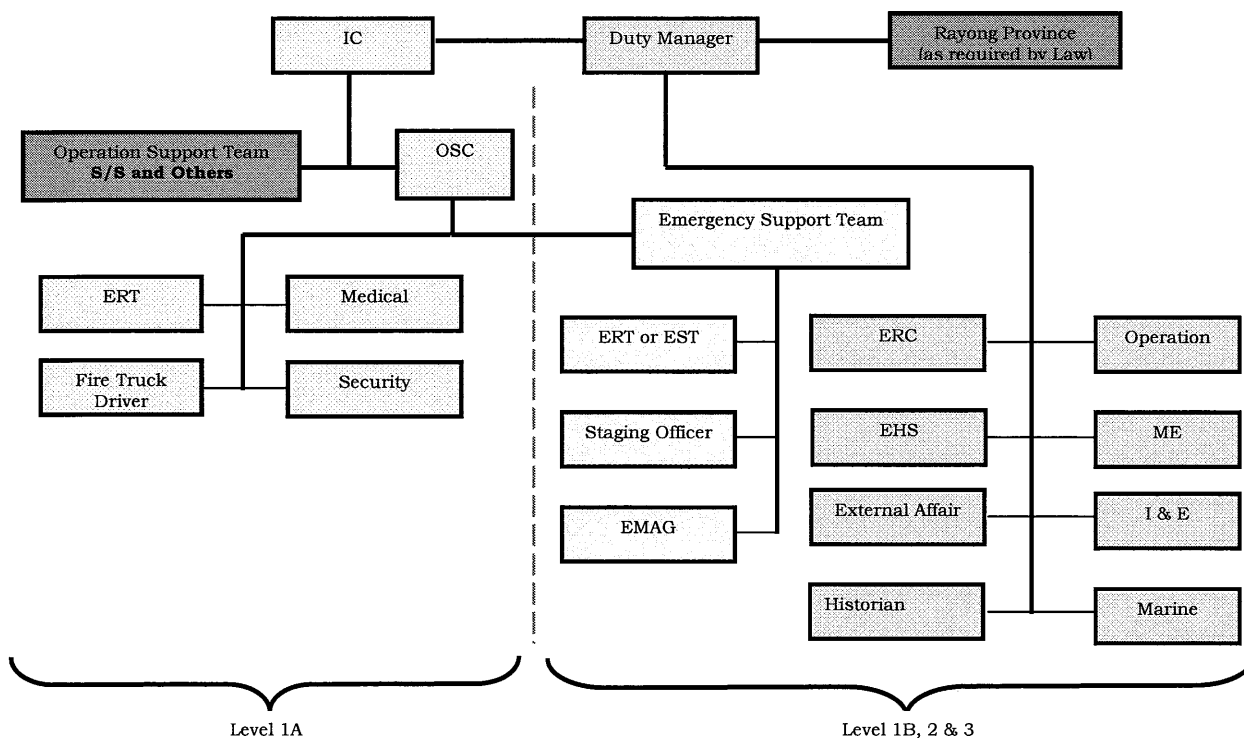
Level 3

A full-scale emergency which requires further resources to be made available from company personnel, other mutual aid teams, Map Ta Phut municipality and Rayong Province support team.

5. EMERGENCY RESPONSE DECISION PROCEDURE



4. EMERGENCY RESPONSE ORGANISATION OVERVIEW



6. ACTIONS ON EMERGENCY

Actions by	Level 1A	Level 1B	Level 2	Level 3
Authority to signal	Anyone in the refinery		On Scene Commander	On Scene Commander
Observer	<ul style="list-style-type: none"> Radio by Push emergency button. Telephone 7191 Give the name and position, company. Give location and nature of incident. 			
Incident Commander (IC) (PD Shift Supervisor on shift)	<ul style="list-style-type: none"> Switch radio to Emergency Channel Go immediately to EOC and assume as IC 	As for Level 1A Plus Coordinated with Duty Team	As for Level 1B	As for Level 1B
On Scene Commander (OSC) (Senior Operator of area affected)	<ul style="list-style-type: none"> Ask for ERT by radio Go immediately to the scene of the incident and assume the role of OSC. Set up the forward command post. Communicate with IC on Emergency channel. Cooperate with board man for plant condition Supervise ERT leader to control and secure the incident 	As for Level 1A Plus Communicate with IC who is at EOC on Emergency channel	As for Level 1B Plus Coordinated with EMAG-OSC	As for Level 2 Plus Coordinated with EMAG-OSC, Government-OSC
Shift Supervisor of affected area	<ul style="list-style-type: none"> Switch Radio to Area channel / Emergency Channel Make a decision unit shutdown agreement with OSC followed Leak response protocol. Control Emergency Shutdown procedures Consider to inform Off shift operator to aware 	As for Level 1A Plus <ul style="list-style-type: none"> Call in off shift to support ERT, shut down activity 	As for Level 1B	As for Level 1B
Emergency Response Team (ERT) (Assigned operators)	<ul style="list-style-type: none"> Switch radio to Emergency Channel Go immediately to the scene of the incident as directed by OSC. 	As for Level 1A	As for Level 1B Plus Coordinated with EMAG-	As for Level 2 Plus Coordinated with EMAG-Government agency

Actions by	Level 1A	Level 1B	Level 2	Level 3
ERT-B Level One B / Two / Three Off Shift Ops.		<ul style="list-style-type: none"> Get together at Fire Station and get ready to go to the scene as requested by OSC. 	As for Level 1B	As for Level 2
ERT-B from EMAG			Report at Staging area	
ERT-B from Government agency				Report at Staging area
Fire Truck Operator (Assigned Ops.)	<ul style="list-style-type: none"> Switch radio to Emergency Channel Nominated drivers to take the fire truck to the scene of incident as requested by OSC 	As for Level 1A	As for Level 1A	As for Level 1A
Security (REB)	<ul style="list-style-type: none"> Activate the Emergency Alert System as requested by OSC Call out ERT team, if required by OSC. Alert ERT EMAG Provide support as requested by OSC SMS to Duty Team and all off shift operator to alert and stand by 	<ul style="list-style-type: none"> Call in duty teams and Mutual Aid team requested by OSC. 	<ul style="list-style-type: none"> Activate the Emergency Alert System Call the refinery personnel and mutual aid team as requested by OSC 	<ul style="list-style-type: none"> As for Level 2 Activate the Emergency Alert System
Panel man of affected area	<ul style="list-style-type: none"> Monitor operation of units from CCB. Initiate emergency shutdown procedure as instructed by Shift Sup./ Operation Procedures. 	As for Level 1A	As for Level 1A	As for Level 1A
Medical Team	<ul style="list-style-type: none"> Provide first aid as requested by OSC. Evacuate by ambulance as needed. 	As for Level 1A	As for Level 1A	As for Level 1A
Staff and contractors not involved in emergency response and operations.	Personnel in All operational area must proceed to the nearest safe assembly point, unless directed otherwise by the emergency response team.	As for Level 1A	As for Level 1A	As for Level 1A

7. COMMUNICATION METHODS

Communication to all SPRC personnel and contractor

Emergency situation will be communicated to all personnel by using an Emergency Alarm. There are 3 emergency alarm levels as follow:

- Level 1** **Wail Tone for 15 second follows by Public Announcement by REB**
- Level 2** **Second Wail Tone for 15 second follows by Public Announcement by REB**
- Level 3** **Third Wail Tone for 15 second follows by Public Announcement by REB**
- All Clear** **Stead Tone for 15 second follows by Public Announcement by REB**

- ♦♦ The communication of an emergency level 1, 2 and level 3 or incident which has significant impact on operation or affect public will be emailed to all SPRC personnel by Duty Manager within 24 hours, which is a similar information reported to Shareholders.
- ♦♦ In the event of Emergency form Neighboring Companies, **which affects SPRC** such as toxic gas release, or incident that occur with the adjacent neighboring company. The communication to all SPRC personnel will be made by using Public Announcement **immediately** after becoming aware of the incident. After that, the Duty Manager will communicate the incident information by email to all SPRC personnel as soon as the information is available, but no later than 24 hours

Communications to related Emergency Response Parties will be by following methods.

Groups	Communications
On Site OSC and ERT Incident Commander Shift Supervisor Security Shift Officer Operations Medical Centre All other Group	Radio: Emergency Channel. Messengers Radio: Emergency Channel Messengers Radio: Normal Channel for Operation/ Emergency Channel Radio: EHS Channel / Emergency Channel Phone: 7090, 7191 Radio: Normal Channel for Operations Radio: EHS Channel / Emergency Channel Phone: 7777 Telephones, Messengers
Call In Duty Rota Team ERT & EST-B - Level 1B, 2, 3 On Shift Operations from other area EMAG Government Agency All other SPRC Personnel Mutual Aid	Short Message Service (SMS) and following by mobile and/or home phone to ensure that the duty team members are acknowledged. Level 1B, 2, 3 : Telephone by Shift Supervisor as priority and back up by SMS sending from REB Level 2: Trunk and Hotline via Security REB Level 3: Telephone via Security REB Telephone by Cascade calling system (It is responsibility of Dept. Managers or their duty persons to call their own staff) Telephones (refer to Appendix P: Emergency Telephone Numbers) FYI, Emergency Level 1A at.... (Location) 2222 Level 1B Emergency goes to EOC immediately. 2222 M Level 2 Marine Emergency goes to MCB immediately 3333 Level 3 Emergency goes to EOC immediately. 3333 M Level 3 Marine Emergency goes to MCB immediately 9999 Emergency group test, phone 038 699090 0000 All Clear.
Short Message Service (SMS) Codes	

All other radio communication must be kept to minimum and only use for URGENT messages.

8.2 Notification and Reporting to Stakeholder

In case of abnormal situation, emergency level 1A, 1B, 2, 3, Duty Manager shall ensure that the following stakeholders be notified:

Stakeholders Situations (2)	IEAT (EMCC) ⁽¹⁾ (require periodically update)	IEAT- MTP Port, Marine Dept	MTP Municipality	Rayong Province	Contract Hospitals	Neighboring community/ Company defined in the External Contact List (AM-OT-PA-012)	CVX	CB Certification Body (3)
Abnormal situation which could impact internal and external Environment and communities; - Sound from abnormal operation - light and heat from flare - Nuisance smell	✓	-	✓	-	-	✓	-	-
Emergency Level 1A, 1B	✓	In case of occur at marine terminal. The Oil spill case at SPM will notify to Thai MECC	✓	-	In case of injury and need transfer to hospitals	✓	-	-
Emergency Level 2	✓		✓	✓		✓	✓	-
Emergency Level 3	✓		✓	✓		✓	✓	✓

Note:

- (1) EMCC is Environmental Monitoring and Control Center located at IEAT Map Ta Phut Office. Abnormal situation which result to an emergency situation shall notify to the IEAT-MTP (EMCC) within 10 mins (refer to the form in Appendix V&W).
- (2) If the situations occur is resulting to the Emergency Shutdown, the responsible person is required to notify to the IEAT (EMCC) within 10 minutes after aware of the emergency shutdown.
- (3) Ms. Pavinee Sittikomkul (Operation Manager) SGS (Thailand) Limited, Certification and Business Enhancement, Tel. +66 2 6781813 Ext. 2065 Email: pavinee.sittikomkul@sgs.com
- (4) Thai MECC : Thai Maritime Enforcement Command Center ศูนย์บัญชาการเรือไทยประมง โทร. 095-8620506

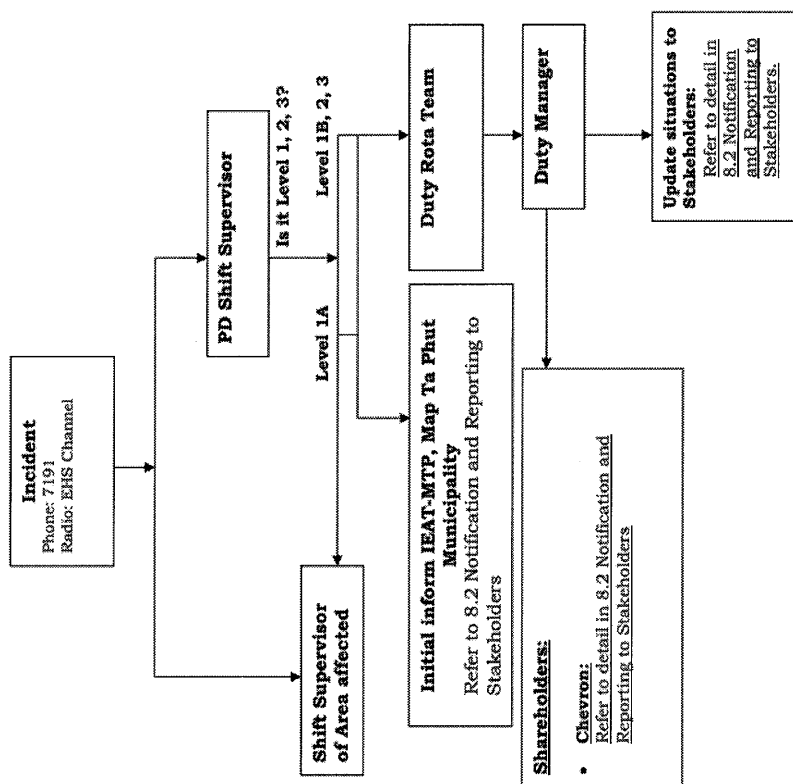
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8. NOTIFICATION AND REPORTING

8.1 Notification Flowchart



Situations	Notified By	Stakeholders	Contact channels
Abnormal situation; - Sound from abnormal operation - Light and Heat from flare - Nuisance smell	On-Hour: Environmental Specialist	IEAT-MTP (EMCC)	Duty phone: 081-732-3485, Phone:038-683933 Hotline: 1504, Trunk: EMCC Channel Fax: 038-685756 Email emcc.ieat@gmail.com
	Off-Hour: SSO	MTP Municipality	Phone: 038-685191 Radio:162.550 MHz
	CA Department	Communities	Defined in External Contact List (AM-OT-CA-012)
	On-Hour: CA Department Off-Hour : SSO	Companies	Defined in External Contact List (AM-OT-CA-012)
Emergency Level 1A, 1B	Same as abnormal situation which could impact internal and external environment, community and neighboring company.		
Emergency Level 2, 3	External Affair Duty	IEAT-MTP (ECC)	Duty phone: 081-732-3485, Phone:038-683933 Hotline: 1504, Trunk: EMCC Channel Email emcc.ieat@gmail.com Fax: 038-685756 (refer to IEAT-MTP Reporting Form Appendix U)
		MTP Municipality	Phone: 038-685191, Radio:162.550 MHz
		MTP Port	Phone: 038-683305-8, Fax:038-683309 (refer to MTP-Port Reporting form Appendix V)
		Communities/Companies	Defined in External Contract List (AM-OT-CA-012)
		Thai MECC (In case of Oil Spill)	Phone 095-8620596
	Nurse on Duty	Contract Hospital	Defined in Emergency Telephone Number (EHS-OT-QS-3003)
	ERC Duty	Rayong Province	PorPor Rayong 089-9696765 Rayong Welfare 065-5078682 Email rayong@labour.mail.go.th
	Duty Manager	Shareholder (CVX)	If require assistance contact to Chevron Emergency Information Center : (+1)-510-231-0623
		Shareholders (BOD)	Draft the notification for CE to send to Board of Directors (BOD)(1).
		CB Certification Body	Ms. Pavinee Sittikomkul (Operation Manager) SGS (Thailand) Limited, Certification and Business Enhancement, Tel. +66 2 6781813 Ext. 2065 Email: pavinee.sittikomkul@sgs.com
		SPRC staff (All)	By e-mail

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		Mailboxes)	
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Note;**(1) Using of notification template;**

1. I am required to notify you of an incident that occurred on (date) at (time) at (location).
2. One sentence description of incident
3. One sentence description of impact
4. One or two additional paragraphs should address authorities notified, other organizations involved, current status, and current actions being taken.
5. Close with the identity of the individual sending the notification, the reporting unit, and contact information for follow-up questions including cell or home phone numbers.
6. Any additional detail, if desired, can be in attachments.

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8.2.1 Labor law (Safety Occupational Health and Working Environment Act (B.E2554)

In case of Hazardous chemical release or fire or explosion, the following actions are required;

- 1) In case of the incident resulting to fatality case, shall notify to the department of Labor Protection and Welfare (Rayong) via telephone, fax or other channel immediately and formal letter within 7 days.
- 2) In case of the incident resulting to operation shutdown or cause injury from both fire or explosion, shall notify to the department of Labor Protection and Welfare (Rayong) via telephone, fax or other channel immediately and formal letter within 7 days.

The formal letter shall comply with the notification of Department of Labor Protection and Welfare (refer to Appendix T- The Reporting Form to the Labor Protection and Welfare)

8.2.2 Factory Law (B.E. 1992)

It is required that any incident which cause fatality or lost time injury or illness (> 72 working hours lost) or cause operation shutdown (> 7 days) be reported in a letter to Ministry of industry Officers (Rayong Industrial Work Office) within 3 days

In case of Radiation incident shall immediately inform to the Ministry of Industry when become aware of an incident.

8.2.3 EIA Mitigation Measures

In any situation which could impact environment will notify to Office of Natural Resource and Environment Policy and Planning and the Office of Natural Resource and Environment Rayong.

8.2.4 Radiation Safety Law (Ministry Regulation B.E.2550, Permission of Radiation)

In case of radiation incident resulting leak of radiation source, the company Radiation Safety Officer (RSO) shall notify to the Office of Atomic For Peach immediately.

9. CRISIS MANAGEMENT AND BUSINESS CONTINUITY PLAN**9.1 Objective**

SPRC Crisis Management and Business Continuity Plan is aimed to provide a management process in order to strategically plan, direct and coordinate all actions and responses to reduce impact of crisis on people, environment and company business and reputation

The plan is developed to respond the crisis in a timely and coordinated manner to support the SPRC Emergency Response plan; and manage crisis to ensure business continuity

Note:

Crisis: Any incident that poses an actual or potential threat to SPRC's long-term ability to do business due to impact on its reputation and standing, legal and financial liabilities and ability to operate

9.2 Activation and Deactivation of SPRC-CMP**9.2.1 Activation**

Duty Manager with the consultation with Chief Executive Officer, will partially or fully activate SPRC-CMP depending on the necessary management efforts required for such crisis.

9.2.2 Deactivation

Duty Manager will deactivate the SPRC-CMP when he feel that all issues are addressed to the extent that the incident is no longer a threat to health, to safety and the environment; and there is no significant on the image of SPRC and Shareholders.

9.3 SPRC Crisis Management Team (CMT)

All Leadership Team Members (LT) are the member of the team. When SPRC-CMP is activated, the team will be met at M-226 Board.

9.4 Roles & Responsibilities of SPRC Crisis Management Team

The scope and extent of crisis management tactical and strategic actions carried out by the SPRC-CMT will depend on the nature and potential or actual consequences of the incident

In general terms, the SPRC CMT is to:

♦ Provide technical, logistic, legal, human resources, corporate affairs and financial support and assistance to the emergency response and management efforts.

♦ Identify the short and long-term strategic implications of the incident for the operability, image and commercial position of SPRC business.

- ♦ Develop, resource and action appropriate strategies to limit potentially adverse consequences to the business arising from the incident.
- ♦ Provide information and recommendations on incident related policy and strategic issues to the Shareholders.
- ♦ Develop and implement a long-term recovery plan.

Individual SPRC CMT members have specific responsibilities. Overall, the SPRC CMT is responsible for minimizing impacts and managing a rapid recovery by:

- ♦ On activation, establishing and assessing the situation caused by the incident and the initial effects on personnel and operations. Investigating all other facets of the incident: technical, financial, human resources, legal, corporate affairs, commercial and business.
- ♦ Identifying and analysing the short and long-term strategic implications of the incident for the operability, image and commercial position of the SPRC business.
- ♦ Establishing and maintaining coordinated and secure communications links with the affected entity and the Shareholders (if activated);
- ♦ Developing, resourcing and implementing appropriate tactics and strategies to limit potentially adverse consequences to the business arising from the incident, particularly those concerning in-country media, government and other public affairs matters.
- ♦ Liaising with the Emergency Response Organization; providing tactical and strategic support and monitoring that local emergency response efforts to follow the policies and strategies for managing the incident established by the SPRC CMT.
- ♦ Identifying other stakeholders and the consequences for them.
- ♦ Developing and coordinating a strategy to effectively manage internal and external communication flows; including those with stakeholders such as shareholders, customers, contractors and suppliers.
- ♦ Providing support to SPRC personnel and next of kin on all matters.
- ♦ Information management and security; and sharing within the team information accumulated during interactions with the affected entity and other stakeholders.
- ♦ Collecting, collating and securing all documentation related to the incident, which is generated by the SPRC CMT and support activities.
- ♦ Supporting in the planning and implementation of the recovery phase.

Preparation of post-incident reports assessing the effectiveness of the SPRC CMT's response and the institution of procedural (or other) Changes in the SPRC Emergency Response Plan, if necessary.

9.5 Schedule of Authority

The schedule of authority prescribes the approval limits for SPRC-CMT members who can approve cash and credit purchases during the crisis. This is in accordance with the Manual of Delegated Authorities (MODA).

10. Leak Response Guides Decision

10.1 Objective

This Leak Response Protocol attempts to mitigate risk in responding to leaks by providing additional guidance to Operations and bringing standardization to leak response decision-making.

10.2 Scope and Definition

A "leak" is defined as an unexpected loss of primary containment which has a potential to have a negative impact on operations, the safety of employees, and/or the environment.

Incidental releases of hazardous substances where the substance can be absorbed, neutralized, or otherwise controlled at the time of release by employees in the immediate release area, or by maintenance personnel, are not included.

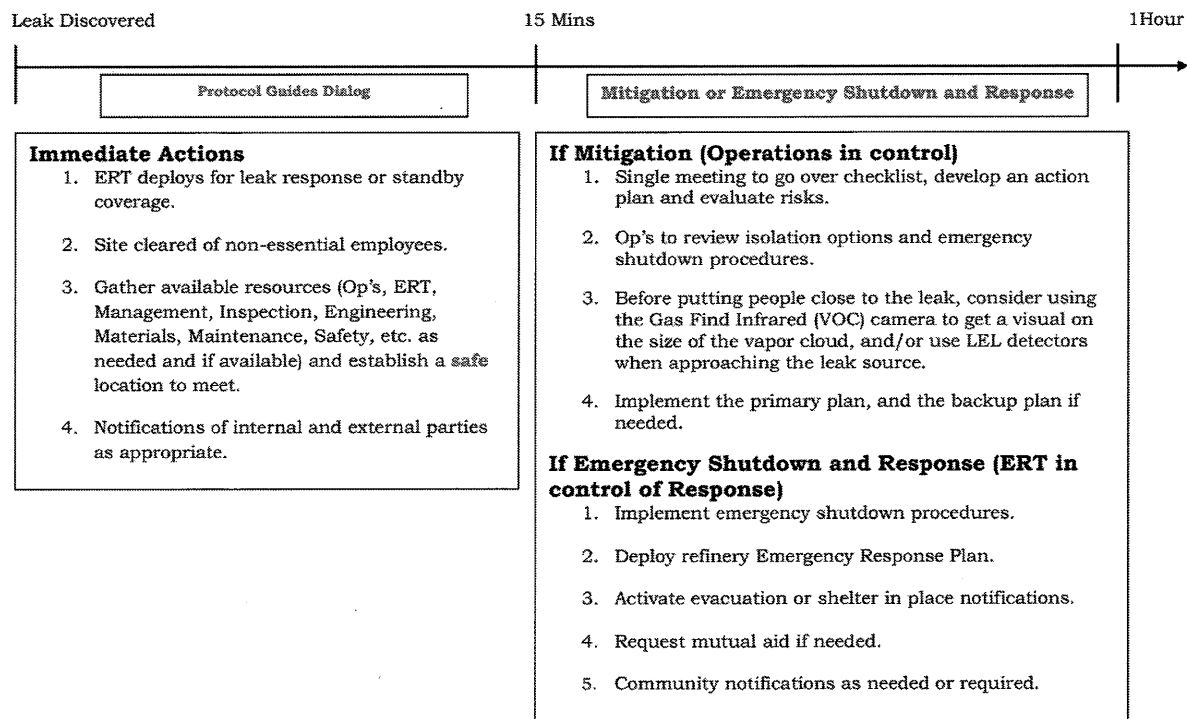
10.3 Overview

If there is any doubt about what to do, shut down the plant or move it to a safe condition.

If there is no time to review options, shut down the plant or move it to a safe condition. In some cases it may not be immediately clear what action should be taken to best protect people, the plant and the environment.

If there is time to review options, get all available parties together in a meeting so all issues and concerns can be considered. After all the inputs have been gathered, develop an action plan, make sure it is clearly communicated to everyone involved, and then move forward to implement it. Utilize the Leak Response Protocol and Leak Response Flow Chart to guide the decision-making.

10.4 Leak Response Timeline

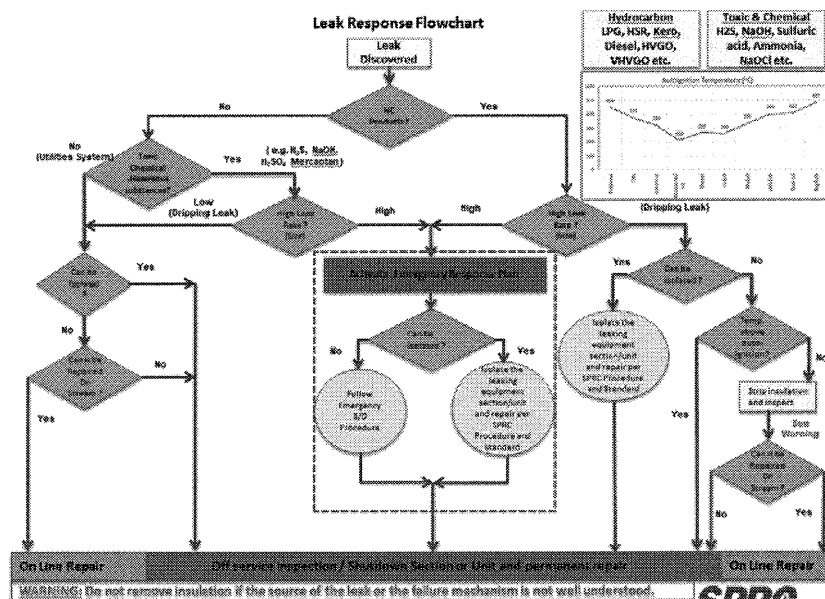


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10.5 Leak Response Flow Chart



More details about the Leak Response Protocol is refer to EHS-WI-QS-3013_Leak Response Protocol [EHS-WI-QS-3013 Leak Response Protocol](#)

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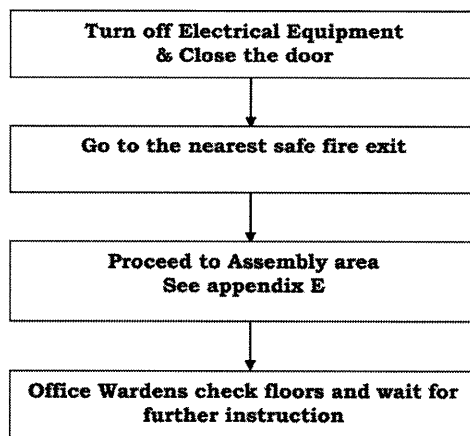
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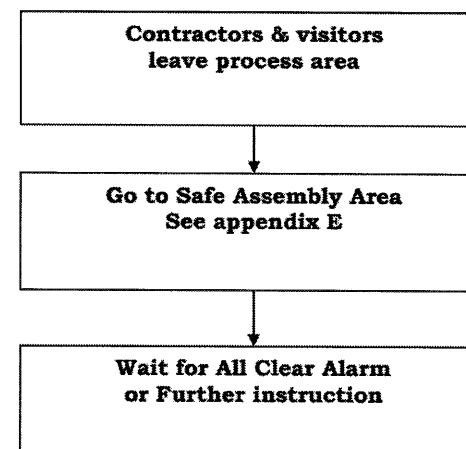
11. EVACUATION PROCEDURES**11.1 In case of Fire:****11.1.1 Actions for Building Evacuation in case of Fire in Building**

1. Pull the fire alarm switch or break the fire break glass
2. Calling Security Office at 7191 to state your name and location of the fire
3. Extinguish the fire if you have had fire training and you think you can do
4. Switch off electrical equipment if time permit and close the door (do not lock)
5. Evacuate from the building by using the nearest fire exit
6. Proceed to assembly area, report to your Office Warden and wait for further instruction

Do not stay away or re-enter a building prior receiving the advice from Office Warden or Public Announcement made by REB

Action on Building Fire Alarm**11.1.2 Actions for Other Working Areas Evacuation in case of Fire in other working area**

1. The personnel in the area of the alarm, who are not essential to emergency response or operations, must immediately stop work and go to the nearest safe emergency assembly area.
2. Evacuations must take place across wind away from fire incident.
3. It is the responsibility of the supervisors to account for their own personnel.
4. Personnel must remain at the assembly area until the " All Clear " has been sounded, or unless directed otherwise by emergency personnel.

Action on Refinery Alarm

11.2 In case of Smell or Toxic Gas Leak:

(from both SPRC internal incident and Neighboring Company Incident)

In the event of emergency caused by the smell or toxic gas leak from both SPRC internal source and neighboring company, which affects to personnel in SPRC premises, the incident can be classified into 2 levels;

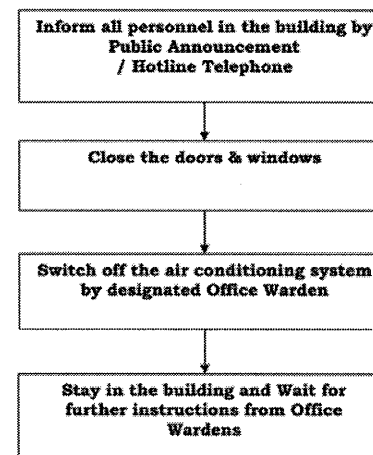
- Level 1** Only information of incident, do not need evacuation of the personnel.
- Level 2** The incident becomes more serious and the personnel on the affected area need to be either sheltered-in-place or evacuated.

11.2.1 Actions for Building Occupants**LEVEL 1**

- On 1) receiving an emergency call from incident's company or IEAT-MTP or 2) notification from SPRC personnel in the field, the Security at REB will inform Shift Supervisor of affected area and Duty Manager
- Security at REB informs personnel in the affected building by Public Announcement or Hotline Telephone to stay in the building – Do Not Panic.
- Office Warden will prepare evacuation in case of evacuation needed.
- Office Warden keeps update on situation until situation is back to normal.

LEVEL 2

- On 1) receiving an emergency call from incident's company or IEAT-MTP or 2) notification from SPRC personnel in the field or, 3) detecting the smell inside the building, the Security at REB will inform Shift Supervisor of affected building(s) and Duty Manager. **Then, activate Emergency Level 2**
- Security at REB will inform personnel in the affected building by Public Announcement or Hotline Telephone.
- Shift Supervisor of affected area will assign Senior Operator to be OSC.
- OSC will cooperate with Office Warden to respond the incident either Shelter-In-Place or evacuate the personnel in the building to the safe assembly area depending on the situation.
- OSC will be informed of the current situation via Security at all time until the situation is back to normal.

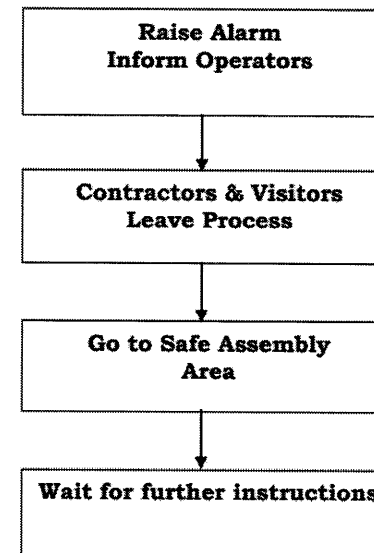
Action Steps

11.2.2 Actions for Personnel in Other Working Areas**LEVEL 1**

- On 1) receiving an emergency call from incident's company or IEAT-MTP or 2) notification from SPRC personnel in the field, the Security at REB will inform Shift Supervisor of affected area and Duty Manager
- Shift Supervisor will consider the action according to the information provided.
- Shift Supervisor will prepare evacuation in case of evacuation needed.
- Shift Supervisor keeps update on situation until situation is back to normal.

LEVEL 2

- On 1) receiving an emergency call from incident's company or IEAT-MTP or 2) notification from SPRC personnel in the field, the Security at REB will inform Shift Supervisor of affected area(s) and Duty Manager. **Then, activate Emergency Level 2**
- Shift Supervisor will assign Senior Operator to be OSC.
- OSC will evacuate the personnel of the affected areas to the safe assembly areas. Evacuation must take place across the wind direction.
- OSC will assign the operators with SCBA to the unsafe assembly areas in order to direct the people to the safe assembly areas
- OSC will be informed of the current situation via Security at all time until the situation is back to normal.

Action Steps**11.3 Neighbouring Community/Company Notification**

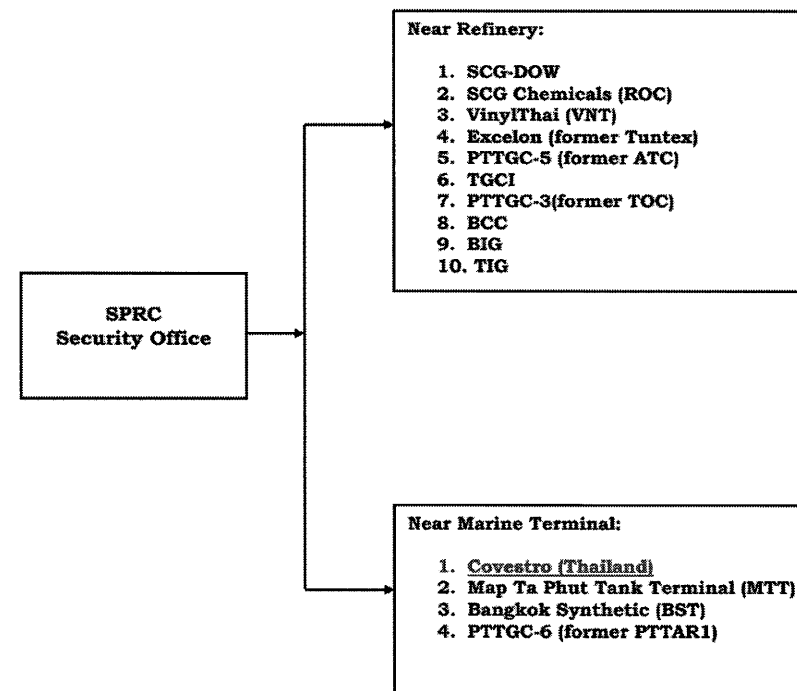
When emergency and abnormal situation which could effect to neighboring community /company, SPRC shall notify to the community leader or his deputy and company contact person refer to External Contact List (AM-OT-CA-012) for early aware refer to 8.2 Notification and Reporting to Stakeholder.

When a community evacuation is recommended, Map Ta Phut Fire Department and the Rayong Disaster Prevention and Mitigation office (PorPor) will be notified by Emergency Response Coordinator during on hours and Shift Security Officer during off hour. The Map Ta Phut Fire Department and the Rayong Disaster Prevention and Mitigation office (PorPor) will provide evacuation information. The Rayong Disaster Prevention and Mitigation office (PorPor) will then supervise the community evacuation with liaison with local police officials. **The Provincial Emergency Response Plan has to be activated.**

11.4 Emergency Contact Points In Case of Neighbouring Company Incident

(Smell or Toxic Gas Release Incident)

Below is the list of companies which have a possibility to affect SPRC once their operation upset.



12. DEACTIVATION AND RECOVERY

12.1 Deactivation

The authority for deactivating an emergency response is vested in the On-Scene Commander who will consult with the Incident Commander. Deactivation should begin when it is considered that the emergency has been contained, and satisfactorily overcome in all respects.

The activities and procedures which must be undertaken to **recover** from an emergency incident includes, but is not limited to:

- ☐ The cleanup, maintenance and testing of equipment.
- ☐ The re-commissioning of facilities, plant and equipment.
- ☐ The replenishment of stocks (such as, firefighting foam, spill cleanup materials, replacement parts).
- ☐ The returning of equipment to outside contractors and mutual aid organizations.
- ☐ The accounting for all expenses incurred as a result of the incident.
- ☐ The filing of insurance claims
- ☐ Preparation and dispatch of final reports to relevant Shareholders, Government and local authorities.

12.2 Re-commissioning

Before re-commissioning plant or equipment which may have been involved in the emergency or affected by it, a thorough and detailed inspection must be carried out to ensure that the integrity of equipment has not been adversely affected.

12.3 Incident Investigation

It is the responsibility of the next level of management above the On-Scene Commander to designate the team responsible for performing the appropriate incident investigation. All incidents, which have resulted in the activation of an emergency response, must be investigated.



NOTE: Part of the incident investigation must be devoted to a critique of the emergency response itself. Detailed recommendations for improvements to the Emergency Response Plan and/or to Contingency Plans should be made.

13. POST INCIDENT REVIEW

The Company requires that a post-incident review be conducted to examine the Company's response to the emergency incident.

The Incident Commander or the On-Scene Commander shall convene the review within forty-eight hours of the Incident conclusion. Those attending shall include the Manager Process Safety & QEHS, Emergency Response Coordinator, and all employees who participated in the incident. Minutes shall be kept. The review shall determine:

- ☐ Were employees properly informed of Company procedures?
- ☐ Did employees respond according to Company procedures?
- ☐ Were employee's responses timely?
- ☐ Are the procedures adequate?
- ☐ What problems were encountered during the response activities?
- ☐ What improvements can be made?
- ☐ How can similar events be avoided in the future?

If public emergency services were involved they will be invited to participate in the critique.

All recommendation and feedback received from the post incident review shall be tracked and follow up by Emergency Response Coordinator. The status update of the action items shall kept in the share drive and communicate to all duty rota members. However, the update status of the actions shall be updated at least 2 times/year by incorporating with the exercise feedback highlight update and sharing.

14. APPENDIX

APPENDIX A ROLES AND RESPONSIBILITIES

1. Incident Commander (IC)**Who:** PD Shift Supervisor on shift**Report to:** Duty manager**Location:** EOC (Fire Station)**Emergency level:** 1A, 1B, 2, 3**Roles:** To control all activities during emergency**Responsibilities:** On receiving the emergency alarm:

- ☐ Switch radio to emergency channel
- ☐ Inform PU manager of affected area
- ☐ Set up contact with OSC and inform Security Shift Officer
- ☐ Ensure that the ERT on duty are the person who fit for duty
- ☐ Initiate site head count (Reference Appendix F)
- ☐ Organize and control all activities in the EOC until the Duty Manager arrives.
- ☐ Ensure a log is kept of all activities.
- ☐ Decide with OSC the level of emergency, and initiate call-in.
- ☐ Receive situation reports from the OSC and take appropriate actions.
- ☐ If needed ensure that the fire pump has started and that the fire panel is monitored.
- ☐ Liaise with outside 3rd parties until the communications team is formed.
- ☐ Contact other companies who may be affected by the incident.
- ☐ Arrange for refreshments to be delivered to the incident scene via the EOC Team.
- ☐ Provide regular situation reports to all relevant groups via telephone or messenger.
- ☐ Arrange for relief teams to be sent to the incident scene as required.
- ☐ For external requests for assistance from Mutual Aid Partners, determine if possible to assist and provide Fire Truck driver as circumstance warrant.

The PD Shift Supervisor shall notify Duty Manager, Production Unit manager of affected areas, EHS and External Affairs duty persons if the following incidents occur:

- Injuries requiring hospitalization (transfer to a hospital).
- Oil Pollution.
- Air Pollution.

2. On Scene Commander (OSC)**Who:** Senior Operator of area affected / EST (G/H)**Report to:** Incident Commander**Location:** At the scene of the incident.**Emergency Level:** 1A, 1B, 2, 3**Roles:** To control all activities at the scene of incident.**Responsibilities:** On receiving the emergency alarm;

- ☐ Go to incident scene immediately and consider activate the emergency level.
- ☐ Switch to Emergency channel.
- ☐ Set up a command point (OSC Vehicle) at a safe location, wearing the Full Fire bunker gear, OSC helmet.
- ☐ Assigned the operator drive the OSC vehicle to command post.
- ☐ Establish radio contact with the Incident Commander (IC) and supply situation reports.
- ☐ Account for all personnel at the scene of the incident.
- ☐ Scenario briefing and setup the strategy, tactics, resources to all responders prior go to the incident scene.
- ☐ Assigned the responder record the SCBA & incident log at the OSC vehicle.
- ☐ Control all rescue and first aid activities at the scene of the incident.
- ☐ Apply Leak Response Protocol for unit shutdown.
- ☐ Asked agreement from Shift Supervisor for unit shutdown.
- ☐ Cooperated with boardman for plant condition and emergency shutdown.
- ☐ Establish casualty control area when required.
- ☐ Considered raise or reduce an emergency level.
- ☐ Assess the situation is safe for responding, if the situation is raised to high risk must command ERT-Leader to retract to a safe location.
- ☐ Assigned 2 ERT Leader to lead response the situation (1 person from PN and 1 person from PD)
- ☐ Liaise with mutual aid focal point person when called.
- ☐ Set up Hot Zone and assure personnel have proper PPE
- ☐ Required the HAZMAT Suit in case of toxic/hazardous substance spill/leakage.
- ☐ Request ambulance if needed and arrange for casualty treatment and evacuation.
- ☐ Deactivate the emergency when it is considered that the emergency has been contained, and satisfactorily overcome in all respects with consult IC

Remark the OSC who passed the area cross-training must have well the knowledge of Unit Isolation, Unit Shutdown, and Start-up.

3. Production Unit Shift Supervisor of affected area

Who: Shift Supervisor of affected area on shift

Report to: Incident Commander

Location: CCB or the scene of incident

Emergency Level: 1A, 1B, 2, 3

Role: To control overall plant operation.

Responsibilities:

- ☐ Switch radio to emergency channel
- ☐ Coordinate with IC and OSC
- ☐ Make decision with OSC on plant emergency operation such as shutdown the unit, bypass equipment followed Leak response Protocol
- ☐ Back up IC or OSC
- ☐ Ensure sufficient manpower available, call extra operators if required.

4. Emergency Response Team Leader (ERT-Leader)

Who: 2 persons Assigned by OSC (1 from PN & 1 from PD)

Report to: On Scene Commander

Location: At the scene of the incident.

Emergency Level: 1A, 1B, 2, 3

Roles: Front line Responder at the scene

Responsibilities: On receiving the emergency alarm;

- ☐ Switch radio to Emergency channel.
- ☐ Go to incident scene and report to OSC.
- ☐ Response the incident as directed by the OSC.
- ☐ Control the ERT followed OSC's mission, objectives, and strategy.
- ☐ Keep feedback communication of situation and mission to OSC
- ☐ Ensure all the ERT are safe during response.
- ☐ Ask resources support to achieve the mission, strategy.
- ☐ Assess the situation is safe for responding, if the situation is raised to high risk must command ERT to retract to a safe location.
- ☐ Required the HAZMAT Suit in case of toxic/hazardous substance spill/leakage.

5. Emergency Response Team (ERT)

Who: Nominated on shift operators

Report to: Emergency Response Team Leader

Location: At the scene of the incident.

Emergency Level: 1A, 1B, 2, 3

Roles: Front line Responder at the scene

Responsibilities: On receiving the emergency alarm;

- ☐ Switch radio to Emergency channel.
- ☐ Go to incident scene and report to OSC.
- ☐ Response the incident as directed by the ERT-Leader.
- ☐ Assure proper PPE must be wearied related incident Fire / Chemical Spill case
- ☐ Keep the mission complete safely.
- ☐ Reported to ERT Leader and retract to the safe location if the situation raised to high risk.
- ☐ Act to Rescuer

6. Fire Truck Drivers

Who Nominated on shift operators (PN=1, PD=1), under the control of the OSC

Report to On Scene Commander

Location Fire Station and the scene of the incident

Emergency Level 1A, 1B, 2, 3

Responsibilities

On receiving the emergency alarm;

- ☐ Switch radio to emergency Channel.
- ☐ Requested the safe route and command post location from OSC.
- ☐ FTD 1: Go immediately to fire station and take the first fire truck to the scene of the incident when requested by OSC.
- ☐ FTD 2: Go immediately to the fire station and wait for instructions.
- ☐ Contact the OSC and report location.
- ☐ Operate the fire trucks as directed by the OSC.
- ☐ Competency to operate Fire Truck and able to discharge foam as required.
- ☐ Able to estimate time of foam consumption table when required foam top up.

7. Duty Rota Team

Who 1) Duty Manager,
2) Operation Duty,

- 3) External Affairs,
- 4) EHS,
- 5) Emergency Response Coordinator,
- 6) Historian (Marine),
- 7) Mechanical, and
- 8) Instrument & Electrical Duty Persons

Location EOC (Fire Station).

Emergency level 1B, 2, 3

Roles To support all activities as requested by IC and contact third parties during emergency.

General Responsibilities

- ☐ **First person to arrive must establish contact with Incident Commander and act as Duty Manager until the Duty Manager Arrives**
- ☐ Keep a register of all personnel present.
- ☐ Keep a log of all activities.
- ☐ Ensure all personnel who are not directly involved in the emergency, including personnel at assembly areas, are kept informed.
- ☐ Ensure that a head count is done.
- ☐ Inform shareholders.
- ☐ Prepare a preliminary statement.
- ☐ Report to Authorities in accordance with statutory requirements.
- ☐ Liaise with local, national and international authorities.
- ☐ Liaise with the media.
- ☐ Liaise with local industries.
- ☐ Liaise with the local hospitals regarding any casualties.
- ☐ Answer queries from relatives of staff on site.
- ☐ Control all communications in and out of the refinery.
- ☐ Call on any other specialist organizations as required.
- ☐ Arrange for food and drink for emergency teams.
- ☐ Arrange for extra security.

7.1 Duty Manager

Role

- To handle on-site emergency activity and ensure appropriate emergency procedures are activated. Act as site spokesperson for enquiries, including the media, if required.
- To lead the EOC organization through the emergency, and to manage the activities of the Duty Team, concentrating primarily on strategy development and monitoring management of all activities.

Responsibilities

- ☐ Set up EOC and adjust, as appropriate, as the situation develops.
- ☐ Co-ordinate the efforts of the Duty Team.
- ☐ Take only those decisions, which cannot be delegated.
- ☐ Authorize commitments, deviations from normal procedures, press releases (in conjunction with the Public Affair Manager, the Initial Response Statement is in appendix G), etc., as required.
- ☐ Appoint the Company spokesperson.
- ☐ Ensure that all personnel not directly involved in the emergency are kept informed.
- ☐ Notify IEAT and update on the status.

Specific Tasks

- ☐ Implement site Emergency Response Plan.
- ☐ Notify the CEO, DO and ensure that PN, PD are communicated.
- ☐ Notify to all related stakeholders, (Refer to Section 8.2 Notification and Reporting to Stakeholder) and also communicate to all SPRC Staff by e-mail.
- ☐ Provide a regular update on the status of the emergency to CEO, DO and Shareholders and establish the frequency for update briefings.
- ☐ Maintain a log of important events, commitments, decisions, etc., and pass hourly to CEO and Secretarial Services. Monitor external communications and ensure that these take place at an adequate level of frequency.
- ☐ Set up teams to address the short-term reinstatement or permanent restoration.

Checklist

- ☐ Ascertain what has happened
 - reason
 - scope
- ☐ Establish resources required
 - organization type
 - mobilizes
- ☐ Establish information flow
 - who is the Incident commander
 - injuries/deaths
 - frequency of update reports
 - authorities involved
 - who is spokesperson
- ☐ Establish timetable for;
 - Internal briefing
 - Media briefing (if necessary)
 - Management strategy
- ☐ Commence strategy development

Plus 1 hour

- ☐ Ascertain what has happened.
- ☐ Are resources sufficient and have been notified.
- ☐ Is there sufficient field support.
- ☐ Where is the media activity center?
- ☐ Are all sources of information being monitored.
- ☐ What are the emerging issues?
- ☐ Has a public release been made?
- ☐ Are we supporting the authorities sufficiently?

Plus 5 hours

- ☐ Review what has happened.
- ☐ Review resources (both Emergency Operation Center Team) and determine need to establish shifts.
- ☐ What is our media strategy and is the Company being proactive.
- ☐ What commitments have been made and are deadlines being met.

5 Hours and beyond

- ☐ Every three hours revisit the Plus 5 hours checklist.

DUTY MANAGER

- PRIORITIES:**
1. **Preservation of human life, health and well being**
 2. **Protection of the environment**
 3. **Protection of Company Asset**
 4. **Restoration of disrupted utilities**
 5. **Resumption of normal production**

Aide Memoir Level 1B/2/3 Emergency

1. **Nominate historian**
2. **Consider incident:**
 - ☐ What happened?
 - ☐ Victims? (Fatalities, injuries)?
 - ☐ Personnel missing? (All personnel accounted for?)
 - ☐ Medical assistance required?
 - ☐ Current process status?
 - ☐ Any toxic/radioactive releases?
 - ☐ Weather conditions? (wind direction)
 - ☐ Road barriers set up?
 - ☐ Authorities and/or other outside parties informed?
 - ☐ Time?
 - ☐ Escalation possibilities? (Safety/Health/Environmental)
3. **Consider possibilities:**
 - ☐ What kind of equipment do we need?
 - ☐ Enough personnel available? (ERT in attendance/additional operators for running units/ fitters/instrument technicians?) Any personnel called in?
 - ☐ What kind of extinguishing agents do we need and how much?
 - ☐ Do we need assistance (mutual aid)?
4. **Be in control:**
 - ☐ Think about relief and refreshments for crew.
 - ☐ Keep an eye on drainage systems.
 - ☐ Check procedures, prioritize and delegate.
5. **Notifications**
 - ☐ Shareholders
 - ☐ Authorities
 - ☐ CEO, DO
 - ☐ SPRC Staff
6. **After the incident:**
 - ☐ Think about protection of open flammable and/or toxic products
 - ☐ Think about protection of collapsing structures.
 - ☐ Debrief / interview involved personnel
 - ☐ Maintain / secure incident site for investigation
 - ☐ Deal with emotional stress to employees / families / responders particularly if deaths or significant injuries occurred
 - ☐ Restock emergency response equipment (firefighting, first aid, HAZMAT, PPE)
 - ☐ Check equipment and clean it.
 - ☐ Reload and refuel truck.
 - ☐ Clean protective clothing

7.2 Operation Duty

Report to: Duty Manager

Role

To provide support to Shift Supervisor on all operational matters during emergency when emergency level 1B, 2, 3 at EOC.

To be the Operation Support Team member when emergency level 3

Responsibilities

- ☐ Call in other staff member of Operation Duty.
- ☐ Inform PN/PD as considered appropriate.
- ☐ Be aware of operational requirements and issues during emergency.
- ☐ Provide assistance by operational experience and liaison with the operating units an appropriate plan of action in emergencies. Contact operations personnel that may provide additional information.

7.3 External Affair Duty - Corporate Affairs Issues

Report to Duty Manager

Role

- To provide a link with the Duty Manager on corporate affairs aspects associated with the emergency and establish information flows and timings of briefings.
- To keep an open line of communication with appropriate organizations / national authorities.

Responsibilities

- ☐ To maintain a log of issues and identify key information which is likely to be required by the Emergency Operations Team.
- ☐ In conjunction with the Duty Manager to establish a pro-active media liaison and public affairs strategy.
- ☐ To brief the Duty Manager / CEO on media interest, issues developing and requests from the media for information.
- ☐ To assist in developing/delivering a response to the media as directed by the Duty Manager / CEO
- ☐ Inform appropriate organizations on aspects of the crisis that may affect them.
- ☐ Obtain from affected organizations, information that may be of assistance to the Company.
- ☐ Coordinates and processes to buy additional resources including foods, refreshment, and other facilities to support Emergency Response Team in event of Emergency. These responsibilities can ask support from Mechanical / Instrument & Electrical Duty to help by mobilizes additional resource. The list of vendor/supplier are defined in External Contact List (AM-OT-CA-012)

Specific Tasks

- ☐ Call in other staff members of CA/HR and EA Duty
- ☐ Maintain a log of media activity identifying the line of questioning being adopted by the media and community and issues developing. Pass this information to the Duty Manager /CEO on a regular pre-agreed frequency.
- ☐ Establish contact numbers where the media can call for information.
- ☐ Enact the requirements and requests of the Duty Manager.
- ☐ Prepare media, community, and staff briefing material as requested by the Duty Manager.

- ❑ Check contacts listed in Appendix P (Emergency Telephone Numbers) against the type of emergency being managed, and ensure appropriate liaison links are established and maintained, including precautionary contact.
- ❑ Consider, in conjunction with the Duty Manager, additional organizations with whom liaison should be established.
- ❑ Determine whether liaison officers should be sent to outside organizations and advise the Duty Manager, arrange accordingly.
- ❑ Report regularly to the Duty Manager.
- ❑ Keep a record of contact with authorities and pass to Secretarial Services hourly.
- ❑ Coordinate with CA AD to make the rooms available for presses and media.
- ❑ In case of any tanks fire occurred, inform to the Department of Energy Business
- ❑ To support on cash box and arrangement.

7.4 External Affair Duty - Human Resource Issues

Report to Duty Manager

Role

- To provide advice to Duty Manager on personnel/welfare aspects associated with the emergency, and establish information flows and timings of briefings.
- To provide and maintain appropriate legal advice regarding Human Resources' aspects as required.

Responsibilities

- ❑ To brief the Duty Manager on personnel and welfare issues relating to staff.
- ❑ Maintain a list of personnel on site and the status of casualties.
- ❑ Enact Company personnel policies relating to staff welfare.
- ❑ Co-ordinate with hospitals for the treatment of injured persons provides additional support of required.
- ❑ Ensure appropriate legal advice is available for the Duty Manager when making critical decisions and press releases.

Specific Tasks

- ❑ Call in other staff members of CA/HR and EA Duty
- ❑ Establish a list of personnel on site and forward to the Duty Manager on a regular basis.
- ❑ Establish the names of casualties and forward to the EOC Team and the CEO on regular basis or when significant information becomes known.
- ❑ Identify welfare requirements and seek direction on a response strategy.
- ❑ If required make arrangements to advise or visit the next of kin of any casualties.
- ❑ Arrange for the movement of staff dependents to be with injured employees.
- ❑ Arrange for the co-ordination of grief counseling.
- ❑ Establish the relatives contact numbers at SPRC, and in Bangkok, and advise to staff and relatives so that they can receive information on assistance and status of family members.
- ❑ Monitor the quality of medical treatment being given to injured staff to ensure it is appropriate.

- ❑ Coordinate and ensure the switchboard operator is aware of the incident and fully manned.
- ❑ Make a room and telephones available for answering incoming calls.
- ❑ Ensure that all personnel not directly involved in the emergency are kept informed, including personnel at the assembly areas.

Policy for Notification of Next of Kin

Notification of Death

The responsibility for notification of next of kin lies with the company for staff and with the contractor for contract staff. Any enquiries related to the physical well being of SPRC staff, contractors, etc., will be directed to the appropriate employer.

Every endeavor should be made for a senior representative from the Company to be present when notifying the next of kin.

Notification of Injuries

The responsibility for notification of next of kin lies with the Company for staff and with the contractor for contract staff. Any enquires related to the physical well being of SPRC staff, contractors, etc., will be directed in the first instance to SPRC Management.

- ** No name of injured or death person should be given to the media until it is verified that next of Kin have been informed.**

7.5 EHS Duty

Report to Duty Manager

Role

- Provide advice on EHS related aspects to the Duty Manager, identify reporting and liaison requirements to the Public Affair focal point.

Responsibilities

- ❑ Advise on EHS requirements to assist in the containment of any physical situation.
- ❑ Identify parties (authorities, neighbors) to be contacted or advised of the situation as dictated by statutory and other requirements.
- ❑ Advise to the Duty Manager of any investigation required by authorities and any associated requirements.

Specific Tasks

- ❑ Call in other members of the EHS personnel.
- ❑ Provide technical advice on EHS equipment and other resources to be utilized to control any situation and contain its impact.
- ❑ Advise the requirements under the various EHS regulations and other statutory reporting requirements.
- ❑ Advise to the OSC through IC about suspension of emergency response operation when the scene atmosphere result in a IDLH level and/or to involve an imminent danger condition
- ❑ Advise to the OSC through IC to decrease level of respiratory protection when the air monitoring at the scene result that the situation is safe to decrease level of protection (refer to EHS-SP-QS-0017 Respiratory Protection Program.doc)
- ❑ Provide technical data as is required by the emergency response organization and the Duty Team.
- ❑ Call in the company Radiation Safety Officer (RSO) in case of radiation incident (Khun Suchart B (IR/2) Tel.087-833-8957
- ❑ Keep monitoring and tracking of an injured person and head count details (to update to the Duty Team members)

7.6 Emergency Response Coordinator (Duty)**Report to** Duty Manager**Roles** To provide advice to Duty Manager /OSC on all Emergency Response aspects.

To be member of Emergency Support Team when emergency level 3

Location Emergency Level 1B at the EOC.

Emergency Level 2 / 3 report to Duty Manager and Act to leader of Emergency Support Team also between EOC with Fire Station.

Responsibilities

- ☐ Call in other staff members of ERC Duty.
- ☐ Advise on using all firefighting equipment.
- ☐ Advise the OSC through IC on strategy, objective, tactics, and resources.
- ☐ Brief the situation to ERC member when they arrived.
- ☐ Record the external communication and information.
- ☐ Assign Emergency Response Coordinator member go to incident scene to assist OSC on control activities at the scene if level 2 or 3.
- ☐ Coordinate with Mutual Aid Teams.
- ☐ Assign Emergency Response Coordinator member to be the Mutual Aid Coordinator and Staging Officers when emergency level 2 or 3.
- ☐ Evaluate and calculate the needed resources to control the situation.
- ☐ Coordinate more resources from EMAG and Government.
- ☐ Assigned the QS/31 or QS/32 go to incident scene to assist OSC on level 1B (if required on a working day).

Note: When a community evacuation is recommended, Map Ta Phut Fire Department and the Rayong Disaster Prevention and Mitigation office (PorPor) will be notified by Emergency Response Coordinator during on hours.

7.7 Marine Duty**Report to** Duty Manager**Role**

To provide marine technical and marine pollution advice in general, give support to the Duty manager on all emergencies.

Responsibilities

- ☐ Call in members of Marine Duty.
- ☐ Be aware of the planned ship movements.
- ☐ Give marine technical advice to Duty manager on all marine matters, which are outside the normal operational routine.
- ☐ Advise the Trading Department of ship acceptance criteria for anticipated ship chartering requirements
- ☐ Act as the historian (in case of not related to the marine incident)

7.8 Mechanical / Instrument & Electrical Duty**Report to** Duty Manager**Role**

To coordinate and direct mechanical / I&E maintenance and Logistic Concerns (facilities, foods, etc.) to support Emergency Response Team in event of emergency.

Responsibility

- ☐ Call in other staff members of the Maintenance
- ☐ Assists Duty Manager on logistics / equipment issues.
- ☐ Provide mechanical, electrical and instrument assistance.
- ☐ Assigns work locations and preliminary work tasks to section personnel.
- ☐ Identifies services and support requirements for plan and expected operations.
- ☐ Provide support to External Affair Duty for mobilizing additional resources including foods, refreshment, and other facilities to support Emergency Response Team in event of Emergency.
- ☐ Reviews Incident Action Plan and estimate section requirement for next operation period.
- ☐ Assist in developing a recovery plan.
- ☐ Provide specialized maintenance / construction services as required.
- ☐ Coordinate equipment inspectors as needed.
- ☐ Coordinates turnaround-planning capabilities to assist with the orderly restoration of services.
- ☐ Provide specialized services relating to engineering drawing, documentation of equipment, operational procedures relevant to the process involved.

In event of process plant and /or off sites equipment breakdown, the mechanical /I&E duty person shall do the following additional:

- ☐ Respond promptly (establish verbal response where possible) to a request for assistance from the Operations and determine, as far as possible, the scope of the work and the skill(s) required.
- ☐ Inform the relevant maintenance area supervisor(s) the next working day about detail of maintenance action taken during call out and required follow up action.
- ☐ Inform PN/PD Superintendence Mechanical of serious matters as soon as possible.

8. Operations Support Team**Who** Affected area Manager, off-shift Shift Supervisors, off-shift Senior Operator, Process engineers**Location** CCB**Emergency level** 3**Responsibilities**

Main priority is to support, and take over some of the responsibilities

- ☐ Keep a register of all personnel present.
- ☐ Provide technological to the operating shift.
- ☐ Provide panel assistance.
- ☐ Provide supervisory assistance as requested by the IC/ OSC or operating shift.
- ☐ Provide assistance / relief for the On Scene Commander if requested.
- ☐ Provide assistance for the Incident Commander / On Scene Commander if requested.
- ☐ Assist outside operators to bring plants to a safe condition.

9. Emergency Support Team (Day Staffs)**Who** Maintenance group, Emergency Response Coordinator group**Location** Fire Station**Emergency Level** 2, 3**Responsibilities**

- ☐ **The first person to arrive will establish contact with the IC until the Emergency Response Coordinator arrives. The following responsibilities will be assigned by the Emergency Response Coordinator.**
- ☐ Keep a register of all personnel present.
- ☐ Keep a log of all activities.
- ☐ Assist OSC on control activities at the scene.
- ☐ Advise on using all firefighting equipment.
- ☐ Appoint radio operator and Historian.
- ☐ Collect and register radios as people arrive.
- ☐ Check pool vehicles for availability.
- ☐ Arrange transport for personnel and equipment to go to the incident scene.
- ☐ Provide back up for the ERT at the incident scene as required using trained personnel.
- ☐ Prepare and provide fire-fighting equipment as required from the fire station.
- ☐ Nominate Personnel to assist as Mutual Aid Coordinators.
- ☐ Provide messengers as required by Incident Commander / On scene Commander.
- ☐ Provide guides for outside agencies arriving at the refinery.
- ☐ Assist with traffic control at the main gate and approach roads, as requested by security.
- ☐ Ensure that all communications systems remain operable.
- ☐ Coordinated with REB to Open the workshop and warehouse.
- ☐ Arrange for extra personal protective equipment to be available.
- ☐ Provide transport assistance.

- ☐ Keep all radio transmissions to a minimum.
- ☐ To be the Staging Officers
- ☐ If necessary arrange for 24 hours coverage by splitting team into 2 shifts

All members of this team must bring with them PPE and any radios or pool vehicles assigned to them.

If assigned as the Mutual Aid Coordinator, he will coordinate with Mutual Aid Teams (Refer to Appendix D Mutual AID and Assisting to third parties).

10. Emergency Support Team (EST) PU Operations team**Who** On-shift EST and Off shift EST**Report to** SS**Location** Fire Station**Emergency level** 1B, 2, 3**Responsibilities**

- ☐ Switch radio to Emergency channel and report to OSC
- ☐ Contact fire station for request fire bunker gear with SCBA and dress up.
- ☐ Go to the incident scene and report to OSC
- ☐ Response to the incident as directed by the OSC.

11. Operating Shift**Who** On shift operators, under control of Shift Supervisor of area where the incident occurred**Report to** Shift Supervisor**Location** CCB**Emergency level** 1A, 1B, 2, 3**Responsibilities**

- ☐ Activate Fix fire water system where available.
- ☐ Activate Emergency Isolate Valves to stop fuel source.
- ☐ Liaise with OSC
- ☐ Bring plants / systems to a safe level of operation.
- ☐ Request additional operational resources when necessary.

12. Historian**Who** An assigned Administrative Assistance or Marine Duty (if available)(Assigned by Duty Manager)**Report to** Duty Manager**Location** EOC**Role** To act as official recorder for the EOC**Responsibilities**

- ☐ Ensure that all events are accurately recorded in the EOC logbook as they occur.
- ☐ Liaise with the radio operator to ensure that all information is recorded.
- ☐ Keep the Duty Team informed of any significant events or changes in the status of the emergency.

Specific Tasks

- ☐ Ensure sufficient log sheets are available.
- ☐ Check the whiteboard for up to date information.
- ☐ Record all events accurately and clearly including incident type, location, date and times.
- ☐ Inform the Duty Manager of significant events or changes in the status of the emergency.
- ☐ Liaise with the radio operator so that all events are recorded.

13. Switchboard Operator**Who** Receptionist/ Security Shift Officer**Report to:** HR**Location** Reception table / REB**Role** Operate the refinery switchboard.**Responsibilities**

- ☐ Separate emergency calls from normal business calls.

Specific Tasks

- ☐ Direct emergency calls to EOC or other numbers as and when directed by the Duty Manager.
- ☐ Direct normal business calls to the requested person or department secretary where possible. If not possible take the name and contact number of the caller.
- ☐ Keep the switchboard as clear as possible for emergency calls.
- ☐ Contact security to attend to unauthorized visitors.

Do not give out any statements about the emergency.**14. Office Wardens****Who** Regular building staff who have been assigned**Report to** REB**Location** Responsible Zone**Roles** To ensure all building occupants area safely evacuate during building emergency.**Responsibilities**

- ☐ Department heads or managers will nominate wardens and deputies.
- ☐ There will be a minimum of two wardens present at all times on each level of a building.
- ☐ If wardens are going to be absent from the building then they must inform their deputy
- ☐ The building will be separated into sections for checking.
- ☐ Each warden and deputy will have a floor plan showing areas to be checked.
- ☐ If it is safe to do so. On hearing the fire alarm the wardens will ;
Check all the rooms in their area of responsibility, and they will make sure that the occupants have left or are leaving the building.
- ☐ When a room has been checked the warden will close the door.
- ☐ When all the rooms have been checked the wardens will go to the assembly area.
- ☐ They will confirm with each other that the building has been evacuated.
- ☐ They will check with the senior personnel from each department, using the printout from the computer access control system supplied by security, to ensure everybody is accounted for.
- ☐ The wardens will report to the REB or IC with their findings.

Where office wardens have radios, they should be taken with them to the assembly areas.

15. Security

Who All security personnel on site under the direction of
the Security Shift Officer

Report to OSC

Location REB

Emergency Level 1A, 1B, 2, 3

Responsibilities

- ☐ Monitor all emergency radio communications.
- ☐ Close the road, which related to the incident and take care of traffic.
- ☐ Ensure emergency radio traffic recorded.
- ☐ Follow instructions of the OSC.
- ☐ Emergency road closing.
- ☐ Emergency gate closing.
- ☐ Site accesses control.
- ☐ Cooperate with law enforcement as required.
- ☐ Keep a log of all activities.
- ☐ Operate the refinery switchboard (out of hours).
- ☐ Call in, as requested by the IC
 - * Duty Rota Team
 - * Mutual aid
 - * Others requested by IC/OSC
- ☐ Get confirmation from duty team members of acknowledging via phone call.
- ☐ Control all traffic into and out of the refinery.
- ☐ Liaise with the police for roadblocks outside property as required.
- ☐ Prepare lists of all personnel on site using access control.
- ☐ Restrict all entry to the Refinery to emergency vehicles and personnel.
- ☐ Keep the incident area free of all non-emergency vehicles and personnel.
- ☐ Ensure that all the master keys are available ready for use at the main gate.

- ☐ Have a mobile security guard ready to open emergency gates if required.
- ☐ Call in extra security guards as required
- ☐ Notify to the stakeholder refer to section 8.2 Notification and Reporting to Stakeholder

16. Staging Officer**Who** Member of the Emergency Response Coordinator Group**Report to** OSC**Location** Staging Areas will be assigned by OSC**Emergency level** 2, 3**Responsibilities**

- ☐ Establish Staging Area Layout.
- ☐ Maintain radio communication with OSC and other Staging Officers.
- ☐ Request maintenance/fuel service for equipment at Staging Area as appropriated.
- ☐ Request and prepare all equipment and make available as required by the OSC and report resource status changes.
- ☐ Maintain Staging Area Resources Form.
- ☐ Maintain Unit Log
- ☐ Assembly and release of fire protection or emergency equipment and supplies to support the emergency response action.

All resources within the designated Staging Areas are under the direct control of the Staging Officer and should be available as soon as possible.

17. Medical Team**Who** Medical Clinic Nurses**Report to** OSC**Location** Medical Clinic and scene of the incident.**Emergency level** 1A, 1B, 2, 3**Responsibilities**

On receiving the emergency alarm;

- ☐ Switch radio to Emergency Channel.
- ☐ Provide first aid as requested by the OSC.
- ☐ Evacuate injured personnel by ambulance.
- ☐ Pass the information of injured or death to External Affair Duty Person / Duty Manager.

18. Legal Advisor

Who Corporate Legal Counsel and Company Secretary

Location: EOC (Fire Station)

Emergency level: 2, 3

Roles: To be an advisor on legal issues

Responsibilities:

This person is responsible for the following:

- ❑ Coordinating with outside Thai legal counsel, Shareholder companies, CPC General Counsel and other Chevron in-house counsel (Singapore) on all issues relating to legal liability of SPRC and shareholders.
- ❑ Render legal advice and assistance to the Treasurer's Unit related to Traders Insurance Policy and /or other related insurance policy coverage, claims procedures and on matters related to legal interpretation of scope, degree and type of liability for which insurance will respond.
- ❑ Provide ad-hoc legal advice to Incident Commander on issues, which may have Thai, USA, Chevron or Shareholder legal implications.
- ❑ Ensure appropriate legal advice is available for the Duty Manager when making critical decisions and press release.
- ❑ Assist the Duty Manager and other Emergency Response Team members in respect of legal matters related to Emergency Response aspects
- ❑ Provide and maintain appropriate legal advice as required.

APPENDIX B DUTY ROTA GUIDELINE FOR EMERGENCIES

1. Generic Guidelines

The Duty Rota is intended to provide support to the operating shifts in resolving Emergency and non-routine matters in various disciplines, outside normal working hours.

Furthermore, all positions of the Duty Rota will be called in the event of a Level 1B or Level 2 or Level 3 emergency.

2. Emergency Duty Rota List

Common group: Duty Manager, Operations, External Affairs, EHS, Emergency Response Coordinator, Marine, Mechanical Duty and Instrument & Electrical Duty.

Note: For Maintenance and Support Groups Duty details refer to the Maintenance and Support Groups Duty Guidelines.

3. Nomination to Duty Rota

Staff are nominated to duty rota for a period 7 consecutive calendar days starting on Friday morning at 0730 hrs.

The duty rota is updated weekly by AD/6 and distributed to all duty holders and other concerned persons. Line managers are responsible for providing AD/6 with the information on forward planning of the duty rota.

Changes during a duty rota week are allowed, and are the responsibility of the person scheduled for duty and must always be communicated by the person requesting the change, to AD/6, Security Shift Officer and Duty Manager. This change must be to another qualified duty person.

Duty Team member who is a lady, there is a Labor Law Protection stated that **no work during 22:00-06:00hrs is allowed when getting pregnant**, as a result, the lady who is getting pregnant will not be on duty.

Note: QS, PU Managers or AS shall approve Qualified Duty Persons. The Duty Rota nomination form is EHS-FO-QS-3011 Duty Rota Nomination Form.doc available in EDMS

4. Communications and Transport

Staff on duty who are the first line of emergency i.e. Emergency Duty Rota, will have a duty vehicle available if required, a mobile telephone, which must be handed over in working order to the next person on duty.

5. Duty Rota Short Message Service (SMS) Test

The Duty Rota SMS test will be happened every Friday at 1930 hrs. The message will be " **9999 Emergency Group Test, phone 038-699090**". When this message is received the duty person must call to REB and confirm his/her SMS reception.

If by 2030 hrs the duty person has not been received SMS, he/she must call REB and inform security shift officer on non-receiving message. Security shift officer will then do an individual SMS test for that particular duty person. In case of SMS failure, SSO will immediately call to all duty rota member.

6. Personal Protective Equipment (PPE)

Staff on duty must have their SPRC standard PPE available when responding to an emergency. PPE should be kept in the duty vehicle for after hour's response.

7. Generic Duty Rota Responsibilities

- ☐ Be within a 60 minutes radius of SPRC at all times.
- ☐ Be available to go directly to the refinery at any time.
- ☐ Carry the duty mobile phone at all times.
- ☐ Be aware of specific responsibilities during an emergency.
- ☐ When receiving SMS, responding as directed by the message.
- ☐ Ensure that the duty mobile telephone is working all times.
- ☐ Immediately report any problems with duty communications equipment to Helpdesk.
- ☐ Inform AD/6 of any changes to the Duty Rota schedule.
- ☐ Must not have a blood alcohol level above 0 mg%
- ☐ Notify AD/6 of any changes in home and mobile phone numbers.
- ☐ When receiving SMS, the duty team members shall call back to REB in order to acknowledge and advise their status of availability.
- ☐ If receiving " All Clear" message during on the way to refinery in case of emergency level 1B/2/3, the duty team should continue to refinery for the summary of situation.

8. Specific Roles and Responsibilities (refer to Appendix A)**APPENDIX C EMERGENCY CONTINGENCY PLAN****1. Hydrogen Sulphide (H₂S) Leak****Hazards of H₂S**

H₂S normally enters the body through inhalation. It is a highly toxic gas with an odor of rotten eggs at low concentrations. The toxic effects of H₂S are rapid, and death can occur very quickly. Many liquid and gaseous hydrocarbons may contain H₂S in sufficient concentrations to present a potential hazard to personnel, and the environment. A small quantity of H₂S in the atmosphere (500 ppm) is enough to render a victim unconscious, and can cause death if rescue does not take place immediately.

REMEMBER:

50% OF PEOPLE KILLED IN H₂S INCIDENTS ARE WOULD BE RESCUERS. THEREFORE ENSURE ALL PRECAUTIONS ARE TAKEN BEFORE ATTEMPTING ANY RESCUE OPERATIONS.

Types of Leak**Minor Leak**

Unlikely to affect any one outside the immediate area involved, and not requiring outside assistance.

Major Leak

Likely to cause a spread of gas affecting surrounding plants and/or the public outside the refinery boundary, or requiring assistance from outside the area involved.

The Shift Supervisor of the area affected will decide on the type of leak.

Notification of leak

- Notify the Shift Supervisor
- Notify Security to stand by.
- Notify the Duty Rota Team in the event of a major leak.

Actions on Minor Leak

- The Senior Operator of affected area becomes OSC will direct the operations to repair the leak.
- Two operators working together in SCBA and personal H₂S monitors will secure the plant boundary.
- Two operators working together in SCBA and with personal H₂S monitors will search the area for casualties, notify Emergency On Scene commander if any are found and begin rescue operations.
- Consider wind direction and evacuation of affected areas including assembly areas.
- All evacuations and movements should be across wind away from the leak.
- All roads in affected area to be closed.
- Isolate and de-pressure the leaking equipment to reduce/eliminate the leak.


Action on Major Leak

- Action as for minor leak plus the alarm is to be sounded for a level 1B or level 2 or level 3 emergency.
- Notify personnel in buildings down wind of the leak.
- All personnel involved in the emergency must be wearing SCBA and carry personal H₂S monitors.

Note: If H₂S detected at the fence line at concentration of 5 ppm. or more, activate Community Evacuation Plan (see 11.3 Community Evacuation of this plan) and refer to EHS-WI-QS-2025 Hydrogen Sulfide Work Instruction.doc

2. Radiation Emergencies**In the event of an emergency such as:**

- Leak or contamination of radiation source.
- Observed or suspected damage to radiation equipment, a radiation source, or its container.
- Observed or suspected malfunction of radiation equipment, or shutter control mechanisms.
- Suspected or actual losses of radiation source.
- Fire explosion or other disaster.

In cases of emergency involving radiation the EHS-SP-QS-0014 Radiation Safety.doc  must be followed.

3. Bomb Threat

Introduction

Bomb threats will usually be made directly to the refinery, but may also be made through the news media, police or other third party.

Threats may come from:

- Misguided practical jokers.
- Malcontents presently or previously employed by the Company or a Contractor deliberately causing inconvenience and disruption to production without sinister motivations for injury or damage.
- Extremist organizations operating primarily in the fields of local or national politics with malicious intent.

Threats are usually made by:

- Telephone to the refinery usually to the switchboard operator.
- Telephone to the local police or other authorities.
- Communication to the local news media.
- Anonymous Letters
Note; Letters containing information on the alleged placing of a bomb should be handed to the police for any action they think is required. The letter should be handled as little as possible and by the minimum number of people.

NO BOMB THREAT CAN BE IGNORED

The decision to evacuate some or all personnel must rest with the OSC / Incident Commander presents when the message is received. Duty manager must be informed.

Handling bomb threat calls

The most like persons to receive the call are:

During Normal Working Hours

- Switchboard Operators.
- Managers.
- Secretaries.

After Hours

- Security Personnel.
- Control Room Operators.

Responsibilities

The person receiving the bomb threat call shall;

- Ask questions from caller
- Immediately notify Security

Security Shift Officers:

- Notify the Shift Supervisor who will then establish an evaluation team.
- Contact the police.
- Follow Bomb Threat Instruction in Security Work Instruction.

Evaluation Team:

Evaluation Team is consisted of OSC, IC, and ERT. Duty Manager must be informed. Upon notification the evaluation team will proceed directly to the EOC. The person receiving the threat will meet with the team on its arrival.

The Evaluation Team will:

- Evaluate the threat.
- Decide on a course of action in conjunction with the advice of the police.
- Call in Duty Manager and key personnel to assist in a search if required.
- Reconvene with the police and other parties upon discovery of a suspected, or actual, device to discuss decision/action.
- Advise the Control room not to use portable radios until further notice.

Searching Procedures

- When a decision has been made to search, the OSC will designate the personnel most familiar with the target area to carry out a systematic search including with the Security Shift officer (or competence person).
- Communications will be by telephone (desk phone), radios or 'runners'.
- If a suspicious object is located then it must not be touched, its location conveyed to the Duty Manager and the area cordoned off.

Firefighting equipment should be set up in strategic positions.

Duty Manager will contact the local police or bomb disposal squads (by assistance of Security Shift Officer), if they are not already on site. Notify all staff.

Remark: The mobile is not allow to use during searching



3.1 BOMB THREAT CHECKLIST

NAME OF EMPLOYEE _____ TIME _____ DATE _____

QUESTIONS TO ASK

1. Has a bomb been placed or is the caller threatening to place one? _____
1. Was it mailed? _____
2. Where is bomb going to explode? _____
3. Where is bomb right now? _____
5. What kind of bomb is it? _____
6. What does it look like? _____
7. Why did you place the bomb? _____
8. Where are you calling from? _____

WRITE OUT THE MESSAGE IN ITS ENTIRETY USING EXACT WORDING

CALLER'S IDENTITY

Male ___ Female ___ Adult ___ Juvenile ___ Accent ___ Approximate Age ___

ORIGIN OF CALL

Local ___ Long Distance ___ Booth ___ Unknown ___ Internal ___ (From within
SPRC) if internal leave line open for tracing the call.

LANGUAGE

Excellent ___ Good ___ Fair ___ Poor ___ Foul ___ Other ___

SPEECH

Fast ___ Slow ___ Lisp ___ Distinct ___ Distorted ___ Slurred ___ Stutter ___ Nasal ___ Other ___

ACCENT

Foreign ___ Race ___ Local ___ Not Local ___ Region ___

BACKGROUND NOISES

Animals ___ Airplanes ___ Bedlam ___ Factory Machines ___ Music ___ Mixed ___
Office Machines ___ Traffic ___ Trains ___ Party Noise ___ Voices ___ Quiet ___

VOICE CHARACTERISTICS

Loud ___ Soft ___ Deep ___ High Pitch ___ Raspy ___ Pleasant ___ Intoxicated ___ Other ___

MANNER

Calm ___ Angry ___ Rational ___ Laughing ___ Irrational ___ Coherent ___ Incoherent
___ Deliberate ___ Emotional ___ Righteous ___

Link to Telephone bomb threat form [EHS-FO-QS-3050 Telephone Bomb Threat Form.doc](#) 



3.2 Mail Bomb Recognition Checklist

Mail bombs have exhibited unique characteristics, which should be helpful in identifying a suspect item. The following could be of assistance when opening mail:

Envelope

- ❖ Envelope will be lopsided or uneven in weight or packaging with possible cutting or pasting.
- ❖ Excessive use of securing materials such as sealing tape or string.
- ❖ Feelings of springiness or sponginess in the top, bottom or sides.
- ❖ Protruding wires, tinfoil or string.
- ❖ Oily stains or discoloration ("Sweating" of plastic explosive).
- ❖ Peculiar odor. Sometimes smells like almonds.
- ❖ Sloshing, buzzing or ticking sounds. Inks, particularly reds and blues may bleed, staining the envelope.

Weight

- ❖ Heavier than usual for its size.
- ❖ Weight uneven or volume distribution uneven with possible bulging.
- ❖ Heavier than usual for its class of mail. (For example, an airmail envelope weighing more than 2 ounces).

Rigidity

- ❖ Greater than normal, particularly along its center length.

Thickness

- ❖ Not uniform, or with bulges.
- ❖ For medium size envelope, the thickness of a small book and fairly rigid.
- ❖ For larger envelopes, bulkiness, an inch or more in thickness.

Address

- ❖ No return address.
- ❖ Hand printed or poorly printed or typed address.
- ❖ Incomplete or erroneous destination address.
- ❖ Foreign, poor or disguised handwriting.
- ❖ Restrictive markings such as Private, Confidential, Personal, or Eyes-Only.
- ❖ Marked (written or stamped) airmail, Special Delivery, Certified or Registered.
- ❖ Mail designated Rush, Handle with Care or Fragile.
- ❖ Misspelled words, particularly those in common business usage.

IF YOU SUSPECT A MAILING AND ARE UNABLE TO VERIFY THE CONTENTS:

- ❖ **DO NOT OPEN THE ARTICLE.**
- ❖ Isolate the mailing and secure the immediate area.
- ❖ Notify Supervisor and Shift Security Officer.
- ❖ **DO NOT** put the article in water or confined space such as a desk.
- ❖ If possible, open windows and doors in the immediate area to assist in venting potential explosive gases

4. Marine Terminal / SPM Emergencies**4.1 Marine Terminal Emergency**

All Jetty operations must stop and product flows must be isolated

In case of fire in Marine Terminal Area, Senior Operator of Marine Terminal will be OSC and control all activities at the scene of incident and report to Incident Commander (PD Shift Supervisor) at EOC. ERT Team will be mobilized from Marine Terminal Areas. If the incident is associated with oil spill, the OSC should call Marine on Duty person to deal with oil spill.

In the case of a fire on a ship the SPRC emergency organization will assist as requested by the person in charge of the ship.

It is not necessary to wait for a formal request from the ship before action is taken.

Command

In the case fire on the jetty itself, the command will be referred to Emergency Response Plan. In the case of a fire on a ship, the command will be the ships master and or the harbormaster. The refinery emergency organization will assist as requested.

Notification

1. In case of fire on ship, the following parties shall be notified by Ship Master

- Ship agency
- Ship Charterer
- Ship Owner

2. SP Department will notify off taker/Charterers

Additional resources

In case of additional resources such as ships should be requested via MTP Port Authority

4.2 SPM Emergency**4.2.1 Emergency situation " Fire on the tanker which secured at the SPM "**

The following steps must be taken;

- The tanker must raise alarm consisting of a series of long blast on the ship's whistle, each blast being not less than 10 seconds in duration.
- Mooring Master on board the tanker inform to Marine control building & towing tug to be on stand by and inform to Marine Manager.
- Marine Manager will inform to duty Manager & Oil Movement - Dispatch Manager for the situation at the SPM.
- All cargo, bunkering or ballasting operations must be stopped.
- Tanker's main engines & steering gear brought to stand by condition.
- Activated fire-fighting team on board the vessel.
- Discussion between the Master and the Mooring Master whether the tanker can move under her own power or not.
- If the tanker can move under her own power, then the towing tug can be released from the stern of the tanker to assist in Fire Fighting. SPM maintenance vessels need to have all firefighting equipment in ready to use including foam compound as well.
- If the tanker cannot move under their own power so the decision have to be made between the team whether or not require assistance from firefighting tug or assistance from Refinery ERT team.
- Mooring Master needs to have a close communication with the MCB regarding the outside assistance from the tugboat, rescue launches, medical aid and ambulance, port authority.

Emergency Removal of a Tanker from a berth.

- If a fire on a tanker which secured at the SPM cannot be controlled. It may be necessary to consider whether or not the tanker should be removed from the berth.
- Planning for such an eventuality may requires consultation between Master, Mooring Master, Marine Manager, Emergency Response Coordinator and Oil Movement & Dispatch Manager.
- The safe location for anchoring is 3 miles South of SPM.

Rescue Launch

- The work boat on the SPM maintenance vessel will act as a rescue launch for the recovery of personnel who may be in the water or the evacuation of personnel who may be injured from the fire.

Launch detailed of these duties should have the following equipment;

- A communication link capable of being integrated into the control center communication system (Marine band or mobile phone)
- Fixed or portable search lights for operations during darkness or periods of reduced visibility.
- Self contained breathing apparatus
- Resuscitation equipment
- The crews of the rescue launch should have knowledge of first aid and know how to use artificial respiration.

Communication

- Via Marine band ch. 67 , UHF trunk radio in emergency channel or by mobile phone.
- SCM tug boat on Marine band ch. 11 or by telephone (038) (684556-9)

4.2.2 Emergency situation “ Fire on the SPM “**Fire on the SPM which no tanker berthing at the SPM**

- SPM maintenance vessel will be on standby, activated firefighting team on the vessel and make firefighting equipment ready to combat with the fire.
- Communicate to MCB and Marine Manager . Approaching to SPM and sprayed water to SPM as soon as possible.
- Marine Manager will inform to duty Manager & Oil Movement - Dispatch Manager for the situation at the SPM .
- Mooring Master will travel to SPM by SPRC speed boat if the weather permit.
- SPM maintenance vessel will send the photo via e mail so Marine duty team can assess the situation from time to time. and discussion have to be made between the team whether or not require assistance from firefighting tug or assistance from Refinery ERT team.
- After the fire stopped, the Marine team need to investigate for the cause of the fire and check for the condition of the SPM whether fit for purpose or not and may be need to launch the procedure “ contingency plan when SPM being out of order “

Fire on the SPM which tanker still discharging at the SPM

- The tanker must raise alarm consisting of a series of long blast on the Ship's whistle, each blast being not less than 10 seconds in duration.
- Mooring Master on board the tanker inform to Marine control building & towing tug to be on stand by and inform to Marine Manager.
- Marine Manager will inform to duty Manager & Oil Movement - Dispatch Manager for the situation at the SPM
- All cargo, bunkering or ballasting operations must be stopped.
- Tanker's main engines & steering gear brought to stand by condition and Released towing tug to be stand by as firefighting tug.
- Activated fire-fighting team on board the vessel.
- The ship's fire main should be pressurized and water fog applied to the SPM and tanker 's forecastle.
- Marine duty team can assess the situation from time to time. And discussion have to be made between the team whether or not require assistance from SC firefighting tug or assistance from Refinery ERT team.
- Mooring Master need to ask our rigger to stand by at the ship's manifold and ready for hose disconnection if necessary.
- Ensuring the unmooring equipment on the tanker must be brought to state of immediate readiness and ready for use.

Communication

- Via Marine band ch. 67 , UHF trunk radio in emergency channel or by mobile phone.
- SCM tug boat on Marine band ch. 11 or by telephone (038) (684556-9)

4.2.3 Emergency situation “ Tanker grounding during maneuvering at the SPM Area prior Mooring Master boarding“

The following step must be taken;

- Tanker need to inform to Ship's owner & agent.
- The agent will inform to MCB and Mooring Master in charge of that tanker.
- If the grounding area is not within the Map Ta Phut SPM area (3 mile south of SPM then the Marine team need to assess the situation via the ship's agent.
- If the grounding cause the spill, Please see oil spill plan scenario “ vessel grounding “
- If the grounding area is within the Map Ta Phut SPM then Mooring Master will ask the SPM maintenance vessel to search around the ship.

- Tanker must check the sounding of all cargo tank, ballast tank and fuel tank whether the quantity was still the same or not. The sounding of the tank need to check from time to time until the situation was improved.
- The ship's owner must contact to the outside tug assistance for assisting from aground position by discussing with the Mooring Master as well.
- Mooring master can feed initial information for the tide table and the current direction.
- When vessel afloat again, the diving inspection need to be done to confirm for the condition of the vessel and the class surveyor need to be approved for the fitness of the ship before the decision of berthing the tanker at the SPM had been made.

4.2.4 Emergency situation " Vessel grounding during maneuvering at the SPM Area during Piloting by SPRC Mooring Master"

The following step must be taken;

- Stopped maneuvering on the tanker and inform to MCB and Marine Manager to know the initial condition.
- Marine Manager will inform to all concerned parties and call for standby.
- Tanker must check the sounding of all cargo tank, ballast tank and fuel tank whether the quantity was still the same or not. The sounding of the tank need to check from time to time until the situation was improved.
- During the tanker check the sounding of all tank, the maintenance vessel can check around the tanker whether have an oil spill or not.
- If oil spill occurred, activated oil spill response plan as per SPRC OSRP.
- If no oil spill occurred, the Master & Mooring Master need to discussion with SPRC Marine team.
- Time of high water, the assistance of the SC tug, assistance from SPM maintenance vessel need to be considered to assist the tanker to afloat condition.
- When vessel afloat again, the diving inspection need to be done to confirm for the condition of the vessel and the class surveyor need to be approved for the fitness of the ship before the decision of berthing the tanker at the SPM had been made.

Control Center

During the emergency at the SPM, MCB conference room will act as control center and discussion have to made between the Marine team and the emergency team from the refinery. The final decision will come from Duty Manager & Oil Movement – Dispatch Manager.

Remark : Reliable communications are essential in dealing successfully with emergency situations. Because of their importance, consideration

should be given to setting up a secondary system to take over if the main system is put out of action.

6. TTLT Emergencies

In event of an emergency at the Tank Truck Loading Terminal area the response will be as for all other refinery emergencies.

7. SPRC pipelines Emergencies

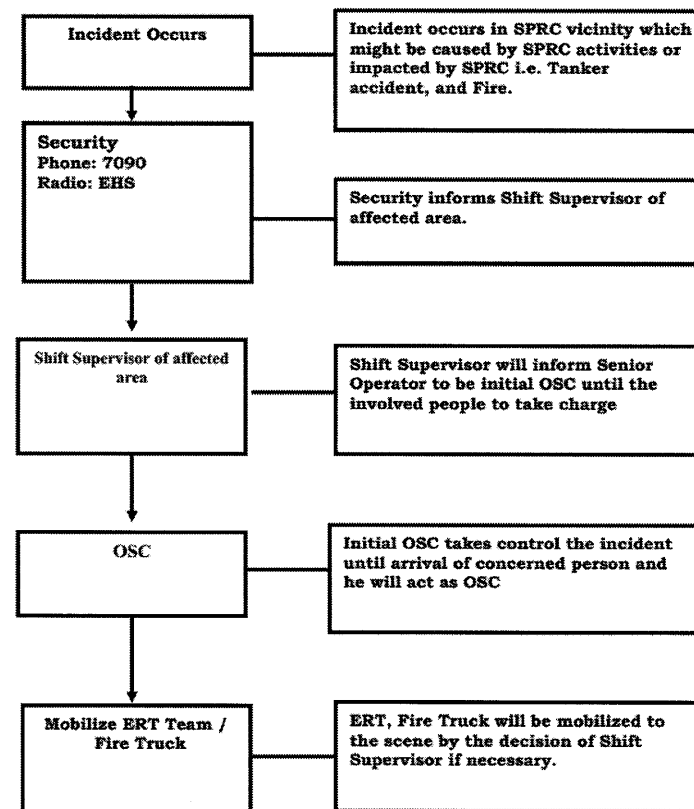
In event of an emergency at pipelines which are SPRC responsibility (see Appendix O) the response will be as for the refinery emergency as following:

- On receiving an emergency call, the PD Senior Operator (Tank Farm) will go to the scene and act as On Scene Commander.
- The ERT will be mobilized to the scene.
- The OSC will set up a command post at the scene and direct firefighting and rescue operations.
- OSC coordinated with OSC-EFT (Eastern Fluid Transportation)
- The PD Shift Supervisor will act as IC sets up the EOC.
- OSC report situation to IC.

8. Off Site Facilities Incident in SPRC Vicinity

In event of an emergency off site facilities in SPRC vicinity which might be caused by either SPRC activities or not SPRC activities, but nearby SPRC perimeter (i.e. Tanker accident, Fire). The guidelines have to be carried out as follows:

- Inform Security
- Security informs Shift Supervisor of location affected.
- Senior Operator of affected area will be the initial OSC.
- ERT team will be mobilized by Shift Supervisor consideration.
- Inform involved persons who are responsible to be in charge.



9. Off Site Road Accidents Involving Product from SPRC

The tanker drivers must be aware of the actions to be taken in an emergency. It is the responsibility of the Road Tanker-Depot Manager of each company (PTT, Caltex, and Shell) to ensure that the drivers are aware of their instructions in the actions to be taken in an emergency.

In the event of SPRC being contacted about an incident concerning a Road Tanker, which was loaded at SPRC terminal, the following procedure should be followed:

In case of incident occurs in IEAT-MTP Area:

Truck Accident:

- The person who is aware of the incident should inform the SPRC TTLT Operation Coordinator and Security Shift Officer at Refinery Entrance Building (REB). Then REB inform to Emergency Response Coordinator
- The TTLT Operation Coordinator will then inform the Depot Managers of Off takers and Security Shift Officer
- SPRC will assist when receiving a request from an Authority or Customer
- The TTLT Operation Coordinator considers assisting by consulting with PD Manager in Day working hour and keep inform Duty Manager.
- The TTLT Operation Coordinator considers assisting by consulting with Duty Manager in Off hour and keep inform PD Manager.
- The TTLT Operation Coordinator will coordinate with SPRC concern party to assist the Truck accident and keep inform to PD Manager or Duty Manager

Truck Fire:

- The person who is aware of the incident should inform the SPRC TTLT Operation Coordinator and Security Shift Officer at Refinery Entrance Building (REB). Then REB inform to Emergency Response Coordinator
- The TTLT Operation Coordinator will then inform the Depot Managers of Off takers and Security Shift Officer
- SPRC will provide a Fire Truck to assist when receiving a request from an Authority
- The TTLT Operation Coordinator request support from Emergency Response Coordinator
- Emergency Response Coordinator considers assisting by consulting with Duty Manager for get approve to send SPRC Fire truck to support and keep inform to Duty Manager.
- The decision to supply this equipment will be with Duty manager.

In case of incident occurs out of IEAT-MTP Area:

- SPRC will provide a Fire Truck to assist when receiving a request from an Authority
- Emergency Response Coordinator considers assisting by consulting with Duty Manager.
- The decision to supply this equipment will be with **Duty manager**.

Emergency Contact Numbers.

TTLT Operation Coordinator:

Office: 038-699289

Mobile phone: 081- 863-8023 (TTLT Coordinator)

Security Shift Officer: 038-699090

For others referred to [EHS-OT-QS 3003 Emergency Telephone Number.doc](#)

10. Failure of SPRC Trunked Radio system procedures

10.1 Fall Back Mode

There are three fall back modes available on SPRC Trunked Radio System:

- Zone Isolated Wide Area Trunking
- Local Site Trunking
- Direct Mode Operation

For zone isolated wide area and local site trunking, the radios will switch to available site automatically, and radios will work as normal.

SPRC defines the direct mode in detail of EHS-OT-QS-3010 Trunk Radio Emergency Procedure.doc (Page 5).

10.2 Direct Mode Operation (DMO)

If all connections to the Radio Network Infrastructure are lost (CAT main site, SPRC backup sites, and SPRC site down), each SPRC radio can enter into direct mode operation (DMO). This means that the radio will use its own antenna and amplifying power to communicate with other radios that support DMO and are within range of 0.5-1 kilometer.

During DMO mode operation, radios at SPRC site will not be able to connect to those at MCB, except one fixed radio at Area 5 panel (Backup MCB machine). Similarly, MCB radios will not be able to communicate with SPRC site radios, except one fixed radio at MCB Operation Board panel (SPRC Area 5 Backup) machine.

In case of incident occur during radio total fail (Direct mode)

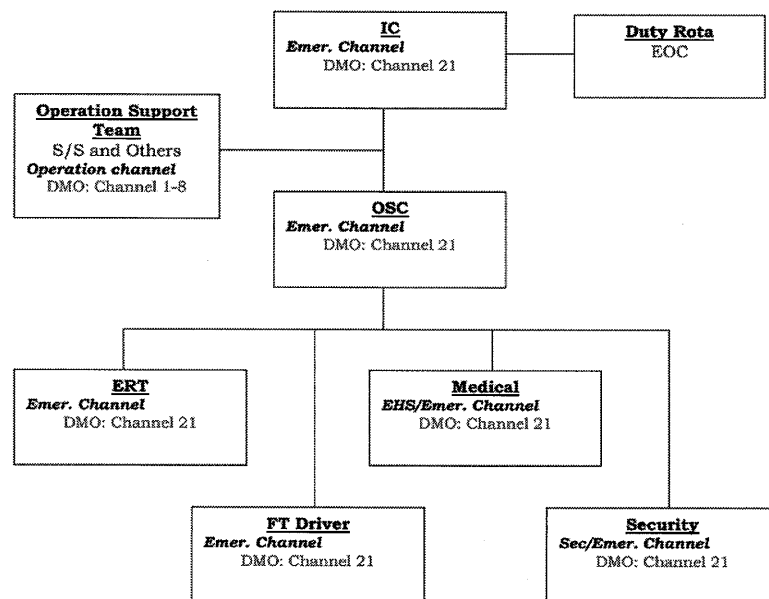
When all available network is lost, the radio displays channel indicates "No Service" word

Incident commander informs REB for announcement

REB announce by radio each direct mode channel to switches the radio to "**DMO**" and selects **emergency channel** for direct mode in case of trunk radio is totally failed.

During trunk fail period, minimize the usage of radio communication is required. The command to response action is mainly conduct from on scene commander on site, incident commander or duty manager to first intervention team and support team.

10.3 Workflow of communications to related trunk radio partial or total failure (Direct Mode) during incident or emergency cases will be by following methods;



Note:

1. IC will get the process information by contacting with Area Shift Supervisor via internal telephone (extension number).

2. The followings are the recommendation emergency exercise programs

Exercises

- Level 1A/1B Operation on shift Weekly
- Level 2 Emergency Response Teams /EMAG 2 times/year
- Level 3 Emergency Response Teams /EMAG/Rayong Province 1 time/year

Evacuation Building Occupants 1 time/year/Building zone

It shall be set up the mandatory emergency exercise at least once a year with practice the trunk radio failure for ensuring all back up mode of radio system (Wide area backup-Local site and DMO mode) has good reliability of communication.

3. The link is the trunk radio emergency procedure, which is provided the operation guideline to shift staff on the principle of trunk radio system including emergency

response action during trunk radio failed EHS-OT-QS-3010 Trunk Radio Emergency Procedure.doc

10.4 SPRC Portable Radio Channel Configuration

Trunk Radio " Normal "	Use Wide Area of Local Site Trunking	Area/Location
↓	<ul style="list-style-type: none"> - Talk groups run on radio frequency channel. - North site has 16 talk groups opposite. - Controller monitors anyone making a call. - Intrinsically safe (use color stickers). - 2 batteries provided per radio. - Battery conditioning required every 3 months. - North site: REB <li style="padding-left: 20px;">CCB <li style="padding-left: 20px;">W/S <li style="padding-left: 20px;">TTLT - Helpdesk handles all repairs, returns, transfers etc 	A1 A2 A3 A4 A5 Marine TTLT PNM PDM RELIB CTM CTM Project Tank/OSI/NM Paint/Civil Scaff/Insula Rigging 1 Rigging 2 Taxi 1&2 EHS/SEC/MED Security EMER
" Direct Mode"	## Failure of all radio networks: Use DMO mode	North Site
↓	<ul style="list-style-type: none"> - Manually switch to DOM - Point to point" conversation only. - Limited distance e.g. 500 - 1 km. - Sensitive to obstructions e.g. walls etc. - Only use when "controller & base" have failed - On screen radio will show "DMO" - On Screen radio will show symbol "I->I" - Standby at appropriate channel. - Monitor channel before calling. 	DMO-A1 DMO-A2 DMO-A3 DMO-A4 DMO-A5 DMO-Marine DMO-TTLT DMO-PNM DMO-PDM DMO-RELIB DMO-CTM DMO-CTM Project DMO-Tank/OSI/NM DMO-Paint/Civil DMO-Scaff/Insula DMO-Rigging 1 DMO-Rigging 2 DMO-Taxi 1&2 DMO-EHS/SEC/MED DMO-Security DMO-EMER

11. Product Contamination Procedure

In event of SPRC products which become off specification either at the refinery or at discharging port of customers. The response will be referred to **Non Conforming Products Procedure**

12. Oil /Chemical Spill/Release and Leak on land

The response of Oil / Chemical Spill/ Release on Land will be referred to **EHS-WI-QS-3003 Hazardous Material Release, Spill and Leak.doc**

13. Marine Oil Spill

The response of Marine Oil Spill Plan will be referred to **EHS-WI-QS-3001 Oil Spill Response contingency Plan.doc**

APPENDIX D MUTUAL AID and ASSISTING TO THIRD PARTIES

The following mutual aid has been agreed, to provide assistance in case of an emergency at installations in the industrial estate.

1. Assistance to SPRC

In the case of SPRC requiring assistance from outside sources the following is a list of resources in the order to be called in:

The Emergency Mutual Aid Group (EMAG) is consisted of SPRC, ROC, PTTGC2 (PTT-Chem I1) , PTTGC3 (former PTTChem-I4), PTTGC4 (former PTTARO-1), PTTGC5 (former PTTAR2-RIL) and PTTGC6 (refinery), PTT (gas Separation Plant), VNT, Covestro (Thailand), IRPC, TPE and MOC

On arrival at the refinery mutual aid teams will stand by at REB for PN until they are required by the OSC or IC. The Mutual Aid coordinator will take them to the incident scene and liaise with the OSC.

2. SPRC Assistance to Other Companies**2.1 Agreement Companies**

In the case of a request to SPRC for mutual aid from one of the EMAG members, SPRC has to immediate provide for the equipment. The mutual aid company will call assistance via the REB and/or SPRC EMAG representative (Lead Emergency Management and Emergency Management Specialist)

The equipment will be supplied and the decision to supply this equipment will rest with the **Shift Supervisor** at the time.

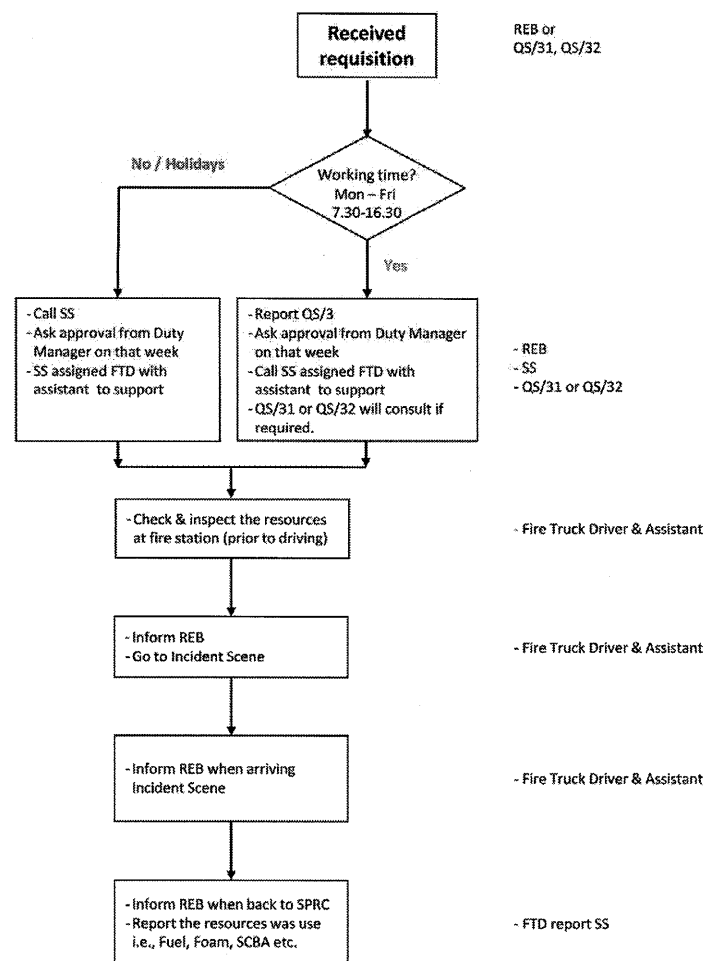
For Fire Truck driver and an assistant or other personnel if needed will be arranged by **Shift Supervisor**. More consult or advice will be supported by Emergency Management Specialist if required.

2.2 Non Agreement Companies

In case of the other companies which not in agreement need assistance from SPRC. SPRC will provide a Fire truck and necessary equipment. Fire Truck driver and an assistant or other personnel if needed will be arranged by Lead Emergency Management (**should not be Operators**)

The decision to supply this equipment will be with Duty manager.

SPRC will provide a Fire Truck, driver and Fire Truck operator plus other equipment and personnel as necessary to either Agreement Companies or Non Agreement Companies.

Flowchart of SPRC Assistance to Other Companies**Noted**

- Record information & resources was to requested.
- Use Fire Truck check list for resources clarification with EMAG or other company requester
- In case of the other companies which not in agreement need assistance from SPRC will be arranged by Lead Emergency Management (should not be Operators)

3. Mutual Aid Coordinators

ERC members or persons nominated from the Emergency Support Team will be assigned and wear a **reflective vest marked "MC"**

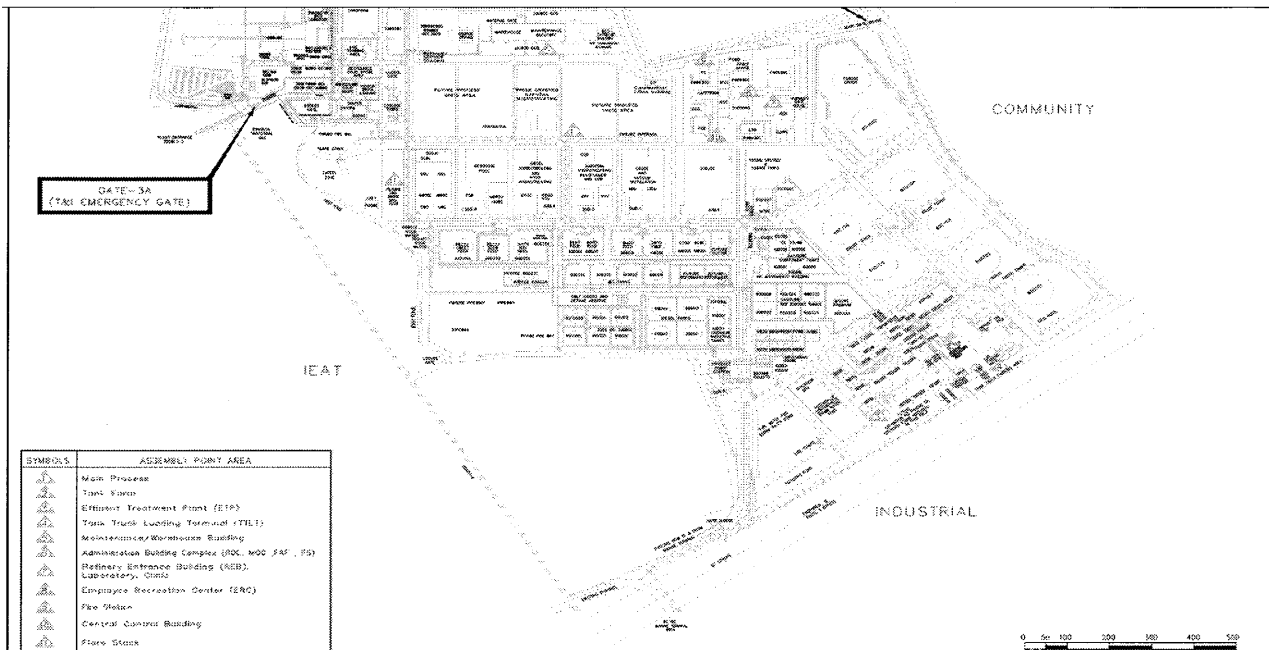
Mutual aid fire trucks should be parked in the vicinity of REB for PN in a safe location. If mutual aid fire trucks are required on site they must be accompanied at all times by SPRC personnel.

Mutual Aid Coordinator should log in equipment, personnel, and quantity of foam of Mutual Aid Team. Brief of emergency situation should be made to Mutual Aid Teams.

Note: At the first stage of emergency if needs assistance from Mutual Teams, the security personnel will be the Mutual Aid Coordinators until ERC members arrive.

APPENDIX E EMERGENCY ASSEMBLY AREAS

Refinery Assembly Areas

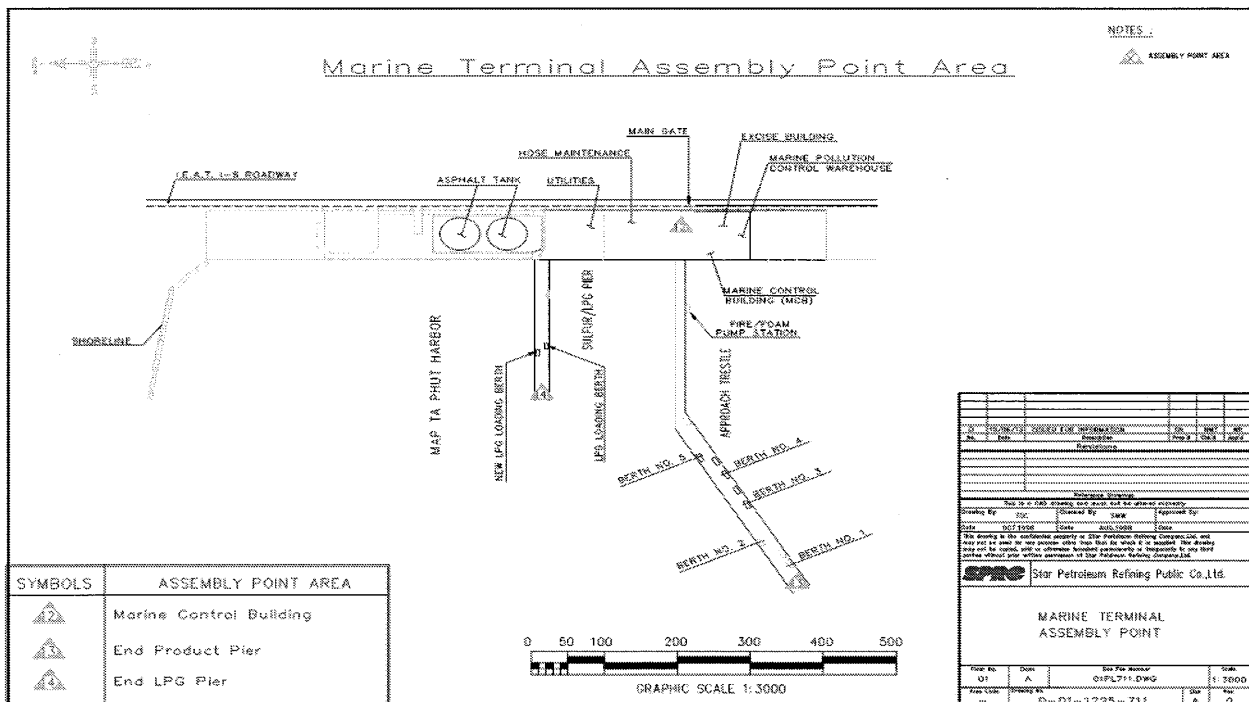


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Marine Terminal Assembly Areas



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APPENDIX F HEAD COUNT PROCEDURES

1. HEAD COUNT PROCEDURES

All personnel not involved in the emergency must go to an assembly area.
Contractors are responsible for their own personnel.
SPRC personnel are responsible for their visitors.

- It is responsibility of the Incident Commander or the Duty Manager to assign the person to do a head count.
- It is the responsibility of the On Scene Commander to account for all personnel in the incident area.
- Security will take the names of any person leaving the refinery during an emergency.

The person assigned to do the head count will follow the following procedure:

Process Area (See Appendix E Emergency Assembly Areas)

1. Check the number of jobs in the work permit from the permit rooms (COS shelters).
2. Check with supervisor of each job about the number of persons at the assembly area No. 1 in front of the CCR/Platformer.
3. Check with supervisor of each job about the number of persons at the assembly area No. 2 at the west of Oil Movement Building (OMB).
4. Check with supervisor of each job about the number of persons at the assembly area No. 3 at the ETP.

Admin. Building Complex / Employee Recreation Center/ Marine Building/ Construction Building/Warehouse and TILT (See Appendix E Emergency Assembly Areas)

Check with the office wardens for personnel at the assembly areas.

When moving around between assembly areas always take into account the type of incident and the wind direction.

Inform the Incident Commander / Duty Manager of the results of the head count and action taken.

APPENDIX G PRESS RELEASES GUIDELINES

1 PRESS RELEASES GUIDELINES

Communicating in an emergency/a crisis Public attention in the event of an emergency or a crisis, particularly media attention, can be overwhelming so bear these points in mind:

- **Concern:** show that the company cares for those affected
- **Clarity:** adopt a clear media response statement
- **Co-ordination:** ensure that it is widely understood who is the spokesperson
- **Co-operation:** maintain a good working relationship with the media and other agencies
- **Consistency:** ensure that you come across clearly and without contradiction and that your facts are verified at source
- **Consultation:** if a joint-venture partner or contractor is involved, consult them before any statement are made
- **Control:** centralize and control the flow of information by
 - Response statement cleared by Duty Manager
 - Prepared answers to expected media questions
 - Regular news briefing if appropriate
 - Factual information to offset rumor using every means of communication
 - No unauthorized interviews or statements
 - Only ONE spokesperson at any one time to avoid confusion

CAUTION – don't

- Admit legal liability unless specifically empowered to do so
- Lie or try to hide behind " NO COMMENT"
- Blame anyone or anything
- Release details of cost estimate of damage or loss



2. INITIAL RESPONSE STATEMENT

(To be completed by Duty Manager then pass on to External Affairs Duty)

When: Date _____ Time _____

What happened: _____

Where exactly: _____

Any fatality/injured: _____

How many people are on site: _____

What actions being taken: _____

What effects will the incident have on operation/production: _____

SPRC is still investigating the cause of this incident and at this point in time is not able to provide any details until the investigation is complete.

Completed by: _____ (Duty Manager)



3. MEDIA AND OFFICIALS OFFICES

PA department designates the offices for the media and officials for working during an emergency when they needed as following:

Officials: Room Number R-106

Media: Room Number R 106

External Affairs to request IT duty person to set appropriate equipment, but cover the following as minimum:

- ♦ Facsimile Machine
- ♦ Telephones
- ♦ Computer
- ♦ Copy machine

APPENDIX H FOAM SUPPLIERS

2.1 Red Alert Service (National Foam Inc.- Kidde Fire Fighting)

Tel: + 610-363-1400

2.2 Ansul

Tel: Local distributor TTK: (+66 or 0) 2704 6430

2.3 Chemguard

Tel: +1-817-473-9964

2.4 National Foam Universal Gold 1/3%

Tel: +668-9079-9448 or 02-026-0470-92 # 506

APPENDIX I DRINKING WATER AND REFRESHMENTS

The drinking water for emergency support is kept in the Fire Station storeroom both sites call security for the keys.

In case of long period of incident, which need cash for arranging refreshments and/or meal, External Affair duty will be the person to support.

APPENDIX J TRANSPORTATION

In case of emergency the duty vehicles and TAXI will be parked at the car park nearby the fire stations and leave the key in the ignition sockets

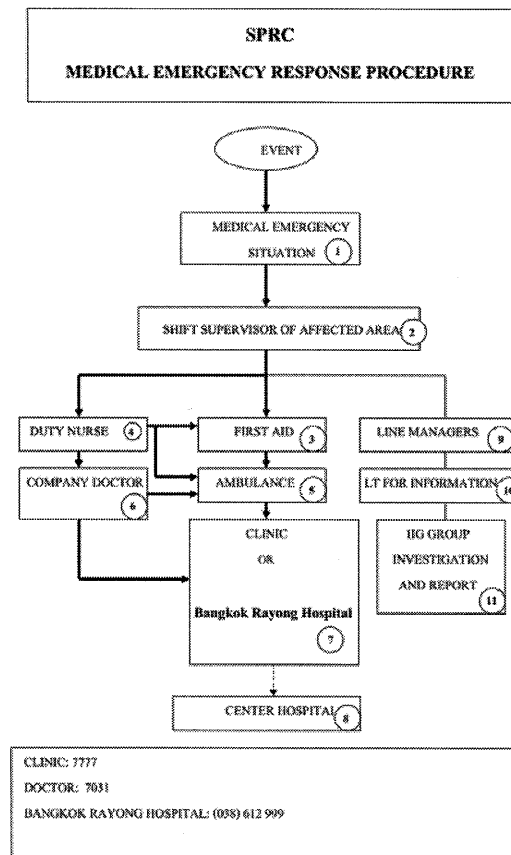
There is a driver available (stand by Lab) during off-hours at the shelter and vans are parked in the car parking shelter with the key are left in the ignition socket. Phone Number **7089**

During off hours and holiday Taxi (pick up truck) will be parked beside the REB and key will be kept at REB.

APPENDIX K EMERGENCY ALARM TEST

The emergency alarms will be tested each Wednesday at 1330 hrs. Follow by the All clear.

The Emergency telephone 7191 will be tested after the emergency alarm test, Security room, Medical Clinic and also the Fire station when manned.



APPENDIX L MEDICAL ERP PROCEDURE

In cases of emergency involving medical needed the EHS-WI-QS-2005 Medical Emergency Response Plan.doc must be follow

APPENDIX M EMERGENCY TRAINING AND EXERCISES

All personnel working in the refinery must be trained in emergency response. The type of training will depend on the individuals work location and job. The followings are the recommendation training and exercise programs.

Training Course as list:

- Basic Fire Fighting
- Basic Office Fire Fighting
- Advanced Fire Fighting
- Fire Command (For OSC and IC)
- Breathing Apparatus
- Hazmat
- Rescue
- Fire Truck Driver

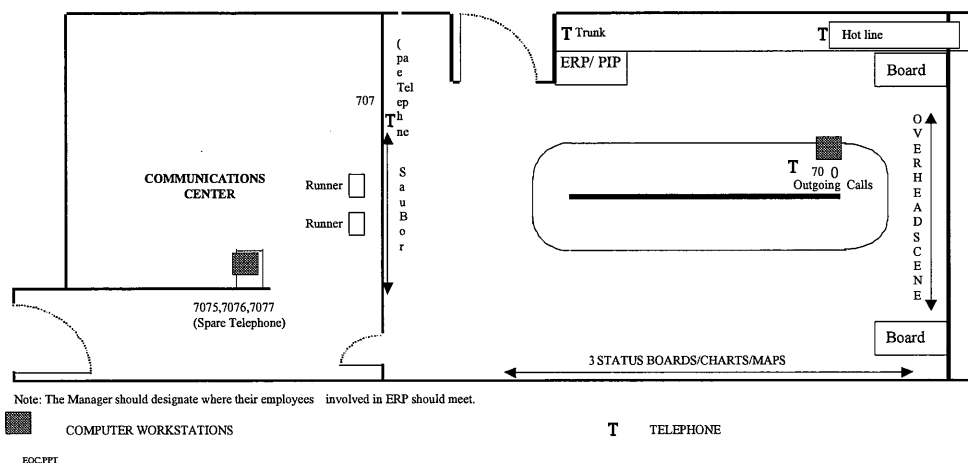
Refer to EHS-OT-QS-001 EHS Standard Training Program

Exercises	Operation on shift	Weekly
▪ Level 1A or 1B		
▪ Level 2	Emergency Response Teams /EMAG	2 times /year
▪ Level 3	Emergency Response Teams /EMAG/Rayong Province	1 time/year
Evacuation	Building Occupants	1 time/year/Building zone
Refer to <u>EHS-OT-QS-3005 Emergency Response Exercise Guidance.doc</u>		

Note: For Oil Spill response training refer to EHS-OT-QS-0001 EHS Standard Training Program

APPENDIX N EMERGENCY OPERATION CENTER LAYOUT

EMERGENCY OPERATIONS CENTER (EOC) LAYOUT PLAN
(FIRE STATION TRAINING ROOM F-115)



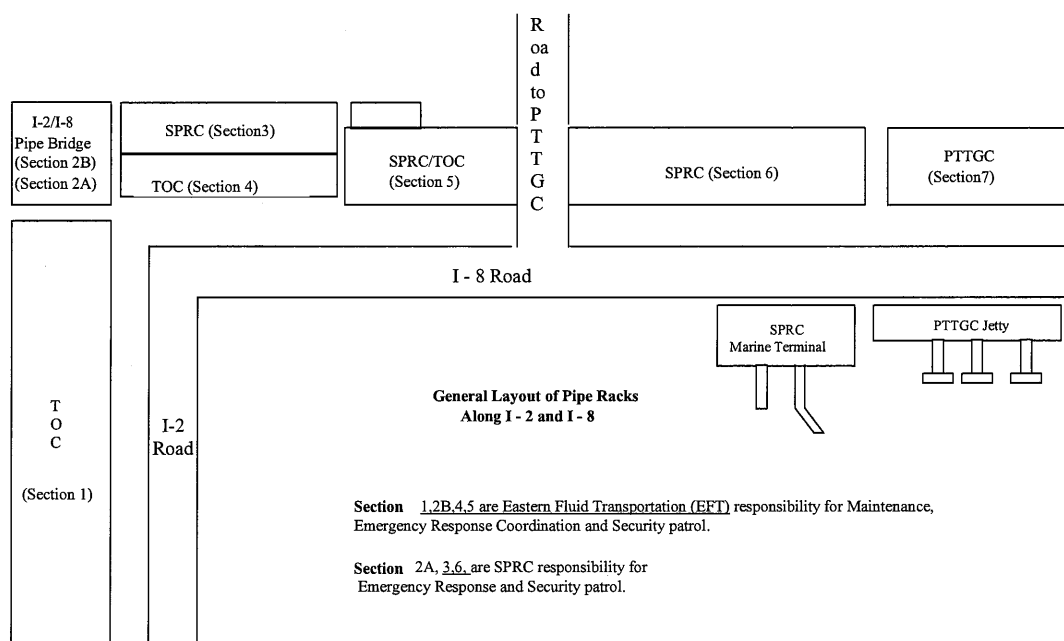
APPENDIX P EMERGENCY TELEPHONE NUMBERS

The Corporate Affairs and Emergency Response Coordinator are responsible for obtaining and updating a list of applicable local and national government contacts, with support and supervision by QEHS. This list is updated six monthly or when changed as detailed at [EHS-OT-QS-3003 Emergency Telephone Number.doc](#)

APPENDIX Q SPRC FLU PANDEMIC BUSINESS CONTINUITY PLAN

The Flu Pandemic Business Continuity Plan is the plan to control the possible impact of Flu Pandemic and monitor the phase of Pandemic plan, which is recommended by WHO or Shareholder.

Influenza pandemics result in serious health effects to large proportions of the population with significant disruption to the community, economy and businesses. See more details in [EHS-OT-QS-3017 SPRC Flu Pandemic Business Continuity Plan](#).

APPENDIX O PIPE LINE LAY OUT

APPENDIX R MUTUAL AID AGREEMENT BETWEEN SPRC & PTTGC-6

In order to support each other in case of emergency, the followings have been discussed and agreed to be a guideline for both SPRC and PTTGC-6

1. Emergency Support Team;

- Both companies will support 2 operation staff (ERT Team members) to be the ERT back up team for each other in case of calling and can support. All members will equip with full bunker gears or other personal protective equipment that suit for the emergency case.
- All ERT team members support will be under supervision of on scene commander of the incident happening company.

2. Communication channel:

- In case of need support ERT back up from the other site shall PD shift supervisor (SPRC) or RM shift supervisor (PTTGC6) as Incident commander (IC) notify to Shift Security Officer on shift (SPRC REB) or Security Leader (PTTGC-6 Security Center) to call to the other Site (REB or Security Center) for requesting help via Hot Line.
- Incident Commander (IC) shall specify other equipment need beyond full bunker gears that need support such as Fire truck, Ambulance, Foam Truck, Oil spill equipment or others to the Shift Security Officer (SSO) or Security Leader during calling too.

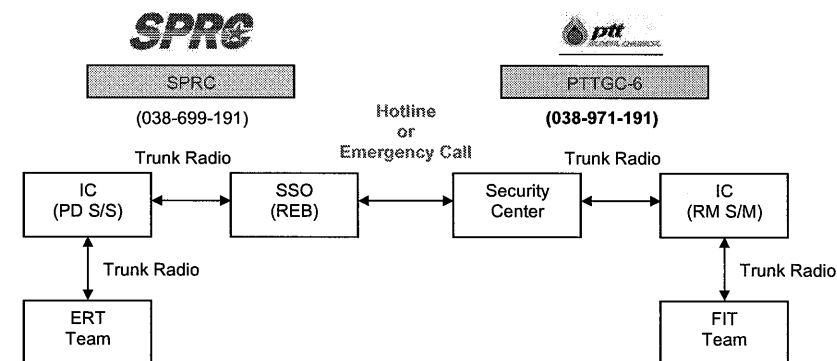
Exercise:

To ensure reliability of guideline implementation, we agreed;

- Do testing the communication channel and ERT team according agreed by emergency exercise together (schedule will be combined in to existing master exercise schedule in each site).
- Do the communication testing to ensure that the channel set is work: Every Friday (19.30 hrs) each site by SSO will ring the hotline provide to do the test to ensure it work and record status of testing under SMS call back from emergency duty Rota team.

Remark;

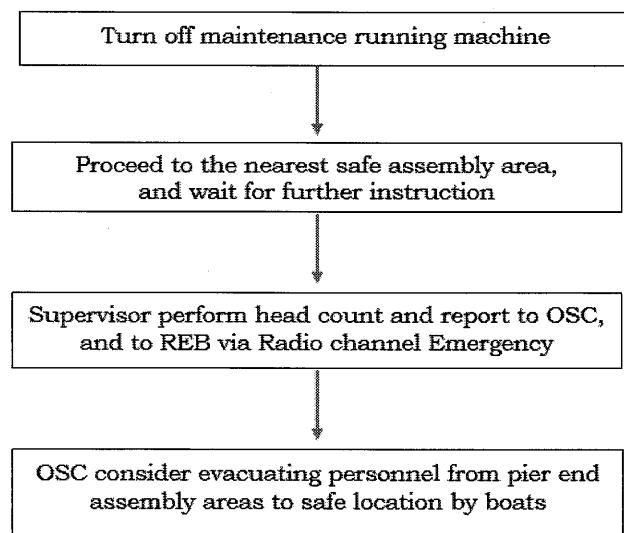
- It is the right of the company to deny on supporting of ERT team when request in case that there is an emergency case happen at site or other site which have agreed to provide support.



APPENDIX S PIER EVACUATION GUIDELINE

Personnel evacuating from product pier and LPG pier can go to either:

- assembly point 12 (near MCB main gate), or
- pier end assembly areas, if it is not safe to go to assembly point 12 (e.g. fire on pier or on ship alongside)



Remark 1) Under circumstances, OSC may consider evacuate all personnel at the marine terminal to pier end assembly areas, e.g. the shore assembly point 11 is unsafe for such.

2) Boat crew will provide life vests or other kinds of flotation devices to personnel embarking.

APPENDIX T The Reporting form to the Labour Protection Welfare

แบบ สปร. ๕

แบบแจ้งการเกิดอุบัติเหตุร้ายแรง หรือการประสบอันตรายจากการทำงาน

ตามมาตรา ๓๔ (๑) และ (๒) แห่งพระราชบัญญัติความปลอดภัย อาชีวอนามัย และสภาพแวดล้อมในการทำงาน พ.ศ. ๒๕๕๔

- (๑) ชื่อสถานที่ประกอบการ.....
- เลขทะเบียนการค้า.....ประเภทกิจการ.....
- ที่ตั้งเลขที่.....หมู่ที่.....ต.รอก/ซอย.....ถนน.....ตำบล/แขวง.....
- อำเภอ/เขต.....จังหวัด.....รหัสไปรษณีย์.....โทรศัพท์.....
- จำนวนลูกจ้างทั้งหมด.....คน
- (๒) ความเสียหายจากการเกิดอุบัติเหตุร้ายแรง หรือการประสบอันตรายจากการทำงาน
- ☐ เสียชีวิต จำนวน.....ราย ตามบัญชีแบบท้าย (ระบุชื่อ - สกุล อายุ เพศ ตำแหน่ง)
- ☐ บาดเจ็บ/เจ็บป่วย จำนวน.....ราย ตามบัญชีแบบท้าย (ระบุชื่อ - สกุล อายุ เพศ ตำแหน่ง)
- ☐ ทรัพย์สินเสียหาย จำนวน.....บาท
- ☐ มีการหยุดการผลิ
- (๓) สถานที่เกิดเหตุ.....
- วัน/เดือน/ปี ที่เกิดเหตุ.....เวลา.....น.
- (๔) สาเหตุของการเกิดอุบัติเหตุร้ายแรง หรือการประสบอันตรายจากการทำงาน.....
- (๕) การดำเนินการแก้ไขและป้องกันการเกิดซ้ำ กรณีเกิดเหตุตามมาตรา ๓๔ (๒).....

ข้าพเจ้าขอรับรองว่าข้อความข้างต้นเป็นความจริงทุกประการ

ลงชื่อ.....นายจ้าง/ผู้รับผิดชอบอำนาจ
(.....) ประทับตรา/ฝ่ามือ
ตำแหน่ง.....
วันที่.....เดือน.....พ.ศ.

APPENDIX U IEAT-MTP Emergency Reporting Form



แบบรายงานแจ้งเหตุการณ์ผิดปกติ / เหตุฉุกเฉิน เบื้องต้น
ของผู้ประกอบการพื้นที่นิคมอุตสาหกรรมและท่าเรืออุตสาหกรรมมาบตาพุด

เรียน ผู้อำนวยการศูนย์เฝ้าระวังและควบคุมคุณภาพสิ่งแวดล้อม (EMCC) สำหรับโรงงาน/สถานประกอบการ รายงานภายใน 10 นาที หลังเกิดเหตุ	
สาเนาเรียน <input type="checkbox"/> ผอ. สนม. <input type="checkbox"/> ผอ. สพร. ขอรายงานแจ้งเหตุการณ์ผิดปกติ / เหตุฉุกเฉิน เบื้องต้น ดังนี้	
ลักษณะเหตุการณ์ <input type="checkbox"/> ไฟไหม้ <input type="checkbox"/> ระเบิด <input type="checkbox"/> ก๊าซ/สารเคมีอันตรายรั่ว <input type="checkbox"/> น้ำมันหกรั่วไหล <input type="checkbox"/> อื่นๆ ระบุ	
ชื่อโรงงาน/บริษัท ที่เกิดเหตุ นิคมฯ	
ความรุนแรง <input type="checkbox"/> เล็กน้อย <input type="checkbox"/> ปานกลาง <input type="checkbox"/> มาก <input type="checkbox"/> อื่นๆ	
เหตุการณ์เบื้องต้น (ระบุเหตุการณ์ที่เกิดขึ้นคร่าวๆ เกิดอะไร ที่ไหน ผลกระทบต่อภายนอก) วันที่เกิดเหตุ เวลา น. เหตุการณ์เบื้องต้น	
ชื่อผู้แจ้ง (ตัวบรรจง) หมายเลขโทรศัพท์ที่ติดต่อกลับได้	
ศูนย์สื่อสารและรับแจ้งเหตุ <input type="checkbox"/> สนท./EMCC Fax: 0-3304-7041 Fax: 0-3868-3941 โทร: 0-3868-3933 มือถือ 0-81732-3485 Line ID : adminemcc <input type="checkbox"/> สนม. Fax: 0-38017-496 โทร: 0-3868-5776 <input type="checkbox"/> สพร. Fax: 0-3868-3176 โทร: 0-38687-819 มือถือ 0-988452-426 <input type="checkbox"/> RIL Fax: 0-38915-316 โทร: 0-38915-285	
สำหรับ: เจ้าหน้าที่ศูนย์เฝ้าระวังและควบคุมคุณภาพสิ่งแวดล้อม (EMCC) ผู้รับแจ้งเหตุ (ตัวบรรจง) : เวลาที่รับแจ้ง น. การดำเนินการ <input type="checkbox"/> แจ้งเจ้าหน้าที่เวร กณ. <input type="checkbox"/> รายงาน ผอ. นิคมฯ <input type="checkbox"/> ออกตรวจสถานที่เกิดเหตุ <input type="checkbox"/> แจ้งเตือนโรงงาน/ชุมชน ที่อาจได้รับผลกระทบ <input type="checkbox"/> แจ้งขอความช่วยเหลือจากหน่วยงานที่เกี่ยวข้อง <input type="checkbox"/> ดังกล่าว <input type="checkbox"/> โรงพยาบาล <input type="checkbox"/> ตำรวจ <input type="checkbox"/> อื่นๆ	
หมายเหตุ : ผอ.สนท. หมายถึง ผู้อำนวยการสำนักงานนิคมอุตสาหกรรมมาบตาพุด : ผอ.สพร. หมายถึง ผู้อำนวยการสำนักงานท่าเรืออุตสาหกรรมมาบตาพุด : ผอ.สนม. หมายถึง ผู้อำนวยการสำนักงานนิคมอุตสาหกรรมร่วมด้วยดีและกันมาบตาพุด สำหรับที่กำกับดูแล นิคมอุตสาหกรรมระดับจังหวัดและระดับอำเภอ (มาบตาพุด) นิคมอุตสาหกรรมฉะเชิงเทรา, นิคมอุตสาหกรรมมาบตาพุด, นิคมอุตสาหกรรม ชาร์จ โกลด์ ฉบับที่แก้ไข Mtp_Rev.4 10 Jan 19	

APPENDIX V MTP- Port Abnormal Situation and Emergency Reporting Form



แบบรายงานแจ้งเหตุการณ์ผิดปกติ / เหตุฉุกเฉิน เบื้องต้น
ของผู้ประกอบการพื้นที่นิคมอุตสาหกรรมและท่าเรืออุตสาหกรรมมาบตาพุด

เรียน ผู้อำนวยการศูนย์เฝ้าระวังและควบคุมคุณภาพสิ่งแวดล้อม (EMCC) สำหรับโรงงาน/สถานประกอบการ รายงานภายใน 10 นาที หลังเกิดเหตุ	
สาเนาเรียน <input type="checkbox"/> ผอ. สนม. <input type="checkbox"/> ผอ. สพร. ขอรายงานแจ้งเหตุการณ์ผิดปกติ / เหตุฉุกเฉิน เบื้องต้น ดังนี้	
ลักษณะเหตุการณ์ <input type="checkbox"/> ไฟไหม้ <input type="checkbox"/> ระเบิด <input type="checkbox"/> ก๊าซ/สารเคมีอันตรายรั่ว <input type="checkbox"/> น้ำมันหกรั่วไหล <input type="checkbox"/> อื่นๆ ระบุ	
ชื่อโรงงาน/บริษัท ที่เกิดเหตุ นิคมฯ	
ความรุนแรง <input type="checkbox"/> เล็กน้อย <input type="checkbox"/> ปานกลาง <input type="checkbox"/> มาก <input type="checkbox"/> อื่นๆ	
เหตุการณ์เบื้องต้น (ระบุเหตุการณ์ที่เกิดขึ้นคร่าวๆ เกิดอะไร ที่ไหน ผลกระทบต่อภายนอก) วันที่เกิดเหตุ เวลา น. เหตุการณ์เบื้องต้น	
ชื่อผู้แจ้ง (ตัวบรรจง) หมายเลขโทรศัพท์ที่ติดต่อกลับได้	
ศูนย์สื่อสารและรับแจ้งเหตุ <input type="checkbox"/> สนท./EMCC Fax: 0-3304-7041 Fax: 0-3868-3941 โทร: 0-3868-3933 มือถือ 0-81732-3485 Line ID : adminemcc <input type="checkbox"/> สนม. Fax: 0-38017-496 โทร: 0-3868-5776 <input type="checkbox"/> สพร. Fax: 0-3868-3176 โทร: 0-38687-819 มือถือ 0-988452-426 <input type="checkbox"/> RIL Fax: 0-38915-316 โทร: 0-38915-285	
สำหรับ: เจ้าหน้าที่ศูนย์เฝ้าระวังและควบคุมคุณภาพสิ่งแวดล้อม (EMCC) ผู้รับแจ้งเหตุ (ตัวบรรจง) : เวลาที่รับแจ้ง น. การดำเนินการ <input type="checkbox"/> แจ้งเจ้าหน้าที่เวร กณ. <input type="checkbox"/> รายงาน ผอ. นิคมฯ <input type="checkbox"/> ออกตรวจสถานที่เกิดเหตุ <input type="checkbox"/> แจ้งเตือนโรงงาน/ชุมชน ที่อาจได้รับผลกระทบ <input type="checkbox"/> แจ้งขอความช่วยเหลือจากหน่วยงานที่เกี่ยวข้อง <input type="checkbox"/> ดังกล่าว <input type="checkbox"/> โรงพยาบาล <input type="checkbox"/> ตำรวจ <input type="checkbox"/> อื่นๆ	
หมายเหตุ : ผอ.สนท. หมายถึง ผู้อำนวยการสำนักงานนิคมอุตสาหกรรมมาบตาพุด : ผอ.สพร. หมายถึง ผู้อำนวยการสำนักงานท่าเรืออุตสาหกรรมมาบตาพุด : ผอ.สนม. หมายถึง ผู้อำนวยการสำนักงานนิคมอุตสาหกรรมร่วมด้วยดีและกันมาบตาพุด สำหรับที่กำกับดูแล นิคมอุตสาหกรรมระดับจังหวัดและระดับอำเภอ (มาบตาพุด) นิคมอุตสาหกรรมฉะเชิงเทรา, นิคมอุตสาหกรรมมาบตาพุด, นิคมอุตสาหกรรม ชาร์จ โกลด์ ฉบับที่แก้ไข Mtp_Rev.4 10 Jan 19	

15. REFERENCE LIST

The following references were used for this document:

Chevron: Global Manufacturing Loss/ Near Loss Classification and Reporting Metrics

Rayong Province Emergency Response Plan

IEAT-IEAT-MTP Port Emergency Response Plan B.E.2558

Chevron Leak Response Protocol June 2015

Oil Spill Response Drills

MARINE TERMINAL - OIL SPILL RESPONSE DRILL

Schedule to practice drill for each shift A, B, C, and D

Equipment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Oil Spill Boom	A	B	C	D	A	B	C	D	A	B	C	D
Weir Skimmer - MiniMax	A	B	C	D	A	B	C	D	A	B	C	D
Boat Dispersant Refill/Spray	A	B	C	D	A	B	C	D	A	B	C	D

Notes: Events can be simulated as if the boom had been launched and deployed at spill location. Skimmer can be launched with means of ropes at boom ramp or at berth as appropriate. Boat can help transport or slowly tow the skimmer to desired location. Be advised to prime Spate Pump with water for quicker suction. Boat dispersant refill is to be simulated with fresh water. *** Clean/rinse and dry off equipment before storing ***

Date/Time	21 July 24 / 14:00-15:30	WF Shift	C	SC Shift/Foreman	Mr. Viroj J.
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SCENARIO

Spill Location	Berth No.5		
Product/Quantity/Area Size	Black oil (slop) / 2 M3 / Area 35 m ²		
Wind Direction/Speed	97 deg / 10 knot	Tide	1.2 meter still
OSR Equipment	Boom 50 x 2 meter		
General Scenario	Slop oil spilled by overflow from recovered slop tank cause 66G501 not auto mode.		

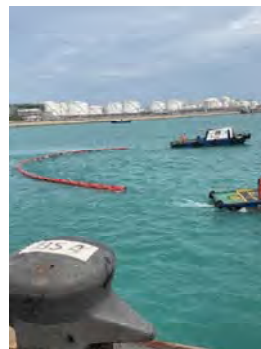
EVENTS

Time	Description
11:00	Berth Operator calling to MCB for informed at Berth No.5 has recovered water over flow to the sea.
11:01	MCB Panel man informed to outside and senior operator.
11:03	Berth operator go to Berth No.5 and found black oil overflow to sea around 35 m² at around the Berth No.5 area.
11:10	Senior operator informed to Shift Supervisor, Marine duty, and Port control. Senior operator acting to OSC then informed to IC and REB for announce Oil spill response Tier 1A .
11:15	IC & OSC and ERT setting team for prepare Oil spill equipments
11:50	OSC request SC and ERT team commence deployed boom by tug RS-23 & RS-18
12:00	Boom 50 x 2 m. was deployed to spill area for contain and protect sensitiv area.
12:10	Recover the oil by using skimmer and apply dispersant after got approve from PCD
12:10	Assign RS-14,RS-27 to spray dispersant.
12:20	Berth operators do survey around all berth and LPG pier for find out another oil slick.
12:30	- Exercised over.

Comments/Rem

Report to: PD S/S, PD/1B, PD/75, PD/72
Rev.0.1 22/12/2010

Comments/Remarks



Report to: PD S/S, PD/1B, PD/75, PD/72
Rev.0.1 22/12/2010

MARINE TERMINAL - OIL SPILL RESPONSE DRILL

Schedule to practice drill for each shift A, B, C, and D

Equipment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oet	Nov	Dec
Oil Spill Boom	A	B	C	D	A	B	C	D	A	B	C	D
Weir Skimmer - MiniMax	A	B	C	D	A	B	C	D	A	B	C	D
Boat Dispersant Refill/Spray	A	B	C	D	A	B	C	D	A	B	C	D

Notes: Events can be simulated as if the boom had been launched and deployed at spill location. Skimmer can be launched with means of ropes at boom ramp or at berth as appropriate. Boat can help transport or slowly tow the skimmer to desired location. Be advised to prime Spate Pump with water for quicker suction. Boat dispersant refill is to be simulated with fresh water. *** Clean/rinse and dry off equipment before storing ***

Date/Time	06Aug 24 / 09:00-10:30	WF Shift	D	SC Shift/Foreman	Mr. Jakkapan Y
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SCENARIO

SCENARIO			
Spill Location	Berth 4		
Product/Quantity/Area Size	Mogas Oil / 0.5 M3 / Area 10 m ²		
Wind Direction/Speed	115 deg / 10 knot	Tide	1.0 meter still
OSR Equipment	Boom 50 x 2 meter		
General Scenario	Mogas oil Base fuel 95 spilled by over flow from ship's mast riser while loading at berth 4.		

EVENTS

Time	Description
09:00	Ship Officer calling to MCB for emergency stop loading Base Fuel 95 at berth no.4 due to overflow from ship's mast riser.
09:01	MCB Panel man stop loading and all valves closed.
09:05	Berth operators go to berth 4 and found Base Fuel 95 overflow to bund and overflow to sea around 0.5 m² at port side of ship.
09:07	Senior operator informed to Shift Supervisor, Marine duty, Port control and inform to SP team. Senior operator acting to OSC then informed to IC and REB for announce Oil spill response Tier 1A .
09:15	IC & OSC and ERT setting team for prepare Oil spill equipments
09:17	OSC request SC and ERT team commence deployed boom by tug RS-26 & SC-23
09:22	Boom 50 x 2 m. was deployed to spill area for contain and protect sensitive area.
09:25	Let oil film disperse and apply dispersant after got approve from PCD
09:28	Assign RS-14,RS-27 survey oil film.
09:30	Berth operators do survey around all berth and LPG pier for find out another oil slick.
09:30	Exercised over.

Comments/Rem

Report to: PD S/S, PD/1B, PD/75, PD/72
Rev.0.1 22/12/2010

Comments/Remarks:



Report to: PD S/S, PD/1B, PD/75, PD/72
Rev.0.1 22/12/2010

MARINE TERMINAL - OIL SPILL RESPONSE DRILL

Schedule to practice drill for each shift A, B, C, and D

Equipment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Oil Spill Boom	A	B	C	D	A	B	C	D	A	B	C	D
Weir Skimmer - MiniMax	A	B	C	D	A	B	C	D	A	B	C	D
Boat Dispersant Refill/Spray	A	B	C	D	A	B	C	D	A	B	C	D

Notes: Events can be simulated as if the boom had been launched and deployed at spill location. Skimmer can be launched with means of ropes at boom ramp or at berth as appropriate. Boat can help transport or slowly tow the skimmer to desired location. Be advised to prime Spate Pump with water for quicker suction. Boat dispersant refill is to be simulated with fresh water. *** Clean/rinse and dry off equipment before storing ***

Date/Time	8 Sep 24 / 10:30-11:30	WF Shift	A	SC Shift/Foreman	Mr. Jakkarin
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SCENARIO

Spill Location	Berth 2		
Product/Quantity/Area Size	Black oil (FO-5) / 1 M3 / Area 20 m ²		
Wind Direction/Speed	155 deg / 10 knot	Tide	1.7 meter still
OSR Equipment	Boom 50 x 2 meter		
General Scenario	Fuel oil spilled by overflow from ship's mast riser while loading at berth no. 2		

EVENTS

Time	Description
10:30	Ship Officer calling to MCB for emergency stop loading fuel oil at berth no.2 due to overflow from ship's mast riser.
10:31	MCB Panel man stop loading and all valves closed.
10:35	Berth operator go to berth no.2 and found black oil spill to ship deck and overflow to sea around 20 m² at port side of ship.
10:35	Senior operator informed to Shift Supervisor, Marine duty, Port control and inform to SP team. Senior operator acting to OSC then informed to IC and REB for announce Oil spill response Level 1A .
11:15	IC & OSC and ERT setting team for prepare Oil spill equipments
11:50	OSC request SC and ERT team commence deployed boom by tug RS-18 & SC-23
11:00	Boom 50 x 2 m. was deployed to spill area for contain and protect sensitive area.
11:10	Recover the oil by using skimmer and apply dispersant after got approve from PCD
11:10	Assign RS-14, RS-27 to spray dispersant.
11:20	Berth operators do survey around all berth and LPG pier for find out another oil slick.
11:30	- Exercised over.
Comments/Rem	

Report to: PD S/S, PD/1B, PD/75, PD/72
Rev.0.1 22/12/2010

Comments/Remarks:



Report to: PD S/S, PD/1B, PD/75, PD/72
Rev.0.1 22/12/2010

MARINE TERMINAL - OIL SPILL RESPONSE DRILL

Schedule to practice drill for each shift A, B, C, and D

Equipment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Oil Spill Boom	A	B	C	D	A	B	C	D	A	B	C	D
Weir Skimmer - MiniMax	A	B	C	D	A	B	C	D	A	B	C	D
Boat Dispersant Refill/Spray	A	B	C	D	A	B	C	D	A	B	C	D

Notes: Events can be simulated as if the boom had been launched and deployed at spill location. Skimmer can be launched with means of ropes at boom ramp or at berth as appropriate. Boat can help transport or slowly tow the skimmer to desired location. Be advised to prime Spate Pump with water for quicker suction. Boat dispersant refill is to be simulated with fresh water. *** Clean/rinse and dry off equipment before storing ***

Date/Time	26 Oct 24 / 08:30-12:00	WF Shift	B	SC Shift/Foreman	Mr. Jakkarin
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SCENARIO

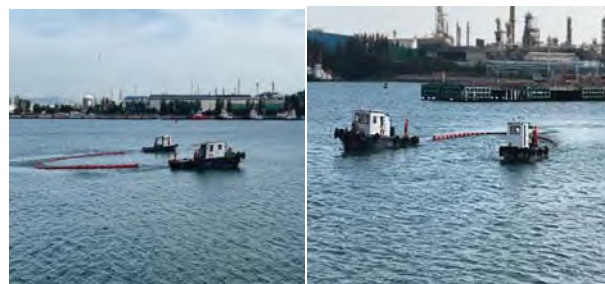
Spill Location	Berth 2		
Product/Quantity/Area Size	Black oil (FO-5) / 2 M3 / Area 50 m ²		
Wind Direction/Speed	135 deg / 12 knot	Tide	1.2 meter still
OSR Equipment	Boom 50 x 2 meter		
General Scenario	Fuel oil spilled by overflow from ship's tank 5(S) while loading at berth no. 2		

EVENTS

Time	Description
08:30	Ship Officer calling to MCB for emergency stop loading fuel oil at berth no.2 due to overflow from ship's tank 5(S).
08:31	MCB Panel man stop loading and all valves closed.
08:35	Berth operator go to berth no.2 and found black oil spill to ship deck and overflow to sea around 50 m² at star board side of ship.
08:45	Senior operator informed to Shift Supervisor, Marine duty, Port control and inform to SP team. Senior operator acting to OSC then informed to IC and REB for announce Oil spill response Level 1A .
09:15	IC & OSC and ERT setting team for prepare Oil spill equipments
09:50	OSC request SC and ERT team commence deployed boom by tug RS-27 & SC-23
10:10	Boom 50 x 2 m. was deployed to spill area for contain and protect sensitive area.
10:30	Recover the oil by using skimmer and apply dispersant after got approve from PCD
10:50	Assign RS-18, RS-27 to spray dispersant.
11:50	Berth operators do survey around all berth and LPG pier for find out another oil slick.
12:00	- Exercised over.
Comments/Rem	

Report to: PD S/S, PD/1B, PD/75, PD/72
Rev.0.1 22/12/2010

Comments/Remarks:



Report to: PD S/S, PD/1B, PD/75, PD/72
Rev.0.1 22/12/2010

MARINE TERMINAL - OIL SPILL RESPONSE DRILL

Schedule to practice drill for each shift A, B, C, and D

Equipment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Oil Spill Boom	A	B	C	D	A	B	C	D	A	B	C	D
Weir Skimmer - MiniMax	A	B	C	D	A	B	C	D	A	B	C	D
Boat Dispersant Refill/Spray	A	B	C	D	A	B	C	D	A	B	C	D

Notes: Events can be simulated as if the boom had been launched and deployed at spill location. Skimmer can be launched with means of ropes at boom ramp or at berth as appropriate. Boat can help transport or slowly tow the skimmer to desired location. Be advised to prime Spate Pump with water for quicker suction. Boat dispersant refill is to be simulated with fresh water. *** Clean/rinse and dry off equipment before storing ***

Date/Time	19 Nov 24 / 13:00-16:00	WF Shift	C	SC Shift/Foreman	Mr.Prakrob M.
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SCENARIO

Spill Location	Berth 1		
Product/Quantity/Area Size	Black oil (FO-5) / 2 M3 / Area 50 m ²		
Wind Direction/Speed	161 deg / 7.9 knot	Tide	1.2 meter still
OSR Equipment	Boom 50 x 2 meter		
General Scenario	Fuel oil spilled by overflow from ship's tank 5(S) while loading at berth no. 1		

EVENTS

Time	Description
08:30	Ship Officer calling to MCB for emergency stop loading fuel oil at berth no.1 due to overflow from ship's tank 5(S).
08:31	MCB Panel man stop loading and all valves closed.
08:35	Berth operator go to berth no.1 and found black oil spill to ship deck and overflow to sea around 50 m ² at star board side of ship.
08:45	Senior operator informed to Shift Supervisor, Marine duty, Port control and inform to SP team. Senior operator acting to OSC then informed to IC and REB for announce Oil spill response Level 1A.
09:15	IC & OSC and ERT setting team for prepare Oil spill equipments
09:50	OSC request SC and ERT team commence deployed boom by tug RS-27 & SC-23
10:10	Boom 50 x 2 m. was deployed to spill area for contain and protect sensitive area.
10:30	Recover the oil by using skimmer and apply dispersant after got approve from PCD
10:50	Assign RS-18, RS-27 to spray dispersant.
11:50	Berth operators do survey around all berth and LPG pier for find out another oil slick.
12:00	- Exercised over.
Comments/Rem	

Report to: PD S/S, PD/1B, PD/75, PD/72
Rev.0.1 22/12/2010

Comments/Remarks:



Report to: PD S/S, PD/1B, PD/75, PD/72
Rev.0.1 22/12/2010

MARINE TERMINAL - OIL SPILL RESPONSE DRILL

Schedule to practice drill for each shift A, B, C, and D

Equipment	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Oil Spill Boom	A	B	C	D	A	B	C	D	A	B	C	D
Weir Skimmer - MiniMax	A	B	C	D	A	B	C	D	A	B	C	D
Boat Dispersant Refill/Spray	A	B	C	D	A	B	C	D	A	B	C	D

Notes: Events can be simulated as if the boom had been launched and deployed at spill location. Skimmer can be launched with means of ropes at boom ramp or at berth as appropriate. Boat can help transport or slowly tow the skimmer to desired location. Be advised to prime Spate Pump with water for quicker suction. Boat dispersant refill is to be simulated with fresh water. *** Clean/rinse and dry off equipment before storing ***

Date/Time	14 Dec 2024 13:30-14:50	WF Shift	D	SC Shift/Foreman	Mr. Prakop.
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SCENARIO

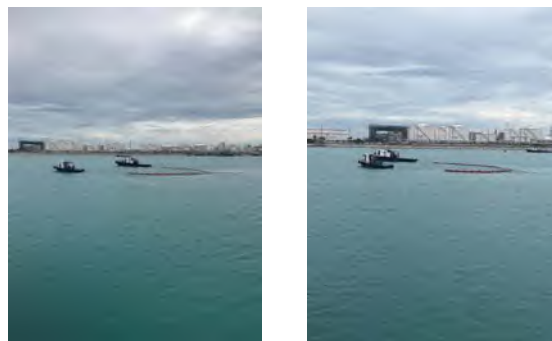
Spill Location	Berth 1.		
Product/Quantity/Area Size	Black oil / Area 10 m ²		
Wind Direction/Speed	140 deg / 15 knot	Tide	1.2 meter still
OSR Equipment	Boom 50 x 2 m		
General Scenario	Fuel oil spilled by overflow from ship's mast riser while loading at berth no.1.		

EVENTS

Time	Description
13:30	Ship calling to MCB for emergency stop loading fuel oil at berth 1 due to overflow from ship's mast riser.
13:32	MCB Panel man stop loading and all valves closed.
13:33	Berth operator go to berth no.1 and found black oil spill to ship deck and overflow to sea around 10 m ² at port side of ship.
13:35	Senior operator informed to Shift Supervisor, Marine duty, Port control and SP team. Senior operator act as onscene commander announce Oil spill responds Tier 1.
13:40	O/C setting team for prepare Oil spill equipments and requeste MCB panel man to cease all ship loading operation at Product pier.
13:50	Onscene request SC foreman commenced deploy boom by tug boat RS-18 & SC22
14:15	Boom 50x2 m. was deploying to spilled area at berth#1 and contain oil spill in U-shape boom.
14:20	Recover the oil by using skimmer and apply dispersant after got approve from PCD
14:30	Assign RS-14,RS-27 to spray dispersant.
14:30	Berth operator do survey around all berth and LPG pier for find out another oil slick.
14:40	- Exercised over. - Clean Boom with fresh water.

Report to: PD S/S, PD/1B, PD/75, PD/72
Rev.0.1 22/12/2010

Comments/Remarks:



Report to: PD S/S, PD/1B, PD/75, PD/72
Rev.0.1 22/12/2010



FIRE AND OIL SPILL DRILLS REPORT

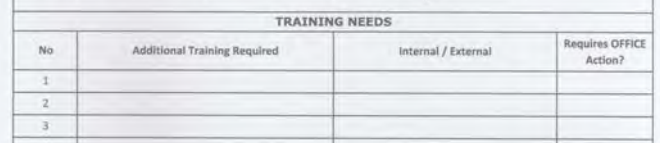
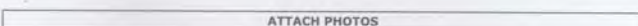
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บริษัท พายอนมาร์ีน เซอร์วิส จำกัด สำนักงานใหญ่
PAYON MARINE SERVICE CO.,LTD. HEAD OFFICE

[illegible]

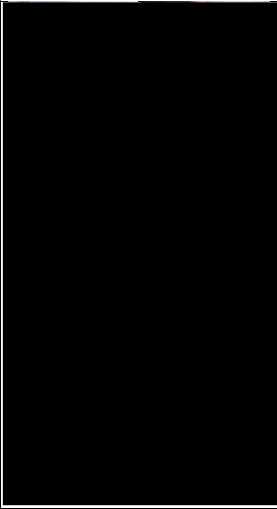
114

Page 2 of 2





General Information			
Date of Training	December 07, 2024	Vessel name	M.V. RS38
Place of Training	SPM Terminal	Name of Inspector	Prachya Plainsirichai
Name of Master	Mr. Chalem Boonkerd	Name of Chief Engineer	Mr. Teerasak Chanrob
Type of Drill	Oil Spill Drill	Time Record	12:00 Lt – 12:48 Lt

Photo	Description
	<p>Our tug boat left from the tug base and sailed to the SPM terminal for preventing oil pollution during M.T. Georgios had her cargo operations at the SPM terminal. There was tug movement as report below:</p> <p><u>12:00 Lt</u> Pre-oil spill exercise meeting.</p> <p><u>12:10 Lt</u> Commenced oil spill exercise,</p> <ul style="list-style-type: none">- Took out oil booms from container and deployed into the sea together with running the power pack- Expand oil spill dispersant spray arms and running oil spill dispersant sprayer pump (LOMBARDINI)- Running oil spill dispersant sprayer pump (ALFEDO) and exercised by spraying water into the sea by crews at bow.- Patrolled around the SPM terminal for oil spill surveillance and exercise. <p><u>12:40 Lt</u> Check condition of all OSR equipment after the drill</p> <p><u>12:48 Lt</u> Completed oil spill exercise.</p> <p>All firefighting appliances and oil spill response equipment were in good condition. This drill considered satisfactory to the master and us.</p>



Marine Operations Supervisor

การฝึกซ้อมการโต้ตอบสถานการณ์ฉุกเฉิน

การประชุม EMAG 2024



EMAG
EMERGENCY MUTUAL AID GROUP

ประชุมสมาชิกกลุ่ม EMAG ครั้งที่ 4
ประจำปี 2567-68
(4th EMAG Meeting 2024/25)

วัน : 17 ส.ค. 2567
เวลา : 14.00 - 16.00
สถานที่ : ห้องประชุม 106 ศูนย์นวัตกรรม IRPC





EMAG
EMERGENCY MUTUAL AID GROUP

ประชุมสมาชิกกลุ่ม EMAG ครั้งที่ 3
ประจำปี 2567-68
(3rd EMAG Meeting 2024/25)

วัน : 4 ส.ค. 2567
เวลา : 13.30 - 15.30
สถานที่ : ห้องประชุม Brunel ชั้น 1 อาคาร CBV @ AGC Vinythai Site 1





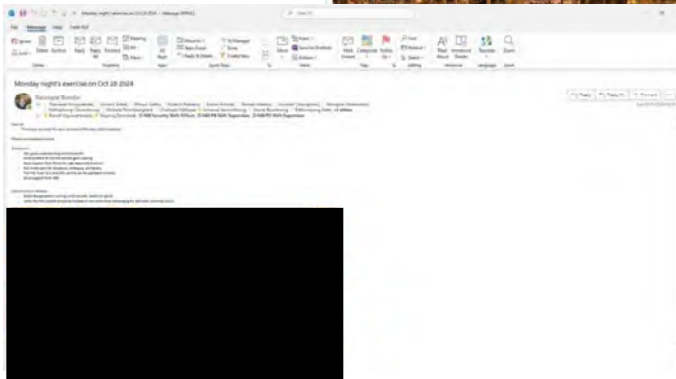
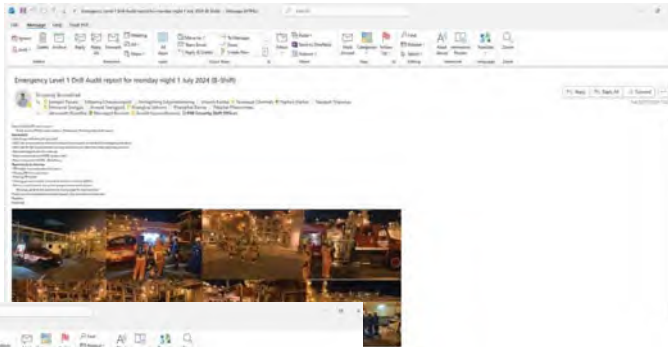
Emergency Exercise 2024

2024 SPRC Emergency Exercise Master Plan														
Month	Week	Level 1			Table Top Exercise On Every Friday						Emergency Exercise Level			
		Date	Shift	Area	Name of Unit & equipment	PPZ	2	3	Evac	Unit Spill	Fort			
January	week 1	1	5	C	AI	Pre-Incident Pina PN.A1.02C101 PVS pop up vibration had leak fire								
	week 2	8	12	D	A2	Pre-Incident Pina PN.A1.06C105 gas plant had leak cause rich mixture and H2S release								
	week 3	15	19	B	A3	Pre-Incident Pina PN.A1.28G107 Dump inlet had leak cause rich mixture and H2S release								
	week 4	22	26	A	A4	Pre-Incident Pina PN.A1.17C101 PVS pop up vibration had leak develop vapor cloud								
	week 5	29	2	C	A2	Pre-Incident Pina PN.A1.18E101 D had leak cause WCC vapor cloud release								
February	week 6	5	9	D	A3	Pre-Incident Pina PN.A1.03C101 inlet line flange had leak cause toxic gas release								
	week 7	12	16	B	A4	Pre-Incident Pina PN.A1.00G103 had leak at flange inlet cause over distillated H2S release and fire								
	week 8	19	23	A	A5	Pre-Incident Pina PN.A1.60D107 M gas tank								
	week 9	26	1	C	A3	Pre-Incident Pina PN.A1.17C107 discharge flange had leak cause rich mixture and H2S release								
	week 10	4	8	D	A4	Pre-Incident Pina PN.A1.16C107 Outlet flange failure had leak cause over distillated H2S release								
March	week 11	11	15	B	A5	Pre-Incident Pina PD.A5.60D103 (7) Crude tank								
	week 12	18	22	A	A5S	Pre-Incident Pina PD.A5.SPM Crude oil spill from turret at expansion joint (Oil Spill)								
	week 13	25	29	C	A4	Pre-Incident Pina PN.A1.17C107B3 mech vent had leak cause large volume of LPG vapor cloud								
	week 14	1	5	D	A5	Pre-Incident Pina PD.A5.60D103 (7) M AI								
	week 15	8	12	B	A5	Pre-Incident Pina PD.A5.60C105 gas plant at product pier (Spill)								
April	week 16	15	19	A	A1	Pre-Incident Pina PN.A1.02C141 MRC PVS pop up had leak and gas cloud								
	week 17	22	26	C	A5	Pre-Incident Pina PD.A5.60D103 (7)								
	week 18	29	3	D	A5M	Pre-Incident Pina PD.A5.60C105 gas plant at product pier (Spill)								
	week 19	6	10	B	A1	Pre-Incident Pina PN.A1.02108 Naphtha Splitter PVS pop up vibration had leak fire								
	week 20	13	17	A	A1	Pre-Incident Pina PN.A1.04E101 Dump failure cause asphalt leak and catch fire								
May	week 21	20	24	C	A5M	Pre-Incident Pina PD.A5.60C105 (7) (Close leak to pump room catch fire and explosion)								
	week 22	27	31	D	A1	Pre-Incident Pina PN.A1.02100101 Over top 42" reboiler jet fire by argument OWH catch and pool fire								
	week 23	3	7	B	A3	Pre-Incident Pina PN.A1.0310102B had leak at discharge flange cause over water and H2S release								
	week 24	10	14	A	A2	Pre-Incident Pina PN.A1.16C101 inlet line flange had leak cause rich mixture and pool fire								
	week 25	17	21	C	A1	Pre-Incident Pina PN.A1.02C109 PVS pop up vibration had leak fire								
June	week 26	24	28	D	A3	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 27	1	5	B	A4	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 28	8	12	D	A5	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 29	15	19	C	A3	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 30	22	26	A	A5	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
July	week 31	29	2	B	A4	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 32	6	10	A	A5	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 33	13	17	C	A3	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 34	20	24	D	A5	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 35	27	31	A	A5M	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
August	week 36	3	7	B	A4	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 37	10	14	A	A5	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 38	17	21	C	A3	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 39	24	28	D	A5	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 40	31	3	A	A5M	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
September	week 41	7	11	C	A3	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 42	14	18	D	A5	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 43	21	25	B	A1	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 44	28	1	A	A2	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 45	5	9	C	A5M	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
October	week 46	12	16	D	A3	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 47	19	23	A	A5	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 48	26	30	C	A1	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 49	3	7	B	A4	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 50	10	14	A	A5	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
November	week 51	17	21	C	A3	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 52	24	28	D	A5	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 53	1	5	B	A4	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 54	8	12	D	A5	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 55	15	19	A	A5M	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
December	week 56	22	26	C	A1	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 57	29	2	B	A4	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 58	6	10	A	A5	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 59	13	17	C	A3	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								
	week 60	20	24	D	A5	Pre-Incident Pina PN.A1.034101 Inlet flange failure had leak cause rich mixture and H2S release								

Emergency Exercise 2024

Level 1A Monday Night Exercise

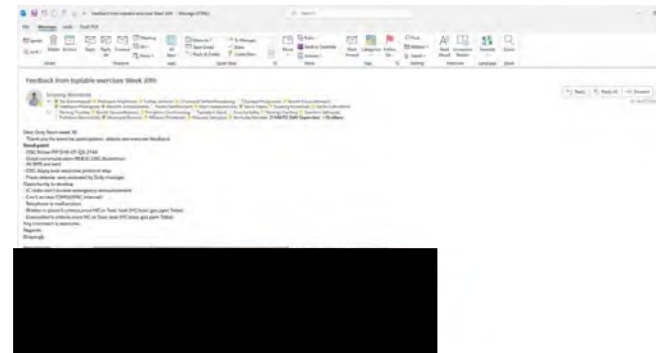
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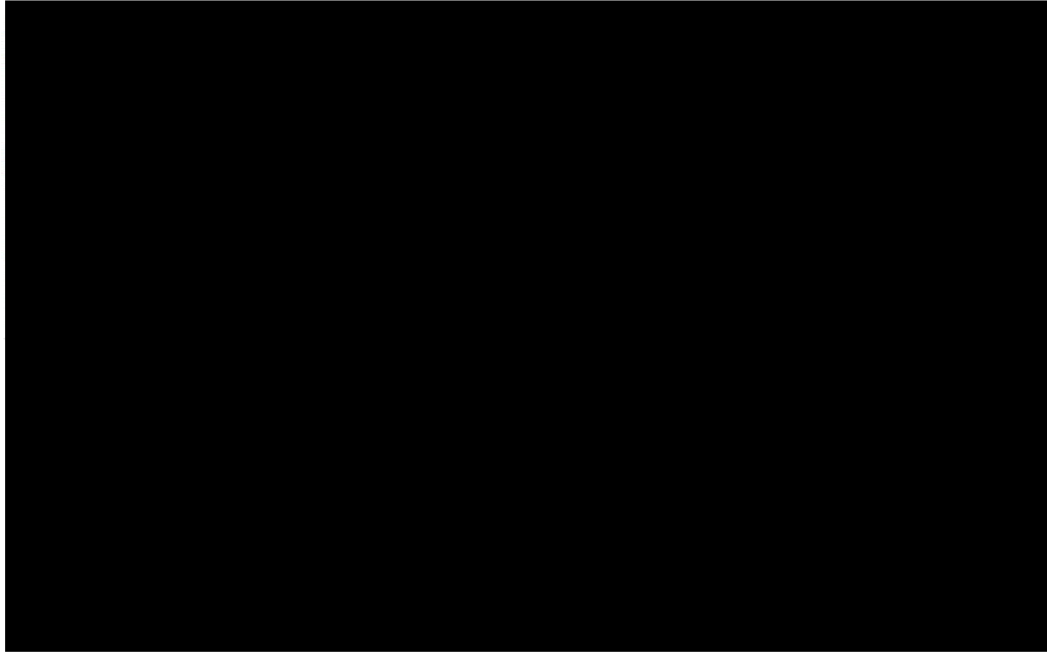
Emergency Exercise 2024

Level 1B Friday Table-Top Exercise

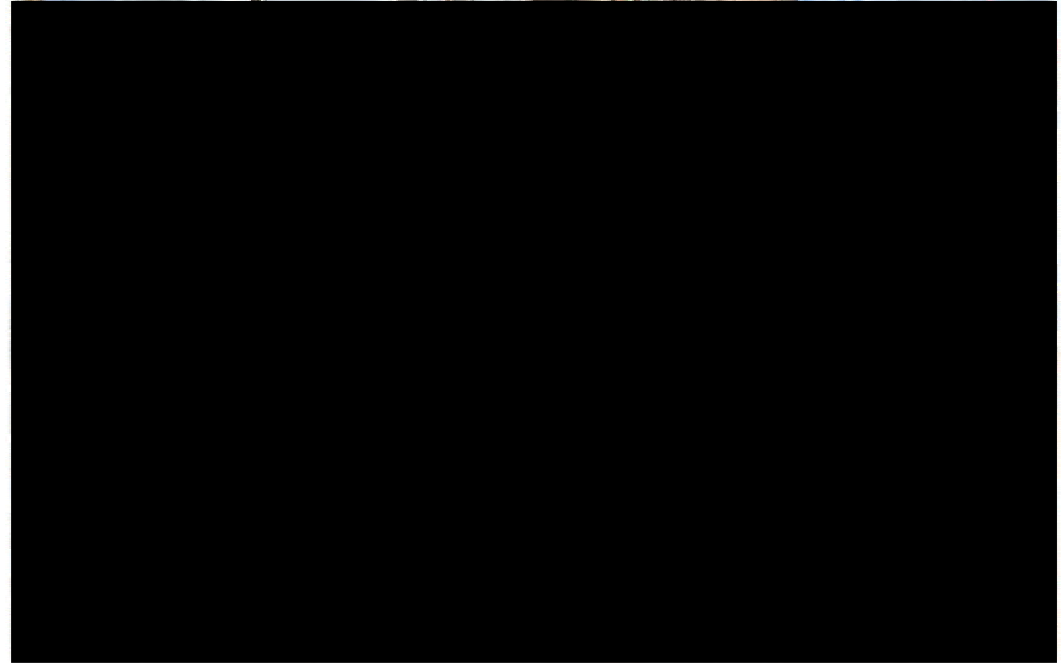
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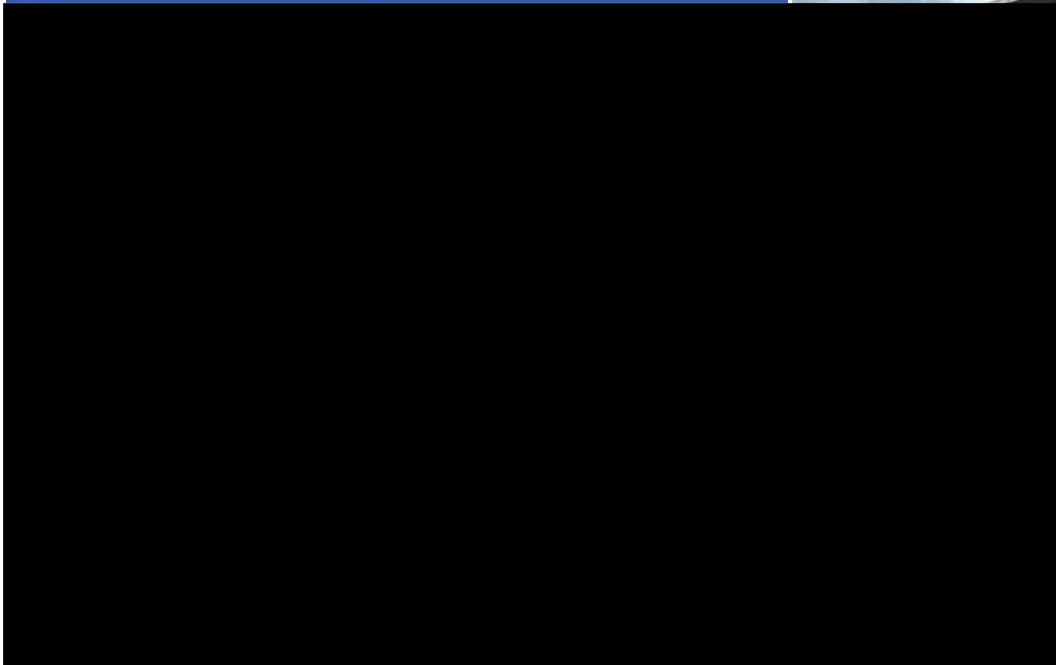
Emergency Exercise Level 2 at Diesel Tank Apr 2024



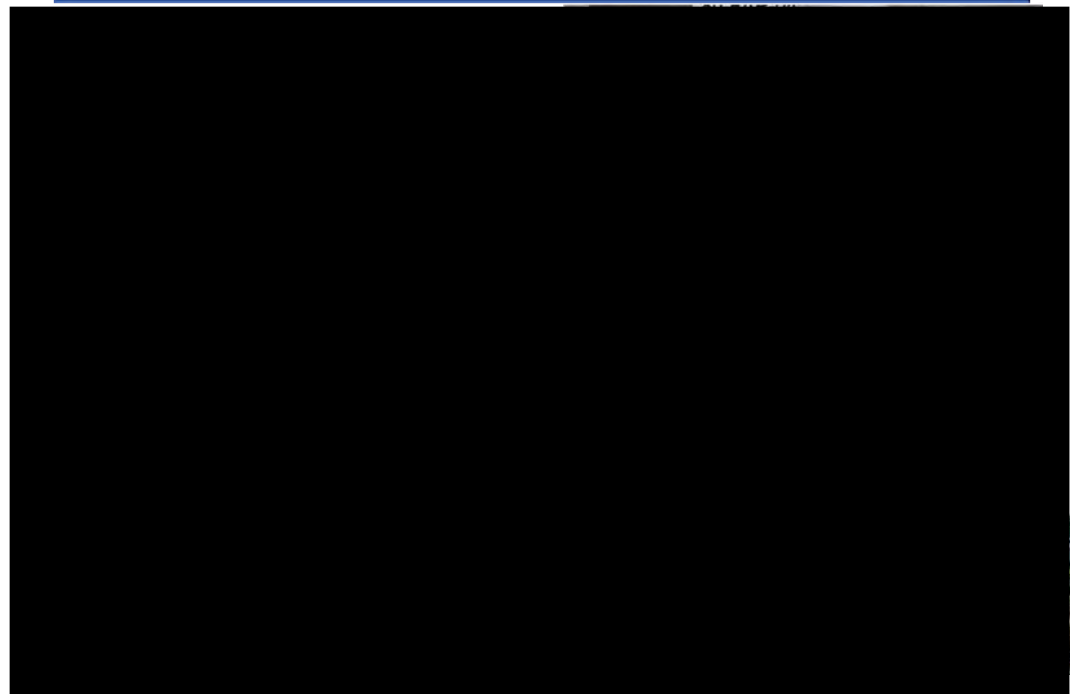
Emergency Exercise Level 2 at Jul 2024



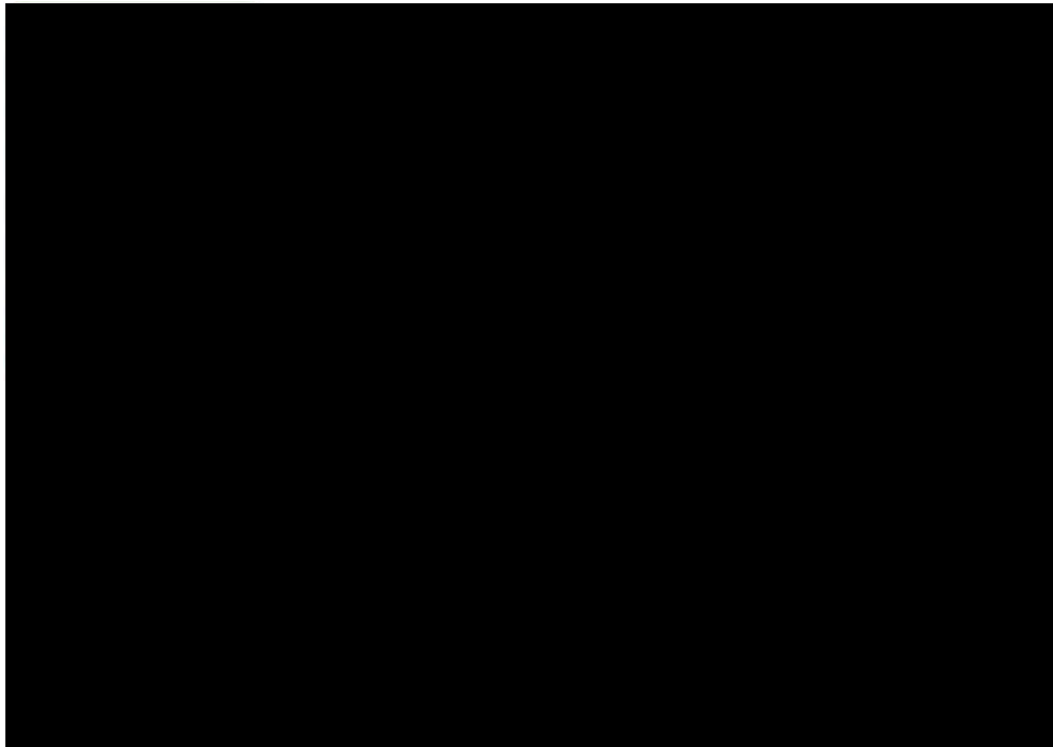
Emergency Exercise Level 3 at 60D312 Aug 2024



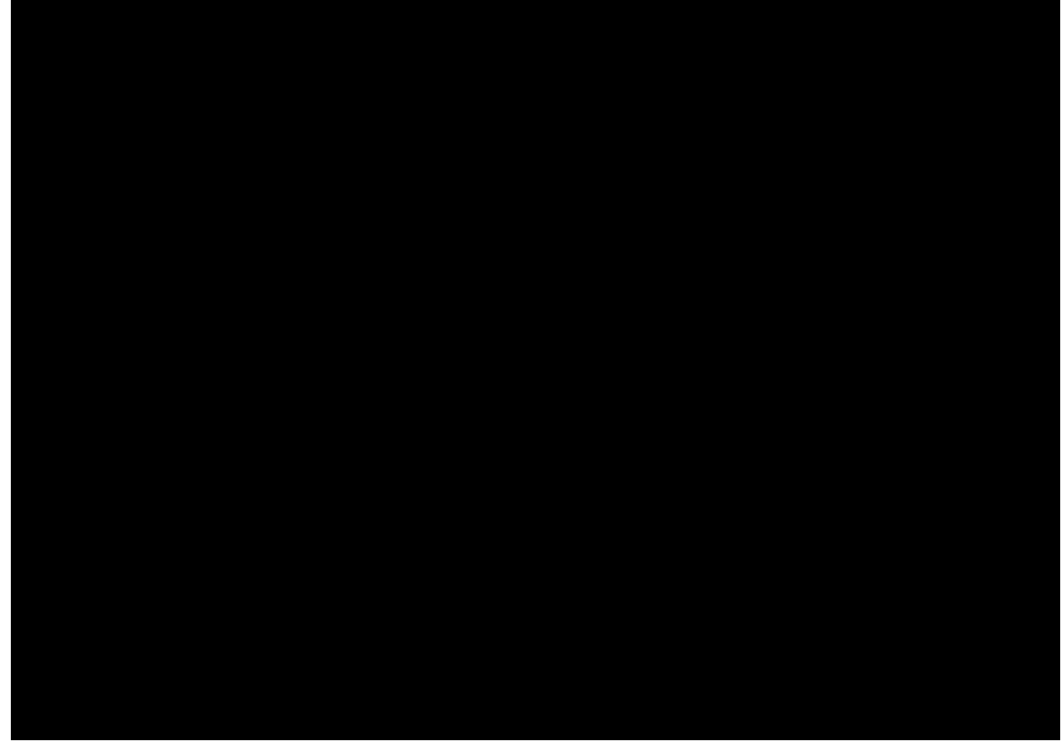
Building Evacuation Exercise in 2024



FFE inspection



การเข้าร่วมการฝึกซ้อม Rayong Oil Spill Exercise(ROSE) ประจำปี 2024



ภาคผนวก ข.23

การตรวจสอบภาพพนักงาน ประจำปี พ.ศ. 2567

ที่ HPC 392/2567

ศูนย์ส่งเสริมสุขภาพและอาชีวเวชศาสตร์

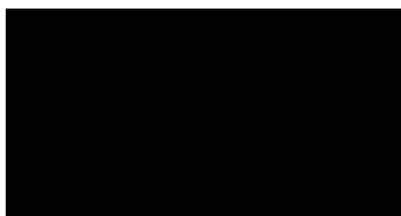
9 ธันวาคม 2567

เรียน ผู้จัดการฝ่ายทรัพยากรบุคคล

บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)

หนังสือฉบับนี้จัดทำขึ้นเพื่อรับรองว่า บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน) ได้ทำการตรวจสุขภาพพนักงานประจำปี 2567 ในวันที่ 13 กรกฎาคม 2567 ถึง วันที่ 8 พฤศจิกายน 2567 ซึ่งมีรายชื่อพนักงานเข้ารับการตรวจสุขภาพ จำนวน 530 คน กระทำการตรวจสุขภาพโดยศูนย์ส่งเสริมสุขภาพและอาชีวเวชศาสตร์ โรงพยาบาลกรุงเทพระยอง ตามใบอนุญาตให้ดำเนินการสถานพยาบาลเลขที่ ค.10201002057 และใบอนุญาตให้ประกอบกิจการเลขที่ 10201002657 ดำเนินการโดย บริษัทโรงพยาบาลกรุงเทพระยอง จำกัด ได้ทำการสรุปผลและรวบรวมผลการตรวจสุขภาพประจำปีไว้เป็นที่เรียบร้อยแล้ว และขอรับรองผลการตรวจสุขภาพว่าเป็นไปตามข้อกำหนดกฎกระทรวงในเรื่องกำหนดมาตรฐานการตรวจสุขภาพลูกจ้าง ซึ่งทำงานเกี่ยวกับปัจจัยเสี่ยง พ.ศ. 2563 และมาตรฐานด้านวิชาการทุกประการ

จึงเรียนมาเพื่อทราบ และขอขอบคุณมา ณ โอกาสนี้



แพทย์อาชีวเวชศาสตร์ โรงพยาบาลกรุงเทพระยอง



ผู้ช่วยผู้จัดการฝ่าย PCG 3

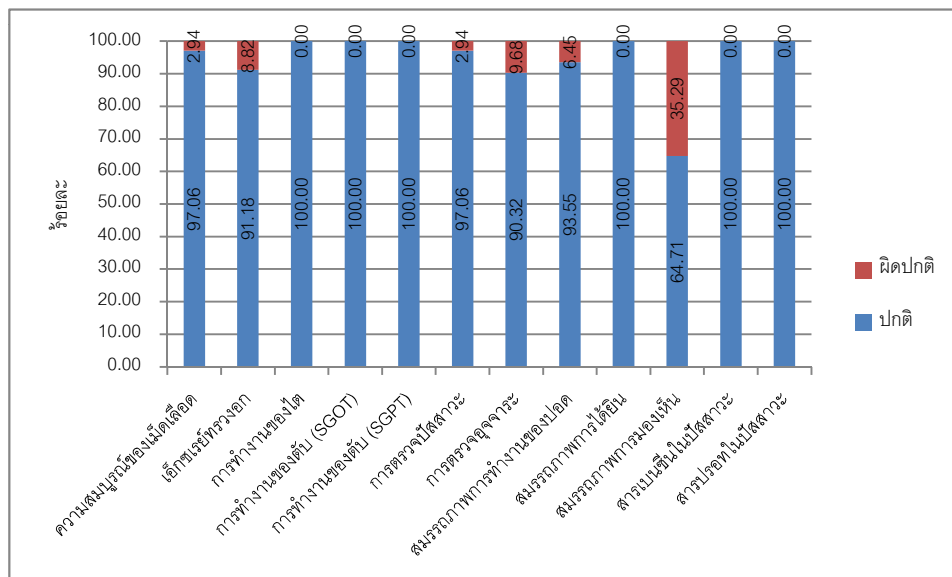
หากมีข้อสงสัยหรือต้องการรายละเอียดเพิ่มเติม

ศูนย์ส่งเสริมสุขภาพและอาชีวเวชศาสตร์ โทร. (038) 921999 ต่อ 1821

FAX : (038) 921999 ต่อ 1823

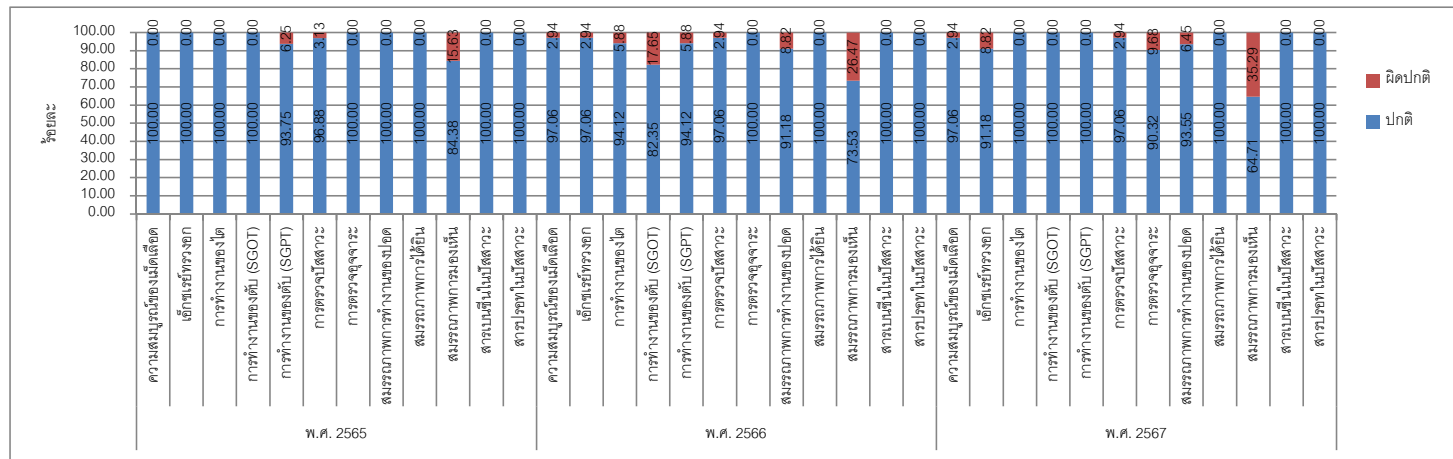
สถิติผลการตรวจสุขภาพพนักงาน ประจำปี พ.ศ. 2567
โครงการทำเทียบเรือ บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)
โดยโรงพยาบาลกรุงเทพระยอง

รายการตรวจ	พ.ศ. 2567				
	ผู้เข้ารับ การตรวจ	ปกติ	ผิดปกติ	ปกติ	ผิดปกติ
	(คน)	(คน)	(คน)	(ร้อยละ)	(ร้อยละ)
ความสมบูรณ์ของเม็ดเลือด	34	33	1	97.06	2.94
เอ็กซเรย์ทรวงอก	34	31	3	91.18	8.82
การทำงานของไต	34	34	0	100.00	0.00
การทำงานของตับ (SGOT)	34	34	0	100.00	0.00
การทำงานของตับ (SGPT)	34	34	0	100.00	0.00
การตรวจปัสสาวะ	34	33	1	97.06	2.94
การตรวจอุจจาระ	31	28	3	90.32	9.68
สมรรถภาพการทำงานของปอด	31	29	2	93.55	6.45
สมรรถภาพการได้ยิน	32	32	0	100.00	0.00
สมรรถภาพการมองเห็น	34	22	12	64.71	35.29
สารเบนซีนในปัสสาวะ	33	33	0	100.00	0.00
สารปรอทในปัสสาวะ	33	33	0	100.00	0.00



สถิติผลการตรวจสอบสภาพพนักงาน ระหว่างปี พ.ศ. 2565-2567
โครงการทำเทียบเรือ บริษัท สตาร์ ปิโตรเลียม รีไฟน์นิ่ง จำกัด (มหาชน)

รายการตรวจ	พ.ศ. 2565					พ.ศ. 2566					พ.ศ. 2567				
	ผู้เข้ารับ การตรวจ	ปกติ	ผิดปกติ	ปกติ	ผิดปกติ	ผู้เข้ารับ การตรวจ	ปกติ	ผิดปกติ	ปกติ	ผิดปกติ	ผู้เข้ารับ การตรวจ	ปกติ	ผิดปกติ	ปกติ	ผิดปกติ
	(คน)	(คน)	(คน)	(ร้อยละ)	(ร้อยละ)	(คน)	(คน)	(คน)	(ร้อยละ)	(ร้อยละ)	(คน)	(คน)	(คน)	(ร้อยละ)	(ร้อยละ)
ความสมบูรณ์ของเม็ดเลือด	32	32	0	100.00	0.00	34	33	1	97.06	2.94	34	33	1	97.06	2.94
เอ็กซเรย์ทรวงอก	32	32	0	100.00	0.00	34	33	1	97.06	2.94	34	31	3	91.18	8.82
การทำงานของไต	32	32	0	100.00	0.00	34	32	2	94.12	5.88	34	34	0	100.00	0.00
การทำงานของตับ (SGOT)	32	32	0	100.00	0.00	34	28	6	82.35	17.65	34	34	0	100.00	0.00
การทำงานของตับ (SGPT)	32	30	2	93.75	6.25	34	32	2	94.12	5.88	34	34	0	100.00	0.00
การตรวจปัสสาวะ	32	31	1	96.88	3.13	34	33	1	97.06	2.94	34	33	1	97.06	2.94
การตรวจอุจจาระ	24	24	0	100.00	0.00	28	28	0	100.00	0.00	31	28	3	90.32	9.68
สมรรถภาพการทำงานของปอด	32	32	0	100.00	0.00	34	31	3	91.18	8.82	31	29	2	93.55	6.45
สมรรถภาพการได้ยิน	31	31	0	100.00	0.00	34	34	0	100.00	0.00	32	32	0	100.00	0.00
สมรรถภาพการมองเห็น	32	27	5	84.38	15.63	34	25	9	73.53	26.47	34	22	12	64.71	35.29
สารเบนซินในปัสสาวะ	31	31	0	100.00	0.00	34	34	0	100.00	0.00	33	33	0	100.00	0.00
สารปรอทในปัสสาวะ	31	31	0	100.00	0.00	34	34	0	100.00	0.00	33	33	0	100.00	0.00



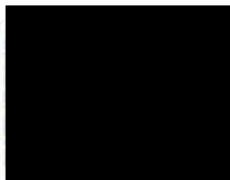
ภาคผนวก ข.24

กิจกรรมส่งเสริมสุขภาพและความปลอดภัย



กิจกรรมส่งเสริมความปลอดภัย

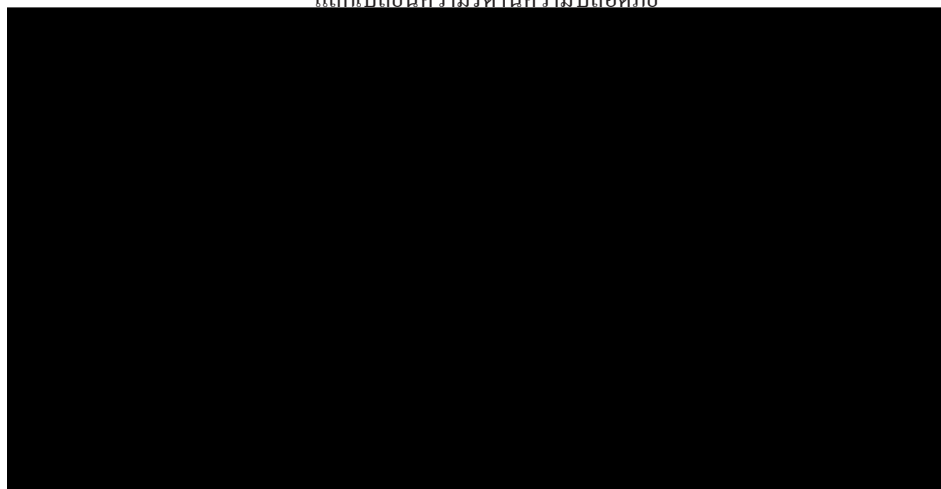
มิถุนายน – ธันวาคม 2567



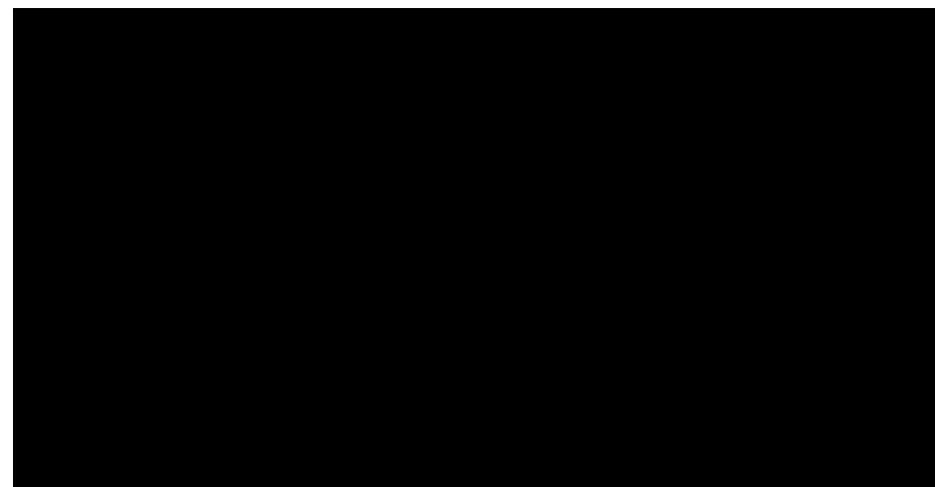
*"One family ...
fueling the future
of Thailand"*

กิจกรรมทบทวนวัฒนธรรมความปลอดภัย

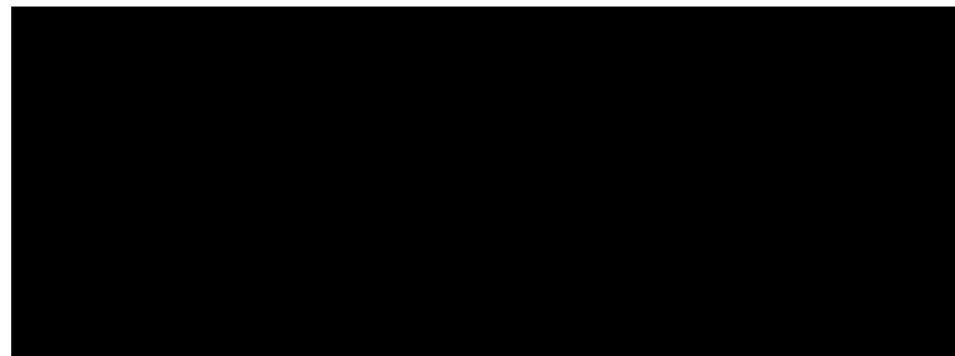
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แลกเปลี่ยนความรู้ด้านความปลอดภัย



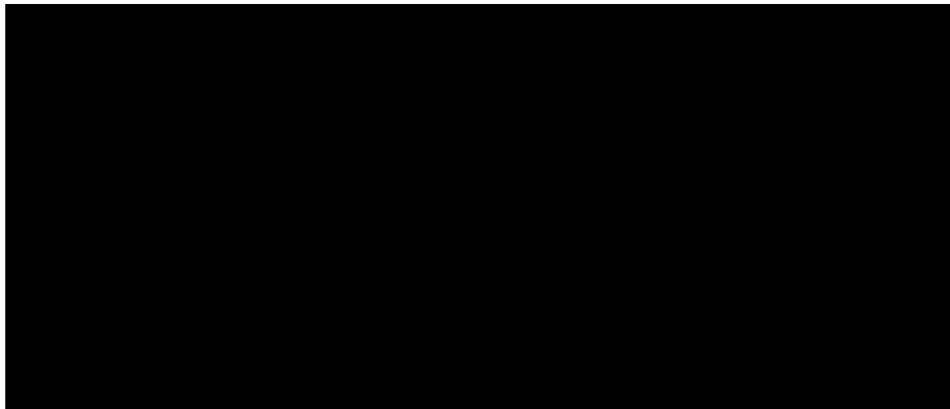
กิจกรรมฉลองการทำงานครบ 2 ล้านชั่วโมง
โดยปราศจากการบาดเจ็บขั้นบันทีก



การตรวจวัดคุณภาพอาหารที่โรงอาหารเป็นประจำทุกเดือน

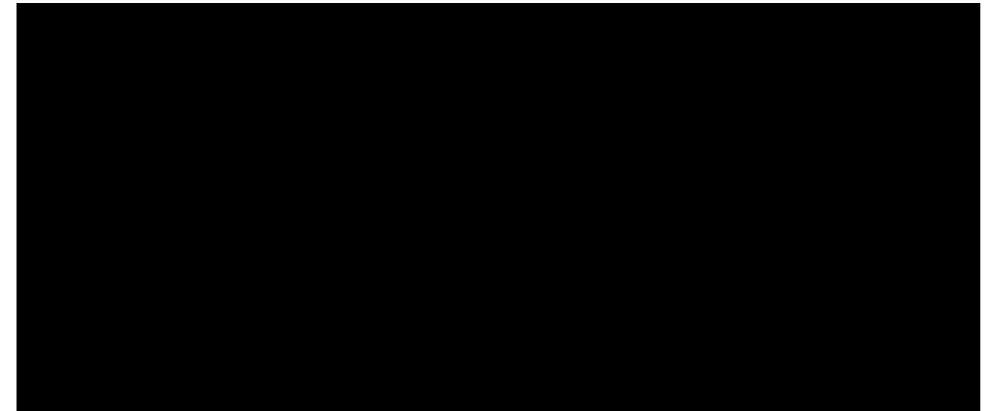


การตรวจคุณภาพน้ำประจำเดือน



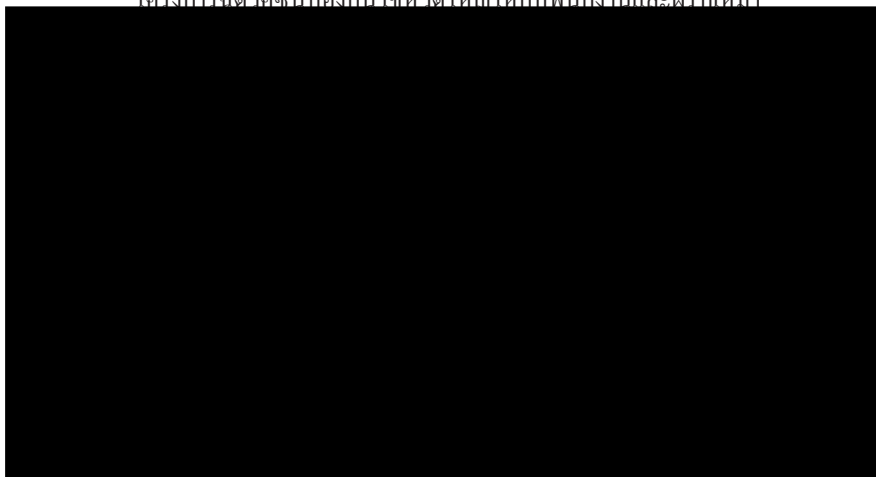
กิจกรรมส่งเสริมเรื่องสุขภาพ

ทำ Functional Capacity Evaluation เพื่อประเมินสุขภาพที่มดบเพลิง



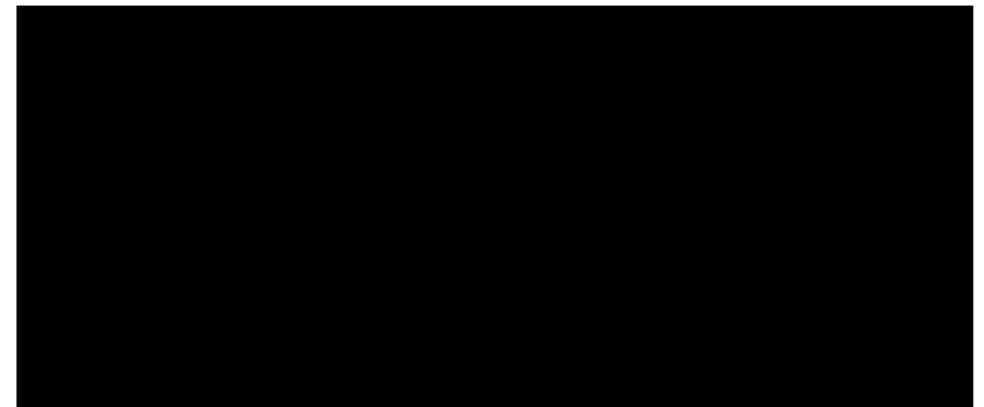
กิจกรรมส่งเสริมเรื่องสุขภาพ

โครงการจัดซื้อไม้คองกับไม้หัวดใหกับเพื่องานและผูรับเนา



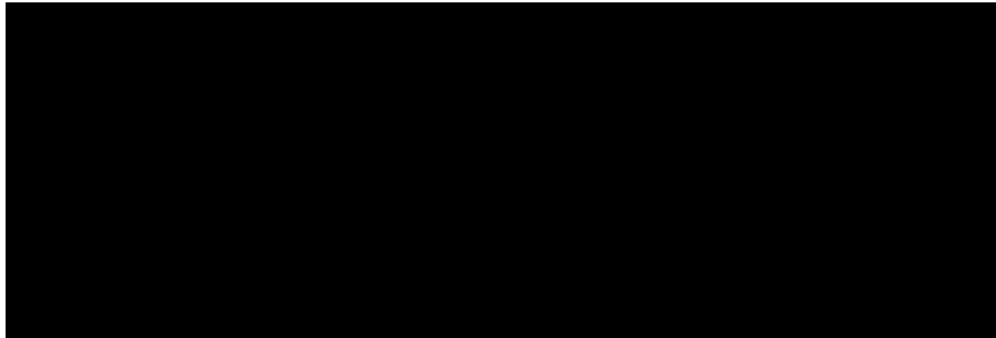
กิจกรรมส่งเสริมเรื่องสุขภาพ

ทำ Fit Test เพื่อประเมินความพร้อมสุขภาพที่มการทำงานในกิจกรรมที่มีความเสี่ยงสูง
เช่นการทำงานในที่อับอากาศ การทำงานที่สูง



กิจกรรมส่งเสริมเรื่องสุขภาพ

โครงการ SPRC Get Fit Challenge 2024 เพื่อส่งเสริมให้พนักงานออกกำลังกายและรับประทานอาหารสุขภาพ



กิจกรรมส่งเสริมเรื่องสุขภาพ

โครงการ SPRC Get Fit Challenge 2024 เพื่อส่งเสริมให้พนักงานออกกำลังกายและรับประทานอาหารสุขภาพ



กิจกรรมส่งเสริมเรื่องสุขภาพ

โครงการกินถูกสัดส่วน 2:1:1 ลดพุง ลดโรค (Free Salad bar available at canteen) ฟรีสลัดและผลไม้เพื่อสุขภาพให้พนักงาน

Request Update C



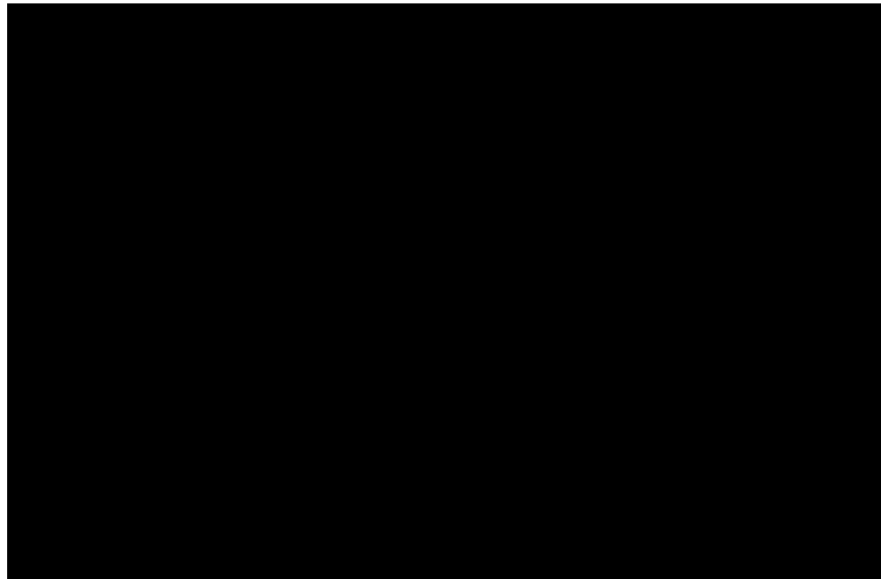
กิจกรรมส่งเสริมเรื่องสุขภาพ

จัดอบรม First Aid and CPR ให้กับพนักงานเพื่อทบทวนและฝึกการปฏิบัติช่วยเหลือชีวิต

Request Update C



การตรวจวัดคุณภาพอากาศในสถานที่ทำงาน



กิจกรรมรณรงค์ให้รายงานเหตุการณ์เฉียด (Near Miss)

SPRC ร่วมด้วยช่วยกันรายงาน
เหตุการณ์เฉียด/เกือบเกิดอุบัติเหตุ (Near Miss)
เพื่อป้องกันไม่ให้เกิดอุบัติเหตุเกิดขึ้น

พบเห็น **Near Miss**
ให้รายงาน
ง่าย ๆ แค่สแกน
QR Code

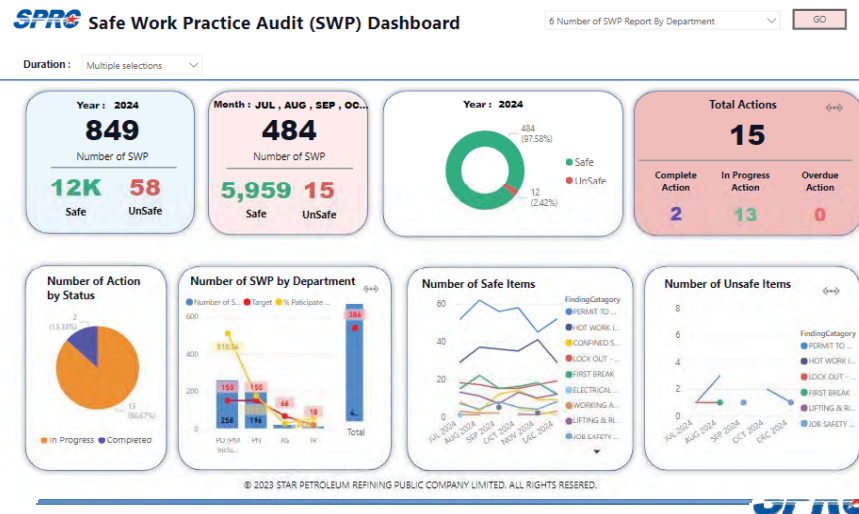
รายงานออนไลน์
ลุ้นรับรางวัล ประจำเดือน

Let's report "Near Misses" to prevent "Incident"

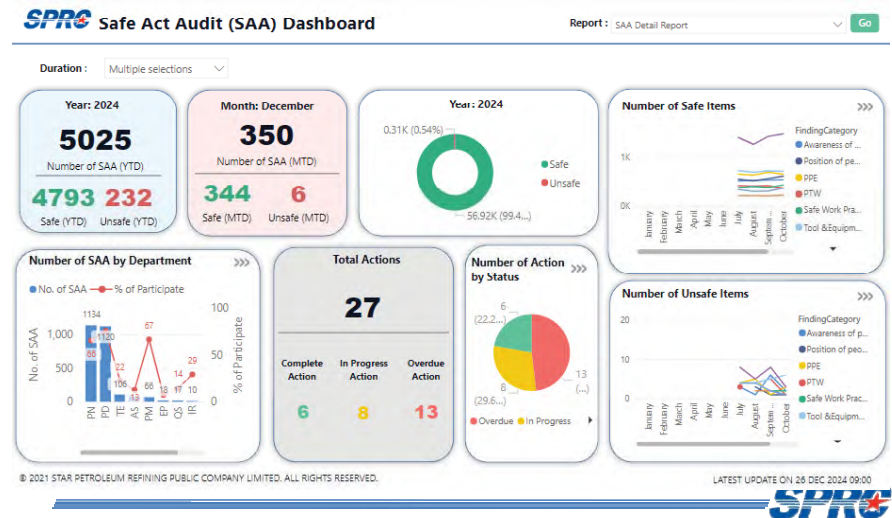
Report Near Miss

SPRC

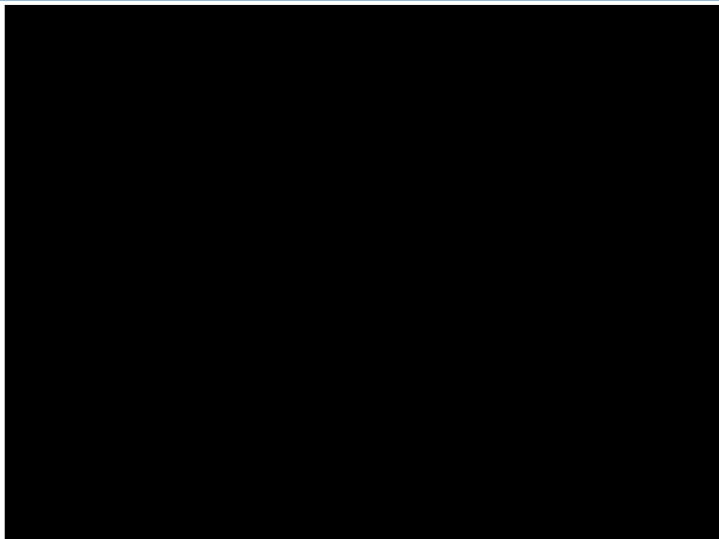
การเดินตรวจความปลอดภัย (SWP Audit) ระหว่างเดือน มิถุนายน – ธันวาคม 2567



การเดินตรวจความปลอดภัย (SAA Audit) ระหว่างเดือน มิถุนายน – ธันวาคม 2567



กิจกรรม Tool Box Talk ประจำสัปดาห์



ภาคผนวก ข.25

ขั้นตอนการปฏิบัติในการล้างท่อรับน้ำมันและ SPM
ก่อนการซ่อมบำรุงระบบท่อ



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1. Introduction

1.1 Purpose

This procedure provides the necessary information to carry out a seawater flush of the surface and sub sea hose strings using SPM Maintenance boat pumps. Only seawater will remain in the hoses prior to disconnection for maintenance.

1.2 Notes, Cautions, and Warnings

This procedure uses the following symbols to draw the Operator's attention to the steps in the procedure that are particularly important or may lead to safety hazards if done incorrectly.



NOTE: General information useful to understand a particular step in the procedure.



CAUTION: A step that, if done incorrectly, could cause a safety hazard leading to personal injury, equipment or environmental damage, or a delay.



WARNING: A step that, if done incorrectly, could cause a serious safety hazard leading to death, serious personal injury, major equipment damage, fire or a large environmental release.

2. Seawater Flushing Procedure

To ensure there is no oil pollution or environmental impact when the hose string is disconnected for changing hoses and maintenance of hose ancillary equipment.

2.1 Preparation Prior to Tanker completing cargo discharge operations.



CAUTION: A step that, if done incorrectly, could cause a safety hazard leading to personal injury, equipment or environmental damage, or a delay.

2.1.1 For flushing seawater with diving operations.

2.1.1.1 The SPM Maintenance Boat deck to be cleared of obstructions.

2.1.1.2 Prepare Permit to Work for Hoses flushing operation and diving operation.

2.1.1.3 Sufficient VHF handsets to be available for communications between SPM, Dive control and SPM Maintenance Boat

2.1.2 For flushing seawater without diving operations.

2.1.2.1 SPM Maintenance Boat deck to be cleared of obstructions.

2.1.2.2 Prepare Permit to Work for Hoses flushing operation.

2.1.2.3 Sufficient VHF handsets to be available for communications between SPM and SPM Maintenance Boat

3. Flushing Procedure

On completion of Tanker discharging operations and tanker was un-berthing and clear from the SPM

3.1 For flushing seawater with diving operations.

3.1.1 The SPM Maintenance Boat anchor and moor to SPM. Deck port string and deck starboard string. End of starboard string on deck, set up for flushing flange.

3.1.2 During this time the shore tank which is to receive the oil from the flush should be measured so that an accurate estimate can be made on completion of the seawater used in the flush.

3.1.3 Divers to prepare for diving operations i.e. to close PLEM valves.

3.1.4 Close port string butterfly valve and open starboard string butterfly valve (at the hose end on SPM Maintenance Boat)

3.1.5 Commence pumping Clean Seawater, from the SPM Maintenance Boat FIFI system down the Starboard hose string. SPM Maintenance Boat to pump at 10 bar (10.2 kg). Estimated quantity pumped = 700 m3. **During this time the diver is to open the Pigging valve No.6 and Crossover valve No.4 for 2 minutes and then close both valves.**

Diver to commence closing 24 inch PLEM valve No 7, prior to stopping pumping from SPM Maintenance Boat.



CAUTION: When commencing to close PLEM valve, while still pumping, ensure SPM pressure gauge reading does not increase above 10 bar (10.2 kg).

3.1.6 SPM Maintenance Boat to stop pumping to enable divers to fully close PLEM valve No 7.


3.1.7 Close Starboard string butterfly valve and Open Port string butterfly valve on deck of the SPM Maintenance Boat.

3.1.8 Repeat the procedure for flushing the Port hose string. Pigging line No.3 will be opened for 2 minutes and then closed. **(DO NOT open Cross over valve No.4)** Closing PLEM valve No. 2 on completion. Estimated quantity pumped = 700 m3

3.1.9 Divers to confirm that both PLEM valves are closed.




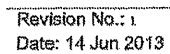
WARNING: Leaving a PLEM valve open could result in a release of oil when the PLEM hose connections are unbolted.

- 3.1.10 Divers to open 10 inch cross over valve No 4, between 24 inch branch lines.
- 3.1.11 Open both butterfly valves for port & starboard hose string (On the deck of SPM Maintenance Boat)
- 3.1.12 Using FiFi system on The SPM Maintenance Boat flush clean seawater down port string and back to the starboard string via PLEM 10" cross over and discharge to Iso tank on deck of SPM Maintenance Boat for checking whether have oil or not. In case no oil contents, Stop pumping.
- 3.1.13 Close both SPM moon pool 24" valves and both SPM deck 24" valves.
-  **NOTE:** The following additional flush may be done.
- 3.1.14 Open SPM deck 10" cross over valve. Close port & starboard 24" SPM deck valve.
- 3.1.15 Using FiFi system on SPM Maintenance Boat flush clean seawater down port string and back to Starboard string via deck 10" cross over and discharge to ISO tank.
- 3.1.16 Take sample of returning seawater at ISO tank to ensure there is no oil content.
- 3.1.17 Stop pumping. Reduce the SPM Maintenance Boat and SPM pressure to zero.
- 3.1.18 Close SPM deck 10" cross over.
- 3.1.19 The shore tank which has received the crude during the flushing, can now be measured and the quantity of the flush received into the tank calculated.

3.2 For flushing seawater without diving operations.

- 3.2.1 SPM Maintenance Boat anchor and moor to SPM. Deck port string and deck starboard string. End of port & starboard string on deck, set up for flushing flange.

- 3.2.2 The shore tank which is to receive the oil from the flush should be measured so that an accurate estimate can be made on completion of the seawater used in the flush.
- 3.2.3 Close port string butterfly valve and open starboard string butterfly valve (at the hose end on SPM Maintenance Boat)
- 3.2.4 Commence pumping Clean Seawater, from the SPM Maintenance Boat FiFi system, down the Starboard hose string. SPM Maintenance Boat to pump at 10 bar. Estimated quantity pumped = 700 m3.
- 3.2.5 Take sample of the seawater on SPM (for starboard string)to confirm that no oil contents before stop pumping. Stop pumping.
- 3.2.6 Close starboard string butterfly valve and open port string butterfly valve.
- 3.2.7 Pumping clean seawater from the SPM Maintenance Boat FiFi system down the port string. SPM Maintenance Boat to pump at 10 bar (10.2 kg). Estimate quantity pumped = 700 m3.
- 3.2.8 Take sample of the water on SPM (for port string)to confirm that no oil contents before stop pumping. Stop pumping.
-  **NOTE:** The following additional flush may be done.
- 3.2.9 Open SPM deck 10" crossover valve. Close port & starboard 24" SPM deck valve.
- 3.2.10 Using FiFi system on SPM Maintenance Boat flush clean seawater down port string and back to starboard string via deck 10" cross over and discharge to Iso tank.
- 3.2.11 Take sample of returning water at Iso tank to ensure there is no oil content.
- 3.2.12 Stop pumping. Reduce SPM Maintenance Boat & SPM pressure to zero.
- 3.2.13 Close SPM deck 10" cross over.
- 3.2.14 The shore tank which has received the crude during the flushing, can now be ullaged and the quantity of the flush received into the tank calculated.



ภาคผนวก ข.26

การตรวจสอบอุปกรณ์การสูบน้ำมันก่อนเรือขนส่งน้ำมันเข้าเทียบท่า

Movement/Dispatches		
SPRC Plant 66 Pre Berth Checklist		
Prepared by: [REDACTED]	Number: HC-FO-PD-6022	
Approved by: Opas Waiyasatja	Revision: 4.1	
Low	Medium	High

Pre-Berth Checklist

Vessel Name	[REDACTED]
Date	[REDACTED]
Berth	[REDACTED]

Who	Step	Action	Check
Detailed Activities			
OP	1.	Verify Fire and Foam pumps are available and ready for service. <ul style="list-style-type: none"> 66G701 Electrical Fire Pump 66G702 Diesel Engine Fire Pump 66G704 Foam Pump 67G117 Jockey pump 	<input checked="" type="checkbox"/>
OP	2.	Verify Fire equipment's are available and ready for immediately use. <ul style="list-style-type: none"> Fire monitors are correctly set up Dry powder cart 150 lb International shore fire connection (Bolt, nut, gasget and corrosive check) 	<input checked="" type="checkbox"/>
OP	3.	Verify safety equipments are available and ready for use. <ul style="list-style-type: none"> SCBA Life buoy Fixed Gas detectors. (Product pier Sub. and LPG pier) 	<input checked="" type="checkbox"/>
OP	4.	Verify shore access gangway in stowed position and no damage.	<input checked="" type="checkbox"/>
OP	5.	Verify berth fenders no damage for safe mooring.	<input checked="" type="checkbox"/>
OP	6.	Verify Loading arm and hydraulic system are ready for use. <ul style="list-style-type: none"> Hydraulic oil level/Pump/Pressure/Leak Perform the loading arm function test, check Couplers and O-ring. (For Import/Export shipment) 	<input checked="" type="checkbox"/>

Revision No.: 4.1

Date: 20 August 2018

This is a controlled document and must be used within 7 days of printing 12 December, 2024

HC-FO-PD-6022

Page 1 of 2

Movement/Dispatches		
SPRC Plant 66 Pre Berth Checklist		
Prepared by: [REDACTED]	Number: HC-FO-PD-6022	
Approved by: Opas Waiyasatja	Revision: 4.1	
Low	Medium	High

Pre-Berth Checklist

Vessel Name	[REDACTED]
Date	[REDACTED]
Berth	[REDACTED]

Who	Step	Action	Check
Detailed Activities			
OP	1.	Verify Fire and Foam pumps are available and ready for service. <ul style="list-style-type: none"> 66G701 Electrical Fire Pump 66G702 Diesel Engine Fire Pump 66G704 Foam Pump 67G117 Jockey pump 	<input checked="" type="checkbox"/>
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OP	3.	Verify safety equipments are available and ready for use. <ul style="list-style-type: none"> SCBA Life buoy Fixed Gas detectors. (Product pier Sub. and LPG pier) 	<input checked="" type="checkbox"/>
OP	4.	Verify shore access gangway in stowed position and no damage.	<input checked="" type="checkbox"/>
OP	5.	Verify berth fenders no damage for safe mooring.	<input checked="" type="checkbox"/>
OP	6.	Verify Loading arm and hydraulic system are ready for use. <ul style="list-style-type: none"> Hydraulic oil level/Pump/Pressure/Leak Perform the loading arm function test, check Couplers and O-ring. (For Import/Export shipment) 	<input checked="" type="checkbox"/>

Revision No.: 4.1

Date: 20 August 2018

This is a controlled document and must be used within 7 days of printing 12 December, 2024

HC-FO-PD-6022

Page 1 of 2

Who	Step	Action	Check
OP	7.	Verify loading arm is emptied before connection.	<input checked="" type="checkbox"/>
OP	8.	Verify all vent and drain valves in metering skid are closed.	<input checked="" type="checkbox"/>
OP	9.	Verify injector systems are correctly line up and ready for use. <ul style="list-style-type: none"> Orange dye Green dye Lubricity Marker 	<input checked="" type="checkbox"/>
NOTE Ensure loading arm drain point and branch line which on service for LSWR/Crude high pour-point are properly flush/drain after discharge completed that to prevent line plug.			
LM	10.	Verify ship vetting status in the Coaster suitability list.	<input checked="" type="checkbox"/>
CAUTION FOR: New Vessel or First shipment in SPRC Marine terminal			
LM	11.	Verify all ship documents as required for new vessel are available. <ul style="list-style-type: none"> Ship particular Approved of ship's tank table calibration for old ship Pre-approval of ship's tank calibration for new ship (หนังสือขอทำการสอบเทียบปริมาณความจุของถังเรือ) ใบรับแจ้งเป็นผู้ขนส่งน้ำมันเชื้อเพลิง ตามมาตรา 12 ทวิ ใบอนุญาตใช้เรือของกรมเจ้าท่า (ทะเบียนเรือ) 	<input checked="" type="checkbox"/>
Check By: [REDACTED]			
END OF TASK			

Who	Step	Action	Check
OP	7.	Verify loading arm is emptied before connection.	<input checked="" type="checkbox"/>
OP	8.	Verify all vent and drain valves in metering skid are closed.	<input checked="" type="checkbox"/>
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NOTE Ensure loading arm drain point and branch line which on service for LSWR/Crude high pour-point are properly flush/drain after discharge completed that to prevent line plug.			
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Check By: [REDACTED]			
END OF TASK			

ภาคผนวก ข.27

คู่มือการขนถ่ายน้ำมันดิบ


Movement/Dispatches			
 Plant 60 Crude Oil Import via SPM			
Prepared by:	Sarayut Jantima	Number:	HC-WI-PD-5391
Approved by:	Nub Tunyasith	Revision:	5.1
Low		Medium	
		High	

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Purpose

The purpose of this procedure is to be taken for safely crude unloading step and crude tank switching from SPM to SPRC.

System Information

Summary





This procedure is explain and instruction covers the operational steps for receiving crude oil import from SPM (Single Point Mooring) which can route to any of the 7 crude oil tanks of SPRC and also can route to PTTGC.

Roles and Responsibility

Deviation from the procedure must be stopped and informed a line supervisor or line manager, concerned people for a solution prior to executing this procedure.

- DCS Operator**
 - Verify crude discharge plan
 - Compare the unloading outturn figure with ship and discharge plan
 - Prepare document for custom
 - Verify tank receiving volume hourly with DCS Marine
- Operator**
 - Verify cargo surveyor seal valves and tanks
 - Line up to nominated crude unloading tanks
 - Check leak during tank unloading
 - Prepare crude water drain off for no water present
 - Sample crude for lab analysis lab test report



Precautions



 CAUTION	Crude oil contain the high H ₂ S and Hg, inhalation may cause dizziness, headache and instantly fatal. PPE, organic respirator, mercury vapor cartridge and H ₂ S monitor must require when working.
 CAUTION	The last crude import tank shall leave crude import MOVs valve opened position to prevent crude import lines the thermal expansion.
 NOTE	Crude tank 60D103 - 60D107 allow to receive high pour point crude and demulsifier chemical injection.
 NOTE	Effective demulsifier chemical reaction with free water in crude requires temperature 38 - 40 degree C, then crude heat up shall operate crude oil and circulate via heater until get the temperature 38 - 40 degree C.

Prerequisites

- Crude tank always de water every shift
- Create sample for LTR in the Star Lim system as method following;
 - ASTM D4007 - 81: Water & Sediment in Crude Oil by Centrifuge
 - ASTM D5002 - 13: Density at 15 degree C.

Detailed Activities

Who	Step	Action		Check
1. Tank Preparation				
OP DCS	1.1	Verify the crude discharge plan for; <ul style="list-style-type: none">◦ Crude tanker estimate time arrival (ETA)◦ Nominated tank and lifting volume◦ Crude type◦ Cargo surveyor◦ Tanker sample as per crude schedule requirement◦ Special guide line for crude sample◦ Special guide line for chemical injection		<input type="checkbox"/>
DCS	1.2	Verify reconstituted crude must be switched out to next nominated crude tank at least 24 Hrs.		<input type="checkbox"/>
 WARNING		Crude oil contain the high H ₂ S and Hg, inhalation may cause dizziness, headache and instantly fatal. PPE, organinc respirator, mercury vapor cartridge and H ₂ S monitor must require when working.		
OP	1.3	Notify helper operator to de water nominated crude tank until no water present.		<input type="checkbox"/>
DCS	1.4	IF	THEN	<input type="checkbox"/>
		Nominated crude tank can not completely de water before crude unloading 30 minutes.	Notify shift supervisor to consult with crude scheduler for LT approval, do not proceed to the next step until LT approved.	
 NOTE		Crude tank mixers must stop before tank open gauge at least 2 hrs.		
	1.5	Notify to cargo surveyor witness for;		
OP	1.5.1	Verify nominated crude tank no water represent.		<input type="checkbox"/>
OP	1.5.2	Seal all valves as nominated crude tank in discharge plan.		<input type="checkbox"/>
OP	1.5.3	Collect crude oil sampling.		<input type="checkbox"/>
END OF TASK				

Who	Step	Action	Check												
2. Sample analysis															
<div><div> CAUTION</div><div>Crude oil contain the high H₂S and Hg, inhalation may cause dizziness, headache and instantly fatal. PPE, organinc respirator, mercury vapor cartridge and H₂S monitor must require when working.</div></div>															
<div><div>Crude tank require to sample for mass balance as sampling point level available.</div><table><tr><th>Sample point</th><th>Level (mm)</th><th>Amount (bottles)</th></tr><tr><td>Bottom</td><td>1,500 - 6,000</td><td>2</td></tr><tr><td>Middle</td><td>6,001 - 11,000</td><td>2</td></tr><tr><td>Top</td><td>Above 11,000</td><td>2</td></tr></table></div>				Sample point	Level (mm)	Amount (bottles)	Bottom	1,500 - 6,000	2	Middle	6,001 - 11,000	2	Top	Above 11,000	2
Sample point	Level (mm)	Amount (bottles)													
Bottom	1,500 - 6,000	2													
Middle	6,001 - 11,000	2													
Top	Above 11,000	2													
OP	2.1	Collect nominated crude tank sample to lab for analysis.	<input type="checkbox"/>												
<div><div> CAUTION</div><div>Crude sample which contain H₂S greater than 600 ppm shall not be admitted into the SPRC laboratory.</div></div>															
SS	2.2	<table><tr><th>IF</th><th>THEN</th></tr><tr><td>Crude sample get H₂S result greater than 600 ppm.</td><td>Consult with PD shift supervisor to delivery crude sample to Nalco laboratory.</td></tr></table>	IF	THEN	Crude sample get H ₂ S result greater than 600 ppm.	Consult with PD shift supervisor to delivery crude sample to Nalco laboratory.	<input type="checkbox"/>								
IF	THEN														
Crude sample get H ₂ S result greater than 600 ppm.	Consult with PD shift supervisor to delivery crude sample to Nalco laboratory.														
END OF TASK															

Who	Step	Action	Check																				
3. Crude header preparation																							
3.1 SPRC/PTTGC line up																							
<p>There is interlock defeat switch 01KSA013 to bypass the logic, normally it has to be in OFF position. The interlock defeat switch is only available for the site SPRC/PTTGC, which is currently holding the operation permission.</p> <table border="1"> <thead> <tr> <th colspan="4">NEW</th></tr> <tr> <th>open</th><th>MOV fault</th><th>Defeat switch (01KSA013)</th><th>keep close</th></tr> </thead> <tbody> <tr> <td>96HV001/002</td><td>96YA001/2 no</td><td>off</td><td>66HV001/002 96HV003/004</td></tr> <tr> <td>96HV003/004</td><td>96YA003/4 no</td><td>off</td><td>96HV001/002</td></tr> <tr> <td>66HV001/002</td><td>66YA001/2 no</td><td>off</td><td>96HV001/002</td></tr> </tbody> </table> <p>Incase 96HV001 and 96HV002 left open, the command to open 66HV001/66HV002 and 96HV003/96HV004 was not allowed.</p> <p>If 96YA001 and 96YA002 show faults, the interlock will keep the last action until 96YA001 and 96YA002 back to normal.</p> <p>Refer to HC-WI-TE-4525 Crude valve interlocking system</p>				NEW				open	MOV fault	Defeat switch (01KSA013)	keep close	96HV001/002	96YA001/2 no	off	66HV001/002 96HV003/004	96HV003/004	96YA003/4 no	off	96HV001/002	66HV001/002	66YA001/2 no	off	96HV001/002
NEW																							
open	MOV fault	Defeat switch (01KSA013)	keep close																				
96HV001/002	96YA001/2 no	off	66HV001/002 96HV003/004																				
96HV003/004	96YA003/4 no	off	96HV001/002																				
66HV001/002	66YA001/2 no	off	96HV001/002																				
DCS	3.1.1	Verify all valves in close position as following; <ul style="list-style-type: none"> 96HV003 96HV004 66HV001 66HV002 	<input type="checkbox"/>																				
DCS	3.1.2	Verify DCS Marine open valves as following; <ul style="list-style-type: none"> 96HV001 96HV002 	<input type="checkbox"/>																				


Who	Step	Action	Check
3.2 PD tank farm line up			
OP	3.2.1	Verify all valves in close position as following; <ul style="list-style-type: none"> 61BV003 61BV004 	<input type="checkbox"/>
OP	3.2.2	Verify all valves in open position as following; <ul style="list-style-type: none"> 61BV002 61HV060 	<input type="checkbox"/>
END OF TASK			


Who	Step	Action	Check
4. Crude tank line up and switching			
<div>NOTE</div> Crude tank 60D103 - 60D107 allow to receive high pour point crude and demulsifier chemical injection.			
4.1 60D101 Line Up			
DCS	4.1.1	Close all valves as following; <ul style="list-style-type: none"> 60HV001 60HV050 	<input type="checkbox"/>
DCS	4.1.2	Print Saab level 60D101 for open gauge	<input type="checkbox"/>
<div>NOTE</div> Next crude unloading valve must open more than 80%, then close the last unloading valve, to prevent back pressure in crude unloading line.			
DCS	4.1.3	Open valve 60HV002 for crude unloading.	<input type="checkbox"/>
DCS	4.1.4	Verify all crude unloading valves in close position as following; <ul style="list-style-type: none"> 60HV004 60HV017 60HV019 60HV033 60HV035 60HV880 	<input type="checkbox"/>



Who	Step	Action	Check
OP	4.1.5	Verify operator to place all valves in stop mode and seal valves by cargo surveyor as following; <ul style="list-style-type: none"> 60HV004 60HV017 60HV019 60HV033 60HV035 60HV880 60HV001 60HV050 	<input type="checkbox"/>
4.2 60D102 Line Up			
DCS	4.2.1	Close all valves as following; <ul style="list-style-type: none"> 60HV003 60HV053 	<input type="checkbox"/>
DCS	4.2.2	Print Saab level 60D102 for open gauge	<input type="checkbox"/>
<div>NOTE</div> Next crude unloading valve must open more than 80%, then close the last unloading valve, to prevent back pressure in crude unloading line.			
DCS	4.2.3	Open valve 60HV004 for crude unloading	<input type="checkbox"/>
DCS	4.2.4	Verify all crude unloading valves in close position as following; <ul style="list-style-type: none"> 60HV002 60HV017 60HV019 60HV033 60HV035 60HV880 	<input type="checkbox"/>
OP	4.2.5	Verify operator to place all valves in stop mode and seal valves by cargo surveyor as following; <ul style="list-style-type: none"> 60HV002 60HV017 60HV019 60HV033 60HV035 60HV880 60HV003 60HV053 	<input type="checkbox"/>

Who	Step	Action	Check
4.3 60D103 Line Up			
DCS	4.3.1	Close all valves as following; <ul style="list-style-type: none"> 60HV016 60HV020 60HV058 	<input type="checkbox"/>
DCS	4.3.2	Print Saab level 60D103 for open gauge	<input type="checkbox"/>
<div>NOTE</div> Next crude unloading valve must open more than 80%, then close the last unloading valve, to prevent back pressure in crude unloading line.			
DCS	4.3.3	Open valve 60HV017 for crude unloading	<input type="checkbox"/>
DCS	4.3.4	Verify all crude unloading valves in close position as following; <ul style="list-style-type: none"> 60HV002 60HV004 60HV019 60HV033 60HV035 60HV880 	<input type="checkbox"/>
OP	4.3.5	Verify operator to place all valves in stop mode and seal valves by cargo surveyor as following; <ul style="list-style-type: none"> 60HV002 60HV004 60HV019 60HV033 60HV035 60HV880 60HV016 60HV020 60HV058 	<input type="checkbox"/>
4.4 60D104 Line Up			
DCS	4.4.1	Close all valves as following; <ul style="list-style-type: none"> 60HV018 60HV021 60HV061 	<input type="checkbox"/>
DCS	4.4.2	Print Saab level 60D104 for open gauge	<input type="checkbox"/>
<div>NOTE</div> Next crude unloading valve must open more than 80%, then close the last unloading valve, to prevent back pressure in crude unloading line.			


Who	Step	Action	Check
DCS	4.4.3	Open valve 60HV019 for crude unloading	<input type="checkbox"/>
DCS	4.4.4	Verify all crude unloading valves in close position as following; <ul style="list-style-type: none"> 60HV002 60HV004 60HV017 60HV033 60HV035 60HV880 	<input type="checkbox"/>
OP	4.4.5	Verify operator to place all valves in stop mode and seal valves by cargo surveyor as following; <ul style="list-style-type: none"> 60HV002 60HV004 60HV017 60HV033 60HV035 60HV880 60HV018 60HV021 60HV061 	<input type="checkbox"/>
4.5 60D105 Line Up			
DCS	4.5.1	Close all valves as following; <ul style="list-style-type: none"> 60HV036 60HV032 60HV066 	<input type="checkbox"/>
DCS	4.5.2	Print Saab level 60D105 for open gauge	<input type="checkbox"/>
<div>NOTE</div> Next crude unloading valve must open more than 80%, then close the last unloading valve, to prevent back pressure in crude unloading line.			
DCS	4.5.3	Open valve 60HV033 for crude unloading	<input type="checkbox"/>
DCS	4.5.4	Verify all crude unloading valves in close position as following; <ul style="list-style-type: none"> 60HV002 60HV004 60HV017 60HV019 60HV035 60HV880 	<input type="checkbox"/>

Who	Step	Action	Check
OP	4.5.5	Verify operator to place all valves in stop mode and seal valves by cargo surveyor as following; <ul style="list-style-type: none"> 60HV002 60HV004 60HV017 60HV019 60HV035 60HV880 60HV036 60HV032 60HV066 	<input type="checkbox"/>
4.6 60D106 Line Up			
DCS	4.6.1	Close all valves as following; <ul style="list-style-type: none"> 60HV034 60HV037 60HV068 	<input type="checkbox"/>
DCS	4.6.2	Print Saab level 60D106 for open gauge	<input type="checkbox"/>
 NOTE Next crude unloading valve must open more than 80%, then close the last unloading valve, to prevent back pressure in crude unloading line.			
DCS	4.6.3	Open valve 60HV035 for crude unloading	<input type="checkbox"/>
DCS	4.6.4	Verify all crude unloading valves in close position as following; <ul style="list-style-type: none"> 60HV002 60HV004 60HV017 60HV019 60HV033 60HV880 	<input type="checkbox"/>
OP	4.6.5	Verify operator to place all valves in stop mode and seal valves by cargo surveyor as following; <ul style="list-style-type: none"> 60HV002 60HV004 60HV017 60HV019 60HV033 60HV880 60HV034 60HV037 60HV068 	<input type="checkbox"/>


Who	Step	Action	Check
4.7 60D107 Line Up			
DCS	4.7.1	Close all valves as following; <ul style="list-style-type: none"> 60HV860 60HV881 60HV883 	<input type="checkbox"/>
DCS	4.7.2	Print Saab level 60D107 for open gauge	<input type="checkbox"/>
 NOTE Next crude unloading valve must open more than 80%, then close the last unloading valve, to prevent back pressure in crude unloading line.			
DCS	4.7.3	Open valve 60HV880 for crude unloading	<input type="checkbox"/>
DCS	4.7.4	Verify all crude unloading valves in close position as following; <ul style="list-style-type: none"> 60HV002 60HV004 60HV017 60HV019 60HV033 60HV035 	<input type="checkbox"/>
OP	4.7.5	Verify operator to place all valves in stop mode and seal valves by cargo surveyor as following; <ul style="list-style-type: none"> 60HV002 60HV004 60HV017 60HV019 60HV033 60HV035 60HV860 60HV881 60HV883 	<input type="checkbox"/>
END OF TASK			

Who	Step	Action	Check
5. Receive SPM line flushing setting by program			
 NOTE Crude oil line content from SPM to storage tank is 23,130 m ³ .			
 NOTE Require reduce flow rate 4,000m ³ /hr if remain left 5,000 m ³ by base on 96HV001, 96HV002 and 96HV003 closing time 420second (7 mins) then will be set to stand by and stop to minimize short/over within 1,000 BBL.			

Who	Step	Action	Check
<p>The SPM flush line step program that have alarm blink and buzzer then to action;</p> <p>NOTE</p> <ol style="list-style-type: none"> 1. Call SPM to stand by 30 mins and reduce rate to 4,000 m³/hr then If remain left 2,250 m³ 2. Call SPM to stand by 15 mins If remain left 1,250 m³ 3. Call SPM to stand by 5 mins If remain left 600 m³ 4. Call SPM to stop discharge and close 96HV001, 96HV002, 96HV003 If remain left 200 m³ 			
DCS	5.1	Put the nominated crude tank number in "SPM FLUSH LINE " program step "1. Tank"	<input type="checkbox"/>
DCS	5.2	Select step "2. SPMFLUSH.SW" to "ON" mode.	<input type="checkbox"/>
DCS	5.3	Notify DCS Marine ready to SPM line flushing.	<input type="checkbox"/>
DCS	5.4	Go to step 9. Stop crude unloading setting by DCS.	<input type="checkbox"/>
END OF TASK			



Who	Step	Action		Check
6. Unloading activities				
DCS	6.1	Notify DCS Marine before crude discharge 1 hour		<input type="checkbox"/>
<div> NOTE</div> <p>Some high pour point crude type get difficultly to separate free water from normal crude drain off, demulsifier chemical uses to improve crude de watering. Crude tank 60D103 - 60D107 allow to receive high pour point crude and demulsifier chemical injection.</p>				
DCS	6.2	IF	THEN	<input type="checkbox"/>
		The nominated tank receive that require to inject the Demulsifier as referred DOG1 and DOG 2,	Notify DCS Marine to prepare Demulsifier injection is ratio10 ppm.	
DCS	6.3	Compare the loading outturn figure hourly during discharge with ship and the crude tank receiving to DCS Marine.		<input type="checkbox"/>
DCS	6.4	IF	THEN	<input type="checkbox"/>
		Any significant of discrepancies loading outturn figure have to investigate,	Stop unloading and report to shift supervisor,	


Who	Step	Action		Check
DCS	6.5	Notify DCS Marine and tank farm operator to commence discharge crude at initial flow rate 4,000 m ³ /hr for 30 minutes.		<input type="checkbox"/>
OP	6.6	Verify no leak and seeping from tank.		<input type="checkbox"/>
OP	6.7	Notify the conditions to DCS Tank Farm.		<input type="checkbox"/>
DCS	6.8	IF	THEN	<input type="checkbox"/>
		Demulsifier injecting,	Verify DCS Marine that Demulsifier injecting is ratio 10 ppm.	
DCS	6.9	Verify the crude correct in sequence order receiving tank.		<input type="checkbox"/>
DCS	6.10	Notify DCS Marine and tank farm operator to increase flow rate to 9,000 m ³ /hr		<input type="checkbox"/>
END OF TASK				



Who	Step	Action	Check
7. Crude Oil filling/mixing			
<p>The setting of auto stop mixer logic is designed to stop mixers when the level become low in the order to prevent build up of static electricity in tank.</p>			
<div> NOTE</div> <p>The interlock inhibit operator to restart the crude mixers while condition is still lower than setting limit level is at 3,473 mm.</p> <p><u>Refer to HC-WI-TE-4560 Auto stop mixer logic</u></p>			
DCS	7.1	IF	<input type="checkbox"/>
		THEN	
		The crude tank unloading level reach to 3,473 mm,	Start crude tank mixers.
END OF TASK			

Who	Step	Action		Check
8. SPRC crude tank switching				
DCS	8.1	IF	THEN	<input type="checkbox"/>
		Crude unloading is the end of step discharge plan.	Go to 9. Stop crude unloading setting by DCS	

Who	Step	Action		Check
DCS	8.2	IF	THEN	<input type="checkbox"/>
		Crude unloading plan switch to the next tank.	Go to the next step 8.3.	
DCS	8.3	Notify DCS Marine to stand by crude tank switching 30 minutes.		<input type="checkbox"/>
DCS	8.4	Notify DCS Marine to stand by 15 minutes and reduce flow rate to 4,000 m³/hr.		<input type="checkbox"/>
DCS	8.5	Verify ship reduce flow rate to 4,000 m³/hr by monitor flow 96FI001.		<input type="checkbox"/>
DCS	8.6	WHEN	THEN	<input type="checkbox"/>
		Flow 96FI001 reading below 4,000 m³/hr	Switch crude unloading to others tank can be go to the step 7.7.	
DCS	8.7	Switch and Line Up through; Step 4.1 60D101 Line Up, or Step 4.2 60D102 Line Up, or Step 4.3 60D103 Line Up, or Step 4.4 60D104 Line Up, or Step 4.5 60D105 Line Up, or Step 4.6 60D106 Line Up, or Step 4.7 60D107 Line Up		<input type="checkbox"/>
DCS	8.8	WHEN	THEN	<input type="checkbox"/>
		Crude tank switching tank complete.	Go to Step 6.6.	
END OF TASK				

Who	Step	Action	Check	
9. Stop crude unloading setting by DCS				
	NOTE	Crude oil line content from SPM to storage tank is 23,130 m ³ .		
	NOTE	DCS Tank Farm will notify to DCS Marine 30 minutes for decrease the crude unloading flow rate to minimum at 4,000 m ³ /hr before crude discharge completed.		
DCS	9.1	WHEN	THEN	<input type="checkbox"/>
		The crude remaining volume left to 2,250 m ³ .	Notify DCS Marine stand by 30 minutes and reduce flow rate to 4,000 m ³ /hr.	

Who	Step	Action		Check
DCS	9.2	IF	THEN	<input type="checkbox"/>
		Demulsifier injecting,	Notify DCS Marine to stop Demulsifier injection.	
DCS	9.3	WHEN	THEN	<input type="checkbox"/>
		The crude remaining volume left to 1,250 m ³ .	Notify DCS Marine stand by 15 minutes.	
DCS	9.4	WHEN	THEN	<input type="checkbox"/>
		The crude remaining volume left to 600 m ³ .	Notify DCS Marine stand by 5 minutes.	
DCS	9.5	WHEN	THEN	<input type="checkbox"/>
		The crude remaining volume left to 200 m ³ .	Notify DCS Marine stop crude unloading.	
DCS	9.6	Verify DCS Marine stop crude unloading and monitor; <ul style="list-style-type: none">• 96FI001 crude unloading flow rate reading below 0 m³/hr or• 96PI001 crude unloading pressure indicator reading below 0 kg/cm²		<input type="checkbox"/>
 CAUTION		The last crude import tank shall leave crude import MOVs valve opened position to prevent crude import lines the thermal expansion.		
DCS	9.7	IF	THEN	<input type="checkbox"/>
		The crude unloading plan switch to PTTGC.	Go to 11.Crude switch SPRC to PTTGC	
END OF TASK				

Who	Step	Action		Check
10. Tank close gauge				
 NOTE		To support mass balance figure for whole tank temperature average then crude tank mixers shall continues mixing after crude tank finished unloading.		
OP DCS	10.1	Continue mixing at least 6 hrs after finished crude unloading.		<input type="checkbox"/>
DCS	10.2	WHEN	THEN	<input type="checkbox"/>
		Crude tank mixers mixing at least 6 hrs,	Print Saab level the nominated crude tank close gauging.	
 CAUTION		Crude oil contain the high H ₂ S and Hg, inhalation may cause dizziness, headache and instantly fatal. PPE, organinc respirator, mercury vapor cartridge and H ₂ S monitor must require when working.		

Who	Step	Action	Check
OP	10.3	Notify helper operator to de water nominated crude tank.	<input type="checkbox"/>
OP	10.4	Verify nominated crude tank no water represent.	<input type="checkbox"/>
OP	10.5	Verify no leak and seeping from tank.	<input type="checkbox"/>
OP	10.6	Verify condition to DCS Tank Farm.	<input type="checkbox"/>
END OF TASK			

Who	Step	Action	Check
11. Crude switch SPRC to PTTGC			
DCS	11.1	Notify PTTGC when SPRC crude discharge completed	<input type="checkbox"/>
DCS	11.2	Verify DCS Marine stop crude unloading to SPRC.	<input type="checkbox"/>
DCS	11.3	Switch crude unloading from SPRC to PTTGC.	<input type="checkbox"/>

Who	Step	Action	Check																																
<p>There is interlock defeat switch 01KSA013 to bypass the logic, normally it has to be in OFF position. The interlock defeat switch is only available for the site SPRC/PTTGC, which is currently holding the operation permission.</p> <p>CAUTION</p> <table border="1"> <thead> <tr> <th colspan="4">NEW</th> </tr> <tr> <th>open</th><th>MOV fault</th><th>Defeat switch (01KSA013)</th><th>keep close</th></tr> </thead> <tbody> <tr> <td>96HV001/002</td><td>96YA001/2</td><td>off</td><td>66HV001/002</td></tr> <tr> <td></td><td>no</td><td></td><td>96HV003/004</td></tr> <tr> <td>96HV003/004</td><td>96YA003/4</td><td>off</td><td>96HV001/002</td></tr> <tr> <td></td><td>no</td><td></td><td></td></tr> <tr> <td>66HV001/002</td><td>66YA001/2</td><td>off</td><td>96HV001/002</td></tr> <tr> <td></td><td>no</td><td></td><td></td></tr> </tbody> </table> <p>Incase 96HV003 and 96HV004 left open, the command to open 96HV003/96HV004 was not allowed. If 96YA003 and 96YA004 show faults, the interlock will keep the last action until 96YA003 and 96YA004 back to normal.</p> <p>Refer to HC-WI-TE-4525 Crude valve interlocking system</p>				NEW				open	MOV fault	Defeat switch (01KSA013)	keep close	96HV001/002	96YA001/2	off	66HV001/002		no		96HV003/004	96HV003/004	96YA003/4	off	96HV001/002		no			66HV001/002	66YA001/2	off	96HV001/002		no		
NEW																																			
open	MOV fault	Defeat switch (01KSA013)	keep close																																
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	no																																		
66HV001/002	66YA001/2	off	96HV001/002																																
	no																																		
DCS	11.3.1	Verify all valves in close position as following; <ul style="list-style-type: none"> 96HV001 96HV002 	<input type="checkbox"/>																																
DCS	11.3.2	Verify DCS Marine open valve as following; <ul style="list-style-type: none"> 96HV003 96HV004 	<input type="checkbox"/>																																
END OF TASK																																			

Who	Step	Action	Check
12. Crude circulation heater			
<div>NOTE</div> <p>Effective demulsifier chemical reaction with free water in crude requires temperature 38 - 40 degree C, then crude heat up shall operate crude oil and circulate via heater until get the temperature 38 - 40 degree C.</p>			
OP	12.1	Refer to procedure HC-WI-PD-5397 Crude Oil circulation via heater 60E101.	<input type="checkbox"/>
END OF TASK			

Senior Operator

Initial

Time

Date

Shift Supervisor

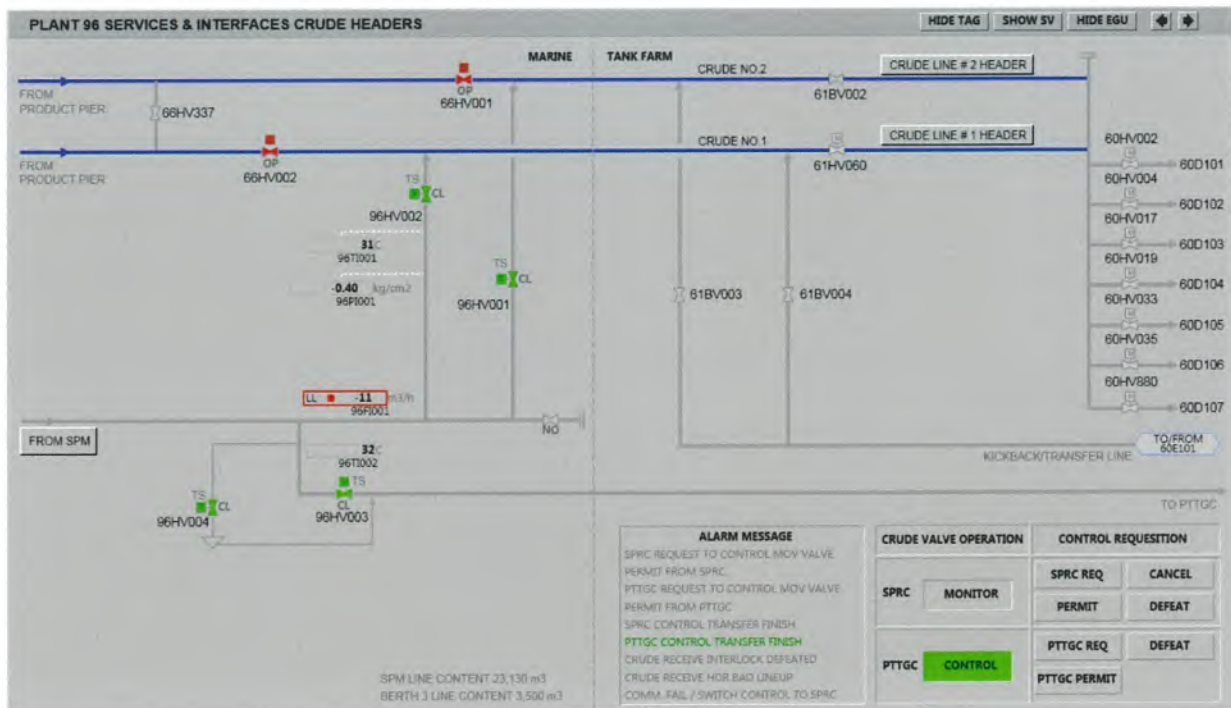
Initial

Time

Date

Appendix

Appendix A : GR0781 Service and Interface Crude HDR



Revision No.: 5.1

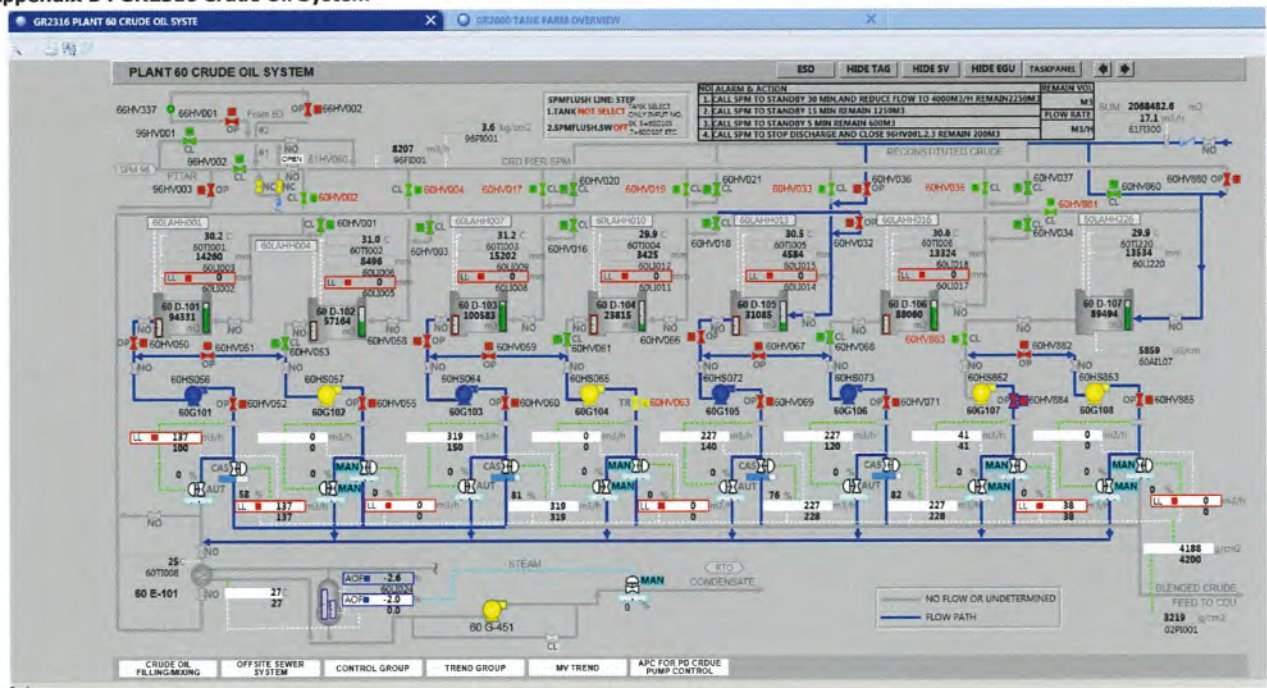
HC-WI-PD-5391

Date: 19 October 2021

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Appendix B : GR2316 Crude Oil System



Revision No.: 5.1

HC-WI-PD-5391

Date: 19 October 2021

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This is a controlled document and must be used within 7 days of printing 12 July, 2022

Definitions

N/A

References

- D-60-1225-101
- D-60-1225-102
- D-60-1225-103
- D-60-1225-104
- D-60-1225-105
- D-60-1225-106
- D-61-1225-106
- D-61-1225-107
- GR0781 Service and interfaces crude header
- GR2413 Crude oil filling and mixing
- GR2314 Crude oil system
- MOM "SPM Operating Workshop in November, 2018"
- HC-WI-TE-4525 Crude valve interlocking system
- HC-WI-PD-5397 Crude Oil circulation via heater 60E101

Amendment List

Below is a list of changes between the previous and the current revision of this document.

Step/Section	Reason for Change
	(Changed) - Converted to SmartProcedure, changed document number from HC-WI-PD-1400 to HC-WI-PD-5391, reviewed all contents
	(Changed) - - Change flowrate of tank switch and topping off from 4,000 - 5,000 m3/hr to be 4,000 m3/hr. - Change the maximum flow rate from 8,500 - 8,800 m3/hr to be 9,000 m3/hr. - Change SPM operating from PTTGC to be SPRC. (Refer to SPM Operation Interface Workshop in November 2018)
Information	(Changed) - Major change to add section 5. SPM line flush and change data in section 10. Tank close gauge, (Note, 10.1)
Caution Step (Unnumbered) - 2.	(Added) - Minor change to chatge that add caution in section Precautions and section 9. Stop crude unloading setting by DCS

Distribution List

Copy No.	Controller/Holder	Location
00	Electronic Controller	SmartProcedures

ภาคผนวก ข.28

ขั้นตอนการทำงานเกี่ยวกับการรับจ่ายน้ำมันที่ท่ากลางทะเล

Movement/Dispatches	
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> </div> <div> Plant 65 SPM Terminal Operating Procedure </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> Prepared by: [REDACTED] Approved by: [REDACTED] </div> <div> Number: HC-WI-PD-6084 Revision: 3.3 </div> </div> <p style="text-align: center; font-size: small; margin-top: 5px;">This document must be printed and used "In Hand"</p>	
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Purpose

This procedure provides the necessary information for the SPM maintenance boat/ Mooring boat/Standby Tug/ Agent's tug to carry out safely SPM tanker mooring / unmooring and hose handling operations.

System Information

Summary

Good communications must be maintained at all times for SPM Mooring / Unmooring / Hose Handling operation between the Tanker , Maintenance Boat , Pilot / Mooring Master, Standby Tug and Agent's Tug. The Communication links are following :

Ship : Tanker VHF radio channel 67

Maintenance Boat : Uniwise Rayong VHF radio channel 67, UHF radio Marine channel

Pilot / Mooring Master : VHF radio channel 67, UHF radio Marine channel, mobile phone 063-9067013

Standby Tug : VHF radio channel 67

Agent's Tug : VHF radio channel 67

Roles and Responsibility

Deviation from the procedure must be stopped and informed a line supervisor or line manager, concerned people for a solution prior to executing this procedure.

Ship :

- The vessel must checks pre-arrival as follow ISGOTT.
- The vessel must provide an adequate lee for boarding.
- The vessel must provide a safe speed for boarding subject to weather and sea condition.
- A safe means of access shall be provided in accordance with the requirements of SOLAS.
- During night operations the access shall be adequately illuminated to allow the safe approach and boarding of the Mooring Master, Government Officials Agent and Surveyors.
- The vessel must record of inspection of pipeline, cargo pump stop and cargo pump relief tests to be inspected.
- Exchange crude volume(cubic meter) every hour with the Terminal after commence discharge.
- The vessel must discharge cargo as follow discharge plan.

Pilot :

- Checks pre-arrival as follow ISGOTT.
- Responsible for the berthing, un-berth
- Coordination of all operations are carried out in a safe complying with International, National, Industry and Company Standards.
- Close coordination with the vessel's Master, Crew and the Marine Control Building must be maintained at all times.
- Issuing Letters of Protest for any shipboard equipment deficiencies or operational deficiencies that might be found or serious safety violations that may occur.

- Contact or report to SPM Manager at any time he feels their assistance or advice is required.
- In case of all pollutions to be reported immediately to the Shift Supervisor.

Mooring Master

- Safety checks on the vessel as follow ship shore safety checklist.
- The Mooring Master will advise the vessel's crews on all operations relative to mooring, connecting/disconnecting of hoses and un-mooring.
- Monitor all action which perform in working area to ensure is under safety performance.
- Keep monitoring cargo discharging as follow discharge plan.
- The Mooring Master should not hesitate to contact Pilot at any time he feels their assistance or advice is required.

Work Boat Team :

- Pre-berth inspection and confirm to pilot.
- Care must be taken to ensure that both mooring messengers lines do not become entangled.
- Split the hawsers by pulling starboard mooring messenger round the SPM.
- Connect up the mooring messenger with ship's messenger line.
- Completed Mooring, pick up the port hose messenger from Maintenance boat.
- In case emergency, using transfer Rigger for close valve on SPM.

Maintenance Boat Team :

- Ensure ISO-Danger buoy is in correct position and confirm to Pilot.
- Towing the floating cargo hose string during tanker approach.
- Bring the floating cargo hose string alongside at port side tanker manifold area.
- Support related SPM operation.
- Static tow.
- Oil spill response
- Maintenance and diver support.

Standby Tug Team :

- Follow instruction from Pilot
- Assist berth when Pilot request.
- Oil spill response and patrol SPM area.
- SPM vigilance and reporting.
- Keep away to any boat and or vessel coming close to SPM , less than 1 nm radius.
- Monitor weather condition and squall during operation which be reported to Mooring Master.

Agent's Tug Team :

- Personnel transfer to tanker & Personnel transfer between Maintenance boat.
- Assist tanker berth.

Ship's Agent.

- Notified of berthing schedule to all party concern.
- Coordination with the Vessel, Pilot & Surveyor.
- Pass information from Terminal/Pilot/Vessel.

Terminal (MCB)

- Confirmed ready to receive the vessel's cargo.
- Notice to the vessel when cargo nearly to target.
- Exchange crude volume(cubic meter) every hour with the vessel after commence discharge.
- Keep monitoring cargo discharging as follow discharge plan.
- Operator on duty should not hesitate to contact Mooring Master at any time he feels their assistance or advice is required.

Surveyor

- The surveyor must be sealed at cow line's master valve of all cargo discharging tank.
- To break seal of nominate COW tanks by the surveyor as per tanker officer's request.
- Take sample as follow discharge plan.
- Ullage & calculation figures when completed inform to pilot.
- Monitoring ship discharge rate and discharge pressure.
- Tank inspection when completed inform to pilot.

Diver

- As following diving services agreement.

Precautions



NOTE

General information useful to understand a particular step in the procedure.



CAUTION

A step that, if done incorrectly, could cause a safety hazard leading to personal injury, equipment or environmental damage, or a delay.



WARNING


A step that, if done incorrectly, could cause a serious safety hazard leading to death, serious personal injury, major equipment damage, fire or a large environmental release.

Prerequisites

N/A

Detailed Activities

Who	Step	Action	Initial/Date/Time
1. DESCRIPTION AND LOCATION OF TERMINAL			
1.1 Terminal Location			
		<p>The MAP TA PHUT SPM TERMINAL consists of a single point mooring buoy located in position:</p> <ul style="list-style-type: none"> • Latitude 12° 29.3' North • Longitude 101° 11.76' East <p>in approximately 25 Meters of water (LLT).</p> <p>The Terminal is designed to handle vessels from 60,000 to 280,000 DWT with a maximum displacement of 350,000 tones and draft of 20.7 meters. Crude Oils for the Star Petroleum Refining Co., Ltd. are imported through the facility.</p> <p>A 48 inch diameter submarine pipeline, approximately 19 kilometers in length connects the SPM with the shore terminal. This pipeline terminates at the SPM PLEM to which the sub-sea hoses are connected.</p>	
1.2 Principle Particulars			
		<p>The buoy is a CALM type, secured by Six Anchors and Chains. The principle particulars of the buoy are :</p> <ul style="list-style-type: none"> • Outer Shell Diameter 11.00 meters • Outer Skirt Diameter 15.17 meters • Height 4.80 meters • Draft 3.20 meters • Weight excl. susp. chains 210.0 ton • Weight inc. susp. chains 260.0 ton <p>High Holding Power</p> <ul style="list-style-type: none"> • Marine Drag Anchors 15.5 ton • Anchor Chain lengths 315 meter • Anchor Chain diameter 4-1/4 inches • Min Breaking Load 8721 k N • Anchor Leg Spacing 60° 	

Who	Step	Action	Initial/Date/Time															
1.3 Operating Conditions																		
The operational conditions up to which tankers can stay securely moored at the terminal correspond to a return period of 5 years as given below.																		
<table><tr><th>Description</th><th>Unit</th><th>Value</th></tr><tr><td>Significant Wave Height</td><td>m</td><td>3.3</td></tr><tr><td>Peak Wave Period</td><td>s</td><td>8</td></tr><tr><td>Wind Speed (1 minute mean)</td><td>Knot</td><td>35</td></tr><tr><td>Current Speed (Surface)</td><td>Knot</td><td>1.2</td></tr></table>				Description	Unit	Value	Significant Wave Height	m	3.3	Peak Wave Period	s	8	Wind Speed (1 minute mean)	Knot	35	Current Speed (Surface)	Knot	1.2
Description	Unit	Value																
Significant Wave Height	m	3.3																
Peak Wave Period	s	8																
Wind Speed (1 minute mean)	Knot	35																
Current Speed (Surface)	Knot	1.2																
It is assumed that wind, waves and current are collinear.																		
<div> NOTE In case of operating wind limit is persisting that Mooring Master has considered for risky consequence. Mooring Master will make decision and take necessary action for all safety respect to the operation.</div>																		
1.4 Survival Conditions																		
The survival conditions correspond to a period of 100 years and are given in the following table. There is no tanker moored during such conditions.																		
<table><tr><th>Description</th><th>unit</th><th>value</th></tr><tr><td>Significant Wave Height</td><td>m</td><td>3.4</td></tr><tr><td>Wave Period</td><td>s</td><td>8</td></tr><tr><td>Wind Speed (1 minute mean)</td><td>Knot</td><td>42</td></tr><tr><td>Current Speed (Surface)</td><td>Knot</td><td>1.4</td></tr></table>				Description	unit	value	Significant Wave Height	m	3.4	Wave Period	s	8	Wind Speed (1 minute mean)	Knot	42	Current Speed (Surface)	Knot	1.4
Description	unit	value																
Significant Wave Height	m	3.4																
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Current Speed (Surface)	Knot	1.4																
1.5 Mooring Hawsers																		
<ul style="list-style-type: none">• Number of Hawsers2• TypeSingle - leg• MaterialNylon• Circumference16 inch• Length50 meters• Breaking Load NBDS395 Ton• Maximum allowable mooring loads220 Ton• Chafe Chain76 mm.																		
1.6 Sub-sea Hose Configuration																		
The Chinese Lantern sub-sea hose configuration consists of two hose strings, each of 3 hoses 24 inch in diameter.																		


Who	Step	Action	Initial/Date/Time
1.7 Surface Hose Strings			
The floating hose configuration consists of two hose strings. The main hoses being 24 inch and the tail hoses 16 inch diameter. The starboard string 955 feet and the port string 990 feet in length. The strings are marked by winker lights.			
Double closure Gall Thomson breakaway couplings are fitted to both floating strings.			
1.8 Navigation Aids			
The SPM exhibits a white light flashing 6 times per 15 second Fl (6) 15 sec and visible at a range of 5 miles. In addition a fog horn will sound Morse Code "U" at 30 second intervals. White winker lights are also fitted to the floating hose strings.			
Buoy "A" Isolated Danger, Black with a broad red horizontal red band, top mark two black spheres one above the other, exhibiting a White light Fl (2) 12 sec 6M located in position: <ul style="list-style-type: none">Latitude 12° 29' 33.9" NorthLongitude 101° 10' 18.4" East This buoy marks a rock pinnacle which is considered dangerous to navigation.			
Buoy "B" Special Mark, Yellow with single Yellow "X" top mark, exhibiting a Yellow light Fl (4) 20 sec 6M located in position: <ul style="list-style-type: none">Latitude 12° 29' 43.0" NorthLongitude 101° 12' 24.7" East RACON transmitting Morse Code "B" (Bravo) is also fitted to this buoy.			
END OF TASK			

Senior Operator

Initial

Time

Date

Who	Step	Action	Initial/Date/Time
2. BERTHING PROCEDURES			
2.1 Mooring and Assistant Mooring Masters			
<div> CAUTION The Mooring Master (MM) will be responsible for the berthing, un-berthing and coordination of all operations undertaken by the vessel in the berth. He is to ensure all operations are carried out in a safe and seaman like manner, complying with International, National, Industry and Company Standards. Close coordination with the vessel's Master, Crew and the Marine Control Building must be maintained at all times.</div>			

Who	Step	Action	Initial/Date/Time
		<p>While onboard the import tanker, the MM is the Company Representative and in such a capacity is responsible for ensuring that SPRC's interests are protected. The MM is responsible for issuing Letters of Protest for any shipboard equipment deficiencies or operational deficiencies that might be found or serious safety violations that may occur while he is on the vessel.</p> <p>The MM should not hesitate to contact SPRC Management at any time he feels their assistance or advice is required.</p> <p>The Assistant Mooring Master (AMM) will work under the directions and leadership of the MM.</p>	
2.2 Vessel acceptance			
<div>NOTE</div> <p>Prior to berthing any vessel at the SPM Terminal the following checks must be made :</p>			
	2.2.1	Vessel has been cleared by SPRC / PTTGC vetting system.	
	2.2.2	Appropriate Refinery (SPRC / PTTGC) ready to receive the vessel's cargo	
	2.2.3	Vessels Agent notified of berthing schedule	
	2.2.4	Independent Cargo Inspection Company been advised of berthing schedule.	
	2.2.5	SPM Pre-berthing Inspection has been completed by the Rigger.	
	2.2.6	Load Monitor System has been set up.	
	2.2.7	Vessel acceptable on Displacement and Draft.	
	2.2.8	Cargo Tanks inerted as required by SOLAS	
	2.2.9	Vessel confirmed information on the Pre-berthing Check List.	
	2.2.10	Record of Inspection of Pipeline, Cargo Pump Stop and Cargo Pump Pressure relief tests to be inspected.	

Who	Step	Action	Initial/Date/Time
2.3 Vessel Pre - Berthing Check List			
		<ol style="list-style-type: none"> 1. Name of Vessel 2. Name of Master 3. Summer Dead weight 4. Arrival Draft 5. Net Registered Tonnage 6. Last Port of Call 7. Owner's name and Address 8. Bill of Lading Figures 9. Nationality of Officers and Crew 10. Number and Size of Chain Stoppers for SPM Mooring 11. Can Vessel maintain 30 percent of Summer DWT while in Berth 12. IGS Operational and all cargo tanks conditions as required by SOLAS 13. Adequate Stability at all stages of Cargo / Ballast operations. 14. Number and size of Manifolds. 15. S.W.L. of Derrick or Crane. <p>This information may be obtained from the vessel's Master by VHF or E-Mail through his agent.</p> <p>The vessel must comply fully with all equipment and safety requirements and not exceed the displacement or draft limitations for the SPM. If the vessel exceeds the SPM designed criteria or is deficient in equipment or safety requirements the vessel will not be berthed.</p>	
2.4 SPM Pre - Berthing Check List			
<div>NOTE</div> <p>Prior to berthing a tanker, an inspection shall be made of the SPM and ancillary equipment by the rigger on supervision of SPM Maintenance Supervisor.</p>			
<div>CAUTION</div> <p>In times of bad weather, consideration should be given as to whether conditions permit safe boarding of the buoy by personnel. While personal safety is paramount, the possibility of damage to the buoy by boats should be taken into consideration.</p>			
		The final decision as to whether it is safe to board the buoy, is to be taken by the assigned Mooring Master in consultation with the Master of the Standby Vessel and SPM Maintenance Supervisor.	
2.5 Drug and Alcohol Policy			
	2.5.1	STRICTLY FORBIDDEN to consume either alcohol or illegal drugs and any person may be requested to do drug/alcohol test.	
	2.5.2	Any Mooring Master, Assistant Mooring Master and Contractors thought to be under the influence of either alcohol or illegal drugs during working hours shall be requested to report for testing.	


Who	Step	Action	Initial/Date/Time
	2.5.3	Refusal by a Mooring Master, Assistant Mooring Master and Contractors to submit to this drug/alcohol test shall result in them being requested to leave from operation.	
	2.5.4	Disciplinary action for refusing to submit to this drug/alcohol test shall be determined by management but may include:	
	2.5.5	Time off without pay for 1st occurrence.	
	2.5.6	Possible termination of employment for any additional occurrence.	
	2.5.7	If the Mooring Master and/or Contractor is tested and found to be under the influence of either alcohol or illegal drugs, they will be subjected to immediate disciplinary action which could include termination of their employment.	
	2.5.8	The use, possession, distribution or sale of either alcohol, illegal drugs and controlled substances by any person within SPRC premises or while engaged in performing services for SPRC is strictly and absolutely prohibited.	
END OF TASK			

Senior Operator



Initial

Time

Date

Who	Step	Action	Initial/Date/Time				
3. MOORING AND UNMOORING							
3.1 Mooring Master Boarding							
	3.1.1	<p>The Mooring Master his Assistant and SPM Maintenance Supervisor/ assigned rigger will board the vessel by boat.</p> <ul style="list-style-type: none">• A safe means of access shall be provided in accordance with the requirements of SOLAS.• The vessel must provide an adequate lee for boarding.• During night operations the access shall be adequately illuminated to allow the safe approach and boarding of the Mooring Master, Government Officials Agent and Surveyors.• The Conditions of Entry into and use of the Map Ta Phut SPM Terminal form and Pilotage Plan will be presented to the Master of the Tanker and shall be signed prior to the commencement of berthing operations.• The Notice of Readiness will only be accepted / received provided the SPRC Mooring Master is satisfied that the vessel is in all respects ready to moor and discharge. <p>In no event shall the Notice of Readiness, whether previously accepted / received or not, be valid or binding on the Terminal unless the vessel, her tanks and equipment, are in fact, in every respect ready to discharge cargo.</p> <p>The Mooring Master and Assistant will advise the Master on all maneuvers and operations relative to berthing, connecting/disconnecting of hoses and un-berthing. They will also provide all communications between vessel and shore during transfer operations and be the SPRC Representative with respect to cargo operations, documentation, safety observations and other requirements.</p> <p>These Mooring Masters will remain on board the vessel while in the berth and suitable officer style accommodation is to be provided for them. Also accommodation to be provided for mooring crew(s)</p>					
	3.1.2	<p>Maximum Wind, Sea /Swell criteria for SPM mooring operation.</p> <table><tr><td>Significant Wave Height</td><td>2.0 - 2.5 m.</td></tr><tr><td>Wind Speed</td><td>20- 25 Knots.</td></tr></table> <p>Wind and wave are collinear.</p>	Significant Wave Height	2.0 - 2.5 m.	Wind Speed	20- 25 Knots.	
Significant Wave Height	2.0 - 2.5 m.						
Wind Speed	20- 25 Knots.						
<div> NOTE</div> <p>In case of operating wind limit is persisting that, Mooring Master has considered for risky consequence. Mooring Master will make decision and take necessary action all safety respect to the operation.</p>							

Who	Step	Action		Initial/Date/Time
	3.1.3	Maximum Wind, Sea /Swell criteria for SPM discharging operation.		
		Suspend Discharge	Significant Wave Height = 2.5 meters.	
		Criteria	Stop cargo at : 30 Knots.	
			Hose Disconnection at : 35 Knots.	
			Un Berthed at : 35 Knots.	
		Wind and wave are collinear.		
		<div><div></div><div><p>- In case of squall / heavy rain / thunder storm at SPM vicinity, the mooring and discharging operation will be suspended .</p><p>- In case of operating wind limit is persisting that, Mooring Master has considered for risky consequence. Mooring Master will make decision and take necessary action all safety respect to the operation.</p><p>- In case of severe weather which wave height exceed 4.1 meters and wind speed exceed 41 knots, the floating hoses and subsea hoses shall be uninstalled and perform on-shore testing by visual inspection and hydrotest to ensure that hoses are in good and reliable condition for service before re-install."</p></div></div>		
		<div><div></div><div><p>NOTE</p></div></div>		
		<div><div></div><div><p>3.2 Under Pilotage and at Berth</p></div></div>		
		<p>The Mooring Master and Assistant will carry portable intrinsically safe multi-channel radios by means of which all communications regarding approach, mooring and cargo transfer will be made. They will also carry battery chargers for these radios during the vessel's stay at the SPM Terminal.</p> <p>In addition, the vessel's VHF Radio should be available on the bridge and in the cargo control room for back up communications.</p>		
		<div><div></div><div><p>3.3 Preparation for Mooring</p></div></div>		
		<div><div></div><div><p>WARNING</p></div></div>	Verify all Deck valve on SPM has been opened.	
		<div><div></div><div><p>WARNING</p></div></div>	During the approach, while mooring and secured in the SPM, the vessel's anchors MUST be secured by stoppers and secured to prevent accidental dropping with subsequent damage to the subsea pipeline and equipment.	

Who	Step	Action	Initial/Date/Time
		<p>The port Crane should be rigged ready to lift the mooring box from the boat and for connecting the cargo hoses. Crane shall have a minimum 20 tons SWL. However, vessels should have the recommended SWL capacity for their size as recommended in the Oil Companies International Marine Forum (OCIMF) publication "Recommendations for Oil Tanker Manifolds and Associated Equipment"</p> <p>The vessel will provide 2 x 16 inch 150 lbs ASA flange connections on selected cargo manifolds made ready for hose connections, drip trays, sawdust or sand and fire fighting equipment in position at the manifold area.</p> <p>The following vessel's equipment should be ready on the forecastle :</p> <ul style="list-style-type: none">• Two empty spool drums to heave onboard mooring pick up ropes. This will necessitate the removal of the mooring wire or rope from the spool drums.• Port messenger lines 80 millimeter diameter, 150 meters in length. Starboard messenger lines 80 millimeter diameter, 70 meters in length• Two large crow bars.• Sledge hammer• Pail of grease• Large flashlight for night berthing.	
3.4 Mooring			
 CAUTION		Line handling during mooring and unmooring is performed by the vessel's crew, with an experienced officer, under instruction of the Mooring Master and Assistant Mooring Master	
		<p>Vessels must be fitted as recommended in the OCIMF publication "Standards for Equipment Employed in Mooring of Ship's at Single Point Moorings".</p> <p>ONLY VESSELS FITTED WITH APPROVED CHAIN STOPPERS AND 2 BOW FAIRLEADS WILL BE BERTHED AT THE SPM. THE USE OF SMIT BRACKETS OR ANY OTHER MEANS OF SECURING THE CHAFE CHAIN IS NOT PERMITTED.</p> <p>Prior to the final approach of the tanker upon instruction from the Mooring Master, the starboard mooring hawser will be towed to the port side of the buoy to keep it clear from the port hawser. One boat after instruction from the Mooring Master will then tow the floating hose string away from the tanker's direction of approach in the form of a bight to ensure that the hose strings are kept clear of the vessel's propeller during berthing. Extreme caution shall be exercised to ensure that no excessive strain is placed on the floating hose strings by the boat while towing or holding the hoses clear.</p> <p>When the vessel is within reasonable distance from the SPM, a ship's messenger line will be carried by the mooring launch and connected to the port mooring messenger on the mooring hawser. This mooring messenger will be used to heave the 76 millimeter chafe chain on board.</p>	
 WARNING		Care must be taken during this operation to ensure that no excessive weight comes on the mooring messenger.	

Who	Step	Action	Initial/Date/Time
		<p>Whenever possible, self spooling drums should be used to heave the messenger rope onboard.</p> <p>The chafe chain will then be secured in the chain stopper in such a manner that the supporting buoy and nylon hawser remains outside and clear of the ship's fairlead. Allowing the chain to absorb any chafing in the mooring system.</p> <p>Mooring Master will arrange with Ship's officer to pay out the mooring messengers from each spool drums, remove shackles connecting ship-shore messengers then each messenger will be rolled back to the spool drum neatly.</p> <p>The operation will then be repeated to secure the starboard mooring hawser.</p> <p>Once the vessel is securely moored, a tug will bring (one-by-one) hose string end to make connection at the port manifold and then be secured on a towline astern.</p>	
3.5 Moored to Berth			
		<p>A Mooring Hawser Load Monitoring Device is fitted to the SPM. It provides each hawser and the total load on the mooring system at the present time and displays on the display monitor carried to set up on each tanker. There are also visual and audible signal on the buoy to indicate to the Mooring Master that high mooring stresses are being experienced while the tanker is at the SPM.</p> <p>At 155 tonnes strain, which is 70% of the preset threshold value of 220 tonnes, a x warning light flashes on the buoy. When this occurs the Mooring Master is to be informed by the Forecastle Watchman. The Mooring Master will request the tanker's engines be placed on Standby, cargo operations will be suspended and preparations made ready in case it is necessary to disconnect the hoses.</p> <p>If the warning light goes out and stays out, it will be the Mooring Master decision whether to resume cargo operations.</p> <p>In the event the red light remains flashing, indicating continuous load in excess of 155 tonnes the hoses are to be disconnected immediately and preparation made to leave the berth.</p> <p>If the red flashing light remains on and the audible alarm sounds, indication that the threshold limit of 220 tonnes has been reached, the hose should be disconnected and the tanker un-berthed and taken to anchor.</p> <p>However, if at any time, in the Mooring Master's judgment, weather conditions are such that he feels it is unsafe to continue cargo operations or remain at the SPM, such as when wind/swell conditions have reached the operating parameters of the SPM and the Load Monitoring Alarms have not yet activated, then his decision shall over ride all other factors.</p> <p>When weather conditions improve the tanker can be re-berthed.</p>	

Who	Step	Action	Initial/Date/Time
3.6 Unmooring			
		<p>When the hoses have been disconnected and lowered to the water, the unmooring operation will commence which ship engine could be tested and the tug astern will be released either subsequently or after tanker unmoor and safely clear from SPM, as per Mooring Master decision.</p> <p>The weight will then be allowed to come off the mooring hawsers, it may be necessary to use the ship's engines for this purpose. When the weight is off, the both mooring hawser will be released and lowered to the water.</p> <p>At once both of the hawser messengers are cleared from the ship heaving drum, the vessel moved astern clear of the berth.</p>	
		WARNING After operation completed riggers will close and secured both SPM deck valves if the wather permit.	
		NOTE Care must be taken to ensure that the hawsers do not become entangled in each other or are dropped onto, or across the hose strings.	
		CAUTION ANCHORS SHALL REMAIN SECURED UNTIL THE VESSEL IS WELL CLEAR FROM SPM AND SUBSEA PIPELINE.	
	3.6.1	Role of Mooring Master (1) – Pilotage The Mooring Master should advise the Master on manoeuvres to unmoor from the SPM, and should instruct the support vessels to tow the hose string clear and clear the hawser pick-up rope when released, Unmoor should be started only once the tanker's engines, the forecastle party and the support vessels are ready. The tanker's main engines should be tested only when a Mooring Master is ready on the forecastle. The tanker should be backed away slowly from the SPM, stemming the wind or current, before setting the appropriate course clear of the SPM to sea. The initial backing-away from the SPM should generally be made at less than 0.25 kts, allowing time for the pick-up rope to be winched out and released in a controlled manner and without tension.	

Who	Step	Action	Initial/Date/Time
	3.6.2	Role of Mooring Master (2) - Unmooring on forecastle The Mooring Master and responsible deck officer should be on the forecastle to instruct the tanker's crew. <ol style="list-style-type: none">1. The mooring team should participate in a toolbox meeting to discuss all procedural and safety aspects of the task.2. Before unmooring the tanker, the Mooring Master should ensure that there is no load on the mooring hawser. If necessary, the Mooring Master should request a brief engine ahead movement.3. The hawser pick-up rope should be heaved taut until the weight is off the stopper tongue. The chain stopper securing pin should be removed and the stopper opened and secured in the open position.4. The hawser pick-up rope should be paid out slowly, ensuring that the chain clears the stopper and bow fairlead, until finally the chafe chain and support buoy are in the water.5. The hawser pick-up rope should then be paid out in a controlled manner, at the speed of the winch, and finally let go. The tanker's sternway should not exceed the winch speed. Where two hawsers are used, they may be disconnected simultaneously. However, the mooring hawser should not be crossed when lowered into the water. It may also be necessary to release and lower the hawser pick-up ropes one at a time, allowing the support vessel to tow each one clear in turn.	
3.7 SPM Equipment Defect List Report			
		During the tanker berthing discharging and un berthing , SPM Equipment Defect List Report shall be recorded to the following items . <ol style="list-style-type: none">1. SPM Navigation light, fog horn , Winker light .2. Port and Starboard Mooring Hawser and messenger line .3. Port & Starboard Hose strings .4. Port & Starboard Tanker rail hose , accessories , and messenger.	
END OF TASK			

Senior Operator

Initial

Time

Date

Who	Step	Action	Initial/Date/Time
4. HOSE CONNECTING PROCEDURES			
4.1 Connecting Procedure			
		Tanker manifold arrangements must comply with the latest OCIMF publication "Recommendations for Oil Tanker Manifolds and Associated Equipment"	

Who	Step	Action	Initial/Date/Time
		A minimum manpower for hose connection at least 4 persons and 1 crane driver. NOTE Only person in charge of hose connection working at manifold area. Only Mooring Master will give the crane signal to the ship's crane driver.	
		NOTE The SWLs prescribed for the lifting equipment of crane on tankers which summer deadweight at 120,001-160,000 tons (Suez Max) and over 160,000 tons (VLCC and above) is 20 tons SWL.	
		No way Tanker rail hose will be sit on Ship's tanker rail for avoid hose deformed. WARNING Before Hose connection operation commence , Mooring Master to ensure that no any part or equipment of tanker will harmful and might lead to damage to the hoses either on tanker manifold area or tanker 's side area / rail / tanker rail . Mooring Master will perform the operation only on safely condition .	
		CAUTION Care should be taken during the hose handling operation to avoid serious damage to the hoses and associated equipment.	
		CAUTION Be aware of hand injury and do not put hand and/or finger in between hose flange and manifold flange.	
		CAUTION Using ladder for access to manifold working platform.	
		CAUTION Mooring Master shall monitor on maintenance boat during towing floating hose string to tankers' side due to hoses may be damaged or fail when subjected to high axial load ,if dragged over the ground or if subjected to other mishandling such as being towed at high speed and etc. If any axial load accident/incident occur, the operation will be immediately aborted then initial visual inspect hoses. If a floating hose has permanent damage, hose shall be recovering it as quickly as possible to avoid accidentally sinking.	
MTB	4.1.1	WHEN The vessel has been securely moored	THEN Move the SPM starboard floating cargo hose string alongside at port side tanker manifold area.
SHP MM	4.1.2	Lower crane hook to the maintenance boat.	
MTB	4.1.3	Connect tanker crane hook to the SPM starboard hose's lifting wire.	

Who	Step	Action		Initial/Date/Time
SHP MM RIG	4.1.4	Heave up the hose until the connection of lower part of snubbing chain is level with the hose rail 's fairlead.		_____
RIG	4.1.5	Secure the snubbing wire/chain with a supporting chain on Tanker's deck.		_____
SHP MM	4.1.6	Lower the hose until the snubbing chain/wire connection are level at tanker rail 's fair lead .		_____
RIG	4.1.7	Remove hose snubbing chain/wire connection on topper part.		_____
RIG	4.1.8	Secure snubbing wire with rope messenger.		_____
SHP MM RIG	4.1.9	Heaving up the hose until the suitable height .		_____
RIG	4.1.10	Pull in all length of snubbing wire / chain until slack tight.		_____
RIG	4.1.11	Secure snubbing wire by turning to a bollard.		_____
RIG	4.1.12	Secure the snubbing wire end using a Tirfor.		_____
SHP MM RIG	4.1.13	Lower the hose to the safe access manifold area that for safely opening the blind flange.		_____
⚠ WARNING Aware of oil spillage when open the blind flange .				
MM RIG	4.1.14	WHEN	THEN	_____
		Verify for safely opening the blind flange.	Open the blind flange.	
SHP MM RIG	4.1.15	Adjust the hose until alignment with tanker manifold.		_____
RIG	4.1.16	Connect hose to the manifold.		_____
MM RIG	4.1.17	WHEN	THEN	_____
		Insert new gasket completed.	Tighten bolt the flange.	
MM RIG	4.1.18	WHEN	THEN	_____
		Open the hose end butterfly valve.	Secure the hose end butterfly valve.	

Who	Step	Action	Initial/Date/Time
SHP MM RIG MTB	4.1.19	Repeat step 4.1.1 to 4.1.15 for connected port hose.	_____
4.2 Figure 2			
<p>Hose connection</p> <p style="text-align: center;"><u>HOSE CONNECTION</u></p>			

Who	Step	Action	Initial/Date/Time
4.3 Figure 3			
Hose connecting sequence HOSE CONNECTING SEQUENCE			
END OF TASK			

Senior Operator

Initial

Time

Date

Who	Step	Action	Initial/Date/Time
5. HOSE DISCONNECTING PROCEDURE			
5.1 Disconnecting Procedure			
<p>Before Hose disconnection operation commence , Mooring Master to ensure that no any part or equipment of tanker will harmful and might lead to damage to the hoses either on tanker manifold area or tanker 's side area / rail / tanker rail . Mooring Master will perform the operation only on safely condition .</p>			
<div><div>⚠ CAUTION</div><div>SPM maintenance, particularly in bad weather, is extremely difficult and involves possible danger to personnel. For this reason, vessels are requested to give as much assistance as possible by taking seaman like care of the mooring and hose equipment and returning it to the water ready for the next tanker and in such a condition as they would like to find it.</div></div>			
<div><div>📝 NOTE</div><div>The SWLs prescribed for the lifting equipment of crane on tankers which summer deadweight at 120,001-160,000 tons (Suez Max) and over 160,000 tons (VLCC and above) is 20 tons SWL.</div></div>			
RIG	5.1.1	Close Tanker manifold valve.	
RIG	5.1.2	<div>WHEN</div> Close hose end butterfly valve on completion of discharging.	<div>THEN</div> Secure hose end butterfly valve.
SHP	5.1.3	Drain manifolds to Tanker storage tank.	
SHP RIG	5.1.4	Remove nylon bands.	
SHP MM RIG	5.1.5	Station crane hook waiting for disconnect the hose.	
SHP MM RIG	5.1.6	<div>WHEN</div> Attach lifting wire to the quick release hook completed.	<div>THEN</div> Connected with crane hook.
SHP MM RIG	5.1.7	<div>WHEN</div> Heave up lifting wire until take a weight.	<div>THEN</div> Disconnect the aft hose.

Who	Step	Action		Initial/Date/Time
MM RIG	5.1.8	WHEN	THEN	
		Replace the blind flange gasket with using a new gasket.	Tighten bolt the flange.	
SHP MM	5.1.9	Heave up the hose until the weight is off the snubbing chain/wire.		
RIG	5.1.10	Release the snubbing chain/wire.		
SHP MM	5.1.11	Lower the hose until the flange is level with the tanker rail.		
RIG	5.1.12	IF	THEN	
		Connect shackle snubbing chain/wire.	Secure shackle with the safety pin.	
<div>CAUTION</div> Lower hose to the water as directed by the Mooring Master.				
SHP MM RIG	5.1.13	Lower hose to the water.		
SHP MM RIG	5.1.14	Repeat step 5.1.1 to 5.1.14 for the forward hose.		
<div>NOTE</div> Care must be taken when lowering the forward hose to prevent hose damaged due to scratch / sharp edge /entanglement of the hoses . Hose/hawser maintenance is expensive and if SPRC judges that the vessel has misused any hose or hawser, the vessel will be liable for the expenditure incurred in making repairs.				
END OF TASK				

Senior Operator

Initial

Time

Date

Who	Step	Action	Initial/Date/Time
6. DISCHARGE PROCEDURES			
6.1 Cargo Discharge			
WARNING "Mooring Master must inform ship's officer to activate cargo emergency stop when any emergency situation occur and action as follow to be taken, <ul style="list-style-type: none"> • Activate cargo pumps emergency stop. • Shut ship's manifold valves. • Shut hose-end butterfly valves. • Shut SPM deck valves. • Inform Marine Control Building for emergency stop with verbal signal "STOP x3" • Shut crude line valve at shore. • Follow guidelines in procedure [HC-WI-PD-6094] • Plant 65 SPM Emergency Contingency Plan." 			
	6.1.1	On completion of all Government formalities, gauging, sampling, safety checks and documentation, discharge of cargo can commence.	
	6.1.2	The discharge operation will be controlled by VHF/UHF radio by the Mooring Master/Assistant between the vessel and the SPRC Marine Control Building (MCB). This does not absolve the vessel from communicating directly with the MCB if the Mooring Master/Assistant do not respond to radio calls or in an Emergency Situation.	
	6.1.3	During the discharge operation and while at the berth, the vessel must maintain a minimum of 30% of the Summer deadweight at all times. The SPM supplies crude oil to two refineries. Therefore, it may be necessary at the commencement of the discharge to displace the oil already contained in the SPM system and submarine pipeline to the appropriate refinery, before bulk discharge can commence.	
	6.1.4	In line samplers may be fitted at certain times to the vessel manifold to monitor cargo quality during the discharge. These samplers will be operated by the Independent Surveyor appointed to the vessel. However, the Mooring Master should ensure that the samplers are started at the commencement of the line flush and/or bulk discharge and that they are operational through out the discharge operation.	
	6.1.5	In the event that a line displacement is necessary, SPRC will require the vessel to pump approximately 23,130 m3 of crude into the system and then suspend cargo operations while changes are made to the line up of the crude receiving systems ashore. (Quantity will be dependent on which refinery is to receive the line displacement). During this operation the Mooring Master will coordinate directly with the Marine Control Building, who in turn will coordinate with the respective tank farm where the line displacement is being received.	

Who	Step	Action	Initial/Date/Time
	6.1.6	During the line displacement, SPRC will require the vessel to carefully monitor the quantity being discharged.	
	6.1.7	Once the line displacement is completed and the quantity discharged agreed, the bulk discharge of cargo can commence.	
	6.1.8	Throughout the discharge, a responsible deck officer must be in charge of operations, either on deck, or in the cargo control room and in continuous contact with the Mooring Master/Assistant via portable radio. An efficient deck watch must be maintained with continuous observation of the manifold area and the mooring hawsers. Ship mooring crew to keep a continuous forecastle watch and be in radio contact with Mooring Master at all times.	
CAUTION Maximum discharge pressure at ship's manifold 10.5 kg/cm ² or flow rate at shore not more than : SPRC tanks 9,000 m ³ / hr , PTGC tanks 8,500 m ³ / hr which will control whichever come first.			
	6.1.9	<p>Incorrect operation of pump and valve may produce pressure surges in pipeline system. These surges may damage pipeline and hoses.</p> <p>Information should be exchanged, and written agreement reached between tankers and Mooring Master concerning.</p> <ul style="list-style-type: none"> The control of flow rates. Valve closure. Pump speed. The minimum number of tanks to be open for loading at one time. <p>Mooring Master and tanker should ensure that the valves to an empty tank are fully open before closing any other valves with effective communication before and during every tank change to prevent surge pressures</p>	
WARNING In case of overpressure situation, Mooring Master must inform ship's officer to activate cargo emergency stop and action as follow to be taken, <ul style="list-style-type: none"> Activate cargo pumps emergency stop. Shut ship's manifold valves. Shut hose-end butterfly valves. Shut SPM deck valves. Inform Marine Control Building for emergency stop with verbal signal "STOP x3" Shut crude line valve at shore. Follow guidelines in procedure [HC-WI-PD-6094] Plant 65 SPM Emergency Contingency Plan." 			

Who	Step	Action	Initial/Date/Time
	6.1.10	On commence discharging operation , once confirmation are ready for receive from terminal and ship's are ready to discharge . Ship will discharge with initial pressure 3.0 kg/cm ² then to confirm for shore received cargo and every aspect are in good order . To increase discharge rate as per terminal instruction .	
	6.1.11	<p>At any time during discharge operations the terminal may request a reduction in rates, switch cargo grade / refinery, suspend discharge, etc. The Terminal will be give 30 ,15 ,5 minutes notice . At last 5 minutes, the discharge pressure will be a minimum. Whenever reach the target the terminal will instruct to suspend discharge then the tanker officer to stop discharge immediately and report time for suspend discharge to the Terminal.</p> <p>During suspend discharging, both hose butterfly valve and Ship manifold valve will be shut and secured.</p>	
NOTE Stop discharge for Switch refinery/Terminal inform 30 mins notice / the vessel will start reducing flow rate to 4,000 m ³ per hour and maintain this flow rate until the Terminal inform to stop discharge.			
	6.1.12	<p>To resume the discharging operation, the terminal will give 15 mins or as agree notice to SPM tanker. Whenever ready for received cargo , Terminal will instruct to SPM tanker for resume discharging.</p> <p>(Suspend as discharge plan long period will be give 2 hrs , 1 hr ,30 ,15,5 minutes notice.</p> <p>Tanker manifold will be fully opened . Discharging operation be resumed with initial pressure 3.0 k/cm² and report discharging time to the terminal.</p> <p>To increase discharge rate as per terminal instruction.</p>	
	6.1.13	At any time during discharge operations the terminal may request to reduction in rates for switch shore tank . The Terminal will be give 30 ,15 , 5 minutes notice . Approximately 5 minutes, the discharging flow rate will be 4,000 m. ³ / hr . Whenever the shore tank have been switched to the other tank ,as per discharging plan . Terminal will instruct to SPM tanker for switch shore tank time and requested increase discharge rate as per terminal instruction.	
	6.1.14	As an anti-pollution measure, the volume of oil discharged in m. ³ by the vessel must be relayed to the terminal on an hourly basis to allow for the comparison of figures (discharged against received). This is particularly important at night when it is difficult to detect oil pollution.	

Who	Step	Action	Initial/Date/Time
	6.1.15	During the hours of darkness, it is required that all available approved floodlights are used to illuminate the vessel and surrounding waters to facilitate the detection of oil and generally assist in the transfer operation. Vessels are advised that failure to supply sufficient lighting could result in the transfer operation being suspended during the hours of darkness. Such delays would be for the vessel's account.	
	6.1.16	It is strictly against the law to pollute the waters of Thailand and the Master and Owners, may be subject to prosecution by the Thai Authorities.	
	6.1.17	Maximum trim at all stages are 5.5 meters.	
	6.1.18	Discharge operation will be suspended when significant wave height are more than 2.5 meters .	
<div> <div>⚠ CAUTION</div> <div>The maximum discharge pressure allowed at the Ship's Manifolds is 10.5 kg/cm2 or 10.3 bar (150 psi)</div> </div>			
	6.1.19	On completion of discharge operation the rail tail hoses and ship's manifolds will be drained to prevent spillage of oil when disconnecting hoses.	
6.2 Crude Oil Washing			
<div> <div>NOTE</div> <div>Mooring Master will provide instruction for terminal Crude Oil Washing (COW) requirement which be required or not required up to each crude specification. However, MINIMUM COW OPERATIONS , AS REQUIRED BY MARPOL REGULATION 1973 – 1978 permission will only be granted provided all safety and operational requirements recommended in the "International Safety Guide for Oil Tankers and Terminals" (ISGOTT) have been met in full.</div> </div>			
		The surveyor will be sealed at COW line 's master valve of all cargo discharging tank . To break seal of nominate COW tanks by the surveyor as per tanker officer 's request .	
6.3 Ballasting Operations			
<div> <div>⚠ WARNING</div> <div>Extreme caution must be taken when ballasting operations are undertaken, to ensure no oil escapes through the vessel's sea valves.</div> </div>			

Who	Step	Action	Initial/Date/Time
6.4 Cargo Outturn			
		On the completion of the cargo discharge and prior to the tank inspection, all cargo valves, with the exception of the manifold valves should be opened to ensure all cargo lines and pumps have been properly drained during the discharge.	
		A comparison of Bill of Lading and Total Cargo Ship Discharge figures must be undertaken. If the quantity Ship Discharge is found to be 0.5% or more below the Bill of Lading figure / and or the Observed Quantity received ashore compare with Observed Quantity which Ship Discharge found the different is 0.5% or more, the vessel's tanks must be checked again in conjunction with the Independent Surveyor for any quantity remaining.	
		If the discrepancy still exists after the check, a Letter of Protest for the Shortage in Cargo Out Turn must be issued to the vessel's Master for his signature.	
END OF TASK			

Senior Operator

Initial

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Who	Step	Action	Initial/Date/Time
7. Operations of tanker in berth			
	7.1	Responsibilities The tanker's Master and the Mooring Master share joint responsibility and accountability for the safe conduct of operations while the tanker is at the SPM. Before cargo operation begin, the Master (or the Master's representative) and the Mooring Master should agree in writing the: <ul style="list-style-type: none"> • Cargo transfer procedures, including the maximum loading or unloading rates. • Action to be taken in the event of emergency. • Complete and sign the ship/shore safety checklist. Master will sign in Safety Requirement Letter (Appendix2: Star Petroleum Refining Public Company Limited Map Ta Phut SPM Terminal Thailand Mooring Master Check Lists and documentation)	


Who	Step	Action	Initial/Date/Time
	7.2	<p>Management of moorings and cargo hoses</p> <p>One Mooring Master will remain on watch at all times to monitor the position of the tanker with respect to the SPM, the mooring loads and weather conditions.</p> <ul style="list-style-type: none"> The condition and security of the chain stopper, chafe chain and hawser should be checked. The integrity of the cargo hose connections should be checked and the snubbing chains should remain tight, with on abrasion or undue movement. <p>Two Mooring Masters should be on duty during periods of heavy workload, such as during mooring, hose handling, pre-cargo discharge, critical stages of the cargo transfer, emergencies, periods of high winds or heavy seas and whenever the tanker's position relative to the SPM is causing concern or cannot be maintained.</p> <p>A suitably qualified and experienced watchkeeping officer should be on duty at all times.</p> <p>When the tanker is moored at the SPM, the tanker should provide two deck watchkeepers, one on the forecastle and one at the manifold, at all times.</p> <p>The watchkeeping officer should brief both deck watchkeepers on their duties and responsibilities. Mooring Master provides guideline 'How to Report' for the forecastle watch.</p> <p>A suitable static tow is provided to assist with berthing and after berthing with static tow to keep the Vessel a safe distance from the SPM, to control fish tailing motion and maintain safe alignment. The Mooring Master will advise the Master where, when and how the Towing. Vessel shall be made fast, prior to the Vessel's final approach to the Terminal. The static tow tug will provide the towing assembly.</p>	
	7.3	<p>Operational communications</p> <p>The Primary communication with terminal use VHF radio Channel 67 and the secondary communication use portable UHF radio Channel marine. Mooring Master provide portable radio to watchkeeping officer.</p> <p>The watchkeeping officer should carry a terminal supplied portable radio at all times to communicate with the Mooring Master. Deck and forecastle watchkeepers should be provided with portable radios communicate with the watchkeeping officer.</p>	
END OF TASK			


Senior Operator

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Time

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Who	Step	Action	Initial/Date/Time
8. TERMINAL SERVICES CONTRACT			
8.1 Contractor			
		<p>Uniwise Towage Limited is the Contractor responsible for providing marine support craft and manpower for the SPM Maintenance and day to day Operations, 24 hours a day, 365 days of the year.</p> <p>The Contractor will work under the directions of and report to the SPRC SPM Superintendent.</p>	
8.2 Contractor Vessel			
		<p>The SPM maintenance boat is the Multi-purpose Maintenance Vessel .</p> <p>The SPM maintenance boat is used primarily for mooring, hose handling, maintenance and diver support but is capable of performing all SPM support duties.</p>	
<div>  CAUTION </div> <p>The SPM maintenance boat will remain on station at the SPM location for security purposes. This is to prevent pilferage from the SPM or associated equipment and to ensure vessels navigating in the area give the SPM a wide berth.</p>			
		<p>Support tug boat equipped with Oil Spill Response Equipment and team to standby during SPM discharging Operation and if need at SPM area . The list of Oil Spill Equipment as follow :</p> <ul style="list-style-type: none"> Ro-Boom 2 sets Power Pack 1 set. Dispersant Sprayer 1 set . Oil Dispersant 8 drums. 	
8.3 Maintenance Support Personnel			
		<p>Maintenance support personnel for SPM and associated equipment. Minimum of three dedicated personnel, consist of 1 Diving Supervisor (AODC Certified) and 2 Maintenance and Emergency divers (fluent in English and have previous experience of SPM maintenance). In addition crew from the SPM maintenance boat to be available to assist in maintenance operations as and when required.</p>	

Who	Step	Action	Initial/Date/Time
8.4 Supervision			
		<p>The role of the Mooring Master during maintenance periods, is to oversee the work performed by the Contractors personnel. He is responsible for seeing that the work undertaken is done safely, following the procedures laid down in the following</p> <ul style="list-style-type: none">• <u>HC-WI-PD-4003 SPM Terminal Operating Procedure</u>,• <u>HC-WI-PD-4006 SPM Inspection and Maintenance</u>,• The SBM "Calm Buoy Operating and Maintenance Manual"• The OCIMF publication "Single Point Mooring Maintenance and Operations Guide". <p>If at any time the Mooring Master is not satisfied with the way the maintenance is being carried out, either through unsafe working practices or incorrect procedures, he is to suspend the operation immediately. The Contractor's supervisor at the location is to be notified and remedial action taken.</p> <p>If the situation cannot be resolved on site, the Mooring Master is to notify the SPM Superintendent immediately.</p>	
 NOTE THERE CAN BE NO COMPROMISE ON SAFETY OR INCORRECT MAINTENANCE PROCEDURES.			
END OF TASK			

Senior Operator

Initial

Time

Date


Who	Step	Action	Initial/Date/Time
9. DIVING SERVICES AGREEMENT			
9.1 Contractor			
		<p>Diving Contractor shall provide all personnel, material, supervision and expertise to undertake the following services as directed by SPRC. Diving Contractor shall provide the following requirement for any SPM / SPM related 's diving job scope :</p> <ul style="list-style-type: none">• One (1) Supervisor hold the formal International Marine Contractor Association (IMCA) training certificate.• Diving Operation Team shall hold minimum requirement of diving certificate and to be conducted training by full IMCA member. <p>Inspection of the SPM subsea installation.</p> <p>Diver assistance with surface hose change out.</p> <p>Removal of marine growth on SPM, hoses and PLEM by high pressure water jet.</p> <p>Cathodic protection readings of SPM and PLEM as directed by SPRC.</p> <p>Subsea hose change as directed by SPRC.</p> <p>Emergency call out, diver to be on site within 3 hours</p>	
END OF TASK			

Senior Operator

Initial

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Who	Step	Action	Initial/Date/Time
10. POLLUTION			
10.1 Prevention			
		<p>All International, National and Company rules, regulations and guidelines covering oil pollution must be strictly complied with at all times.</p> <p> WARNING</p> <p>The discharge of oil to the sea is strictly forbidden.</p>	
10.2 Reporting			
		<p>All pollutions observed offshore originating from the SPM, pipeline, hoses, vessel or from any other source are to be reported immediately to the Shift Supervisor, via the Marine Control Building Marine Coordinator. Action should be taken to reduce or stop the pollution if it safe to do so without endangering human life.</p>	

Who	Step	Action	Initial/Date/Time
10.3	Response		
		On receiving a pollution report, SPRC Management will investigate, and if necessary, activate the SPRC "Oil Spill Response Contingency Plan" .	
		The plan outlines the required procedures to be followed in the event of a Marine Pollution. All personnel involved in the SPM operations must familiarize themselves with the contents of this document.	
		The relevant sections covering the SPM area will be attached as an Appendix to this document.	
END OF TASK			

Senior Operator

Initial

Time

Date

Shift Supervisor

Initial

Time

Date

Appendix

1. Mooring Master Check List

Refer to Mooring Master Checklist updated

2. Discharging Information

SPRC	Star Petroleum Refining	Discharging Information	
	Public Company Limited	Map Ta Phut SPM	
Tanker Name: _____		Date: _____	
1. Crude to be discharged			
First grade		TOV (M ³)	
Second grade		TOV (M ³)	
Third grade		TOV (M ³)	
Fourth grade		TOV (M ³)	
2. Mooring Master (MM)/Shore Foreman staying onboard			
Capt. (Pilot)	Cabin	Tel	Watch Time
Capt. (MM)	Cabin	Tel	Watch Time
Capt. (MM)	Cabin	Tel	Watch Time
Shore Foreman	Cabin	Tel	
3. Surveyor / Agent Checker staying onboard			
Surveyor (No.1)	Cabin	Tel	
Surveyor (No.2)	Cabin	Tel	
Agent Checker	Cabin	Tel	
4. Communication:			
4.1 With Shore Control Station			
- Shore CALL SIGN "MCB" and Ship CALL SIGN "SPM"			
- Means VHF CH.67 (Primary) VHF CH. Marine (Back up)			
4.2 With Mooring Master			
- Pilot Mooring Master will keep watching during discharging			
- Means VHF CH.67, CALL SIGN "Mooring Master"			

SPRC	Star Petroleum Refining Public Company Limited	Discharging Information Map Ta Phut SPM
5	Requirement:	
5.1	Ship's crew watch keeping at FORECASTLE and at MANIFOLD all time	
5.2	Initial discharge pressure 3 kg/cm ² . Maximize discharging pressure at manifold to 10.5 kg/cm ² or flow rate (at shore not more than: PITTCG 8,500 M3/hr - SPHC 9,000 M3/hr)	
5.3	Cargo Pump RPM (Min - Max)	
5.4	Minimum tank number to be operated during discharge at one time	
5.5	During discharging, terminal will give a notice (30, 15, 5 mins) for any reduction due to stoppage, change tank, etc. SPM Tanker will give 10 mins notice to MCB for cargo grade completion.	
5.6	To switch shore tank, MCB request to reduce flow rate to 4,000 M3/hr.	
5.7	In case of pressure surge and overpressure, Emergency Shut Down must be activated and ship's manifold valves will be closed after cargo flow ceases.	
5.8	Ship's officer in charge CCR to call "MCB" and exchange crude oil volume (cubic meter) every hour.	
5.9	- Total cubic meter remaining onboard (TOD) - Discharge rate / quantity discharge last hour - Total cubic meter been discharged - Then "MCB" will return total cubic meter shore has received - Comparison between Ship's Shore figure. Always monitor and if more than 500 M3, the volume will be carefully rechecked and clearly with both tanker / shore side.	
5.10	Ship to maintain stability at least 30% of summer dead weight.	
5.11	Maximum trim at all stages are 5.5 meters.	
5.12	Discharge operation will be suspended when significant wave more than 2.5 meters.	
Acknowledge Receipt:		Truly Yours
Ship's Officer		Mooing Master
Revision No: 03	Copy No. 00	Page 1
Date 28 August 2023		

3. SPM Preberth Inspection

SPRC	Star Petroleum Refining Public Company Limited	SPM Pre-berth Inspection Report
Tanker Name:		Date:
Prior the tanker berthing operation, the following actions to be carried out:		
Subjects		Remarks
Check SPM environment, no damaged / no spillage / no leakage		
Check operation of SPM equipment and line		
Inspect buoys mooring arrangement / pick up ropes and damage		
Not finding / not catching and connections tight		
Shoring SPM to inspect buoys and shoring connection		
Shut down and pick up rope and self-storage for mooring assembly and other		
Warning have on		
For inspection from the weather or historic reason		
Total Load Mooring system on working properly		
Check hose and MCB connection no damaged / no leakage		
Further remaining problem (if any) or checking from the host		
Check lifting gear chains and lifting properly		
Check hose always checking correctly		
Check Wagon light condition and properly working		
Check Taretable running freely		
Boarding SPM and check or observing from the host		
Check vessel name from mooring product vessel		
Check mooring cable condition / lifting correctly		
Check SPM paperwork, correct equipment / no damaged / no leakage		
Check SPM lifting, flow, work, return, prevent gear, return		
All shoring SPM and line up, no damaged / no leakage		
Check all SPM finished / work / shoring / no damaged / no leakage		
Have permission / permission / permission (Check by Mooring Master)		
To verify and confirm that no cargo ship / equipment / equipment		
Backup and area will be damaged / no damaged / no leakage		
Tanker readiness (Check by Mooring Master)		
Support existing equipment at shore and all are in good condition / working		
Check Oxygen in all cargo tanks are below 5% / prevent gas production		
Check all ship tools and equipment are in good condition / working		
Inspect ship's tools and equipment for safety and condition for use		
Above subjects have accomplished and confirm SPM READY / NOT READY for berthing.		
Remarks:		
Check by: Major		Date / Time
Verify by: Mooring Master		Date / Time
Acknowledge by: Pilot		Date / Time

4. SPM Defect List

SPRC	Star Petroleum Refining Public Company Limited	SPM Equipment Defect List Report
Tanker Name:		Date:
During the tanker berthing / discharging / un-berthing, the following items observed:		
Subjects		Remarks
SPM Light / Fog horn and		
Winker light		
Port Mooring Hawser		
Sched. Mooring Hawser		
Port Mooring Messenger		
Sched. Mooring Messenger		
Port 24" Hose String		
Sched. 24" Hose String		
Port 16" Tail Hoses		
Sched. 16" Tail Hoses		
Port 16" Tanker rail hose &		
- Butterfly valve		
- Seabirding wire / chain		
- Lifting gear		
- Messenger		
Sched. 16" Tanker rail hose &		
- Butterfly valve		
- Seabirding wire / chain		
- Lifting gear		
- Messenger		

Check by (name) _____ Date / Time _____

Responsibility (signature) _____ Date / Time _____

Definitions**SHP : Ship (Tanker)****PILT : Pilot****MM : Mooring Master****WB : Work Boat****MTB : Maintenance Boat****STBT : Standby Tug****AGTT : Agent's Tug****References****N/A**

Amendment List

No changes specified in the current Revision of this Procedure.

Convert to SMART procedure.

Revision	Date	Page/ Section	Reason	By
3	10 Apr 23	All	Converted to Smart procedure	Suranun S. (PM)
3.1	Jul 23	Step 4.1	add "NOTE"	Suranun S. (PM)
3.1	Jul 23	Step 4.1	add "CAUTION"	Suranun S. (PM)
3.2	28 Aug 23	Page 14	Change crane minimum SWL to be 20 tons SWL.	Suranun S. (PM)
3.2	28 Aug 23	Section 3.6	Add Information 3.6.1, 3.6.2	Suranun S. (PM)
3.2	28 Aug 23	Page 17	Add "CAUTION"	Suranun S. (PM)
3.2	28 Aug 23	Section 4.1.1	Add "CAUTION"	Suranun S. (PM)
3.2	28 Aug 23	Section 5.1.1	Add "CAUTION"	Suranun S. (PM)
3.2	28 Aug 23	Section 6.1.1	Add "WARNING"	Suranun S. (PM)
3.2	28 Aug 23	Section 6.1.9	Insert new section 6.1.9	Suranun S. (PM)
3.2	28 Aug 23	Section 6.1.10	Add "WARNING"	Suranun S. (PM)
3.2	28 Aug 23	Section 7	Insert new section 7	Suranun S. (PM)
3.2	28 Aug 23	Appendix 2	Insert new item 5.3, 5.6	Suranun S. (PM)
3.3	01 Dec 23	Section 3.1.3	Add "CAUTION"	Suranun S. (PM)

Distribution List

Copy No.	Controller/Holder	Location
00	Electronic Controller	SmartProcedures

ภาคผนวก ข.29

บันทึกการตรวจสอบอัตราการส่งน้ำมันดิบ และระดับน้ำมันในถังเก็บ

Movement/Dispatches		
SPRC Area 6 SPM Ship/Shore Hourly Cargo Figures		
Prepared by:		Number: HC-FO-PD-6026
Approved by:		Revision: .1
Low	Medium	High

0101 = 6.510

SPM Crude Unloading Record

VESSEL Georgios. (SPRC/ PTTGC) _____
 CARGO 1 _____ B/L QTY _____ M3
 CARGO 2 _____ B/L QTY _____ M3
 CARGO 3 _____ B/L QTY _____ M3
 Line displacement to _____, Ship figures _____ M3, Shore figures _____ M3
 Line displacement to _____, Ship figures _____ M3, Shore figures _____ M3

Date Time 7-12-24	Ship ROB (M3)	Ship Disch rate (M3/hr)	Ship total disch (M3)	Shore received (M3)	Ship/ Shore Diff (M3)	Flow 96FI001 M3/hr	Press 96PI001 Kg/cm2	Remark Dee- 1943
1500	90821	12527	236888	236154			1793	2213
1600	86977	9344	240732	240975			4121	2850
1700	86231	1167	241442	241135			860	2982
1800	80905	5326	246768	245752			4616	3696
1900	79082	1823	248591	247421			1669	3946
2000	74997	4985	253576	251587			4466	4631
2100	68776	1857	255433	253702			6815	5623
2200	62958	6512	261945	264241			6979	6526
2300	56464	6804	268749	271080			6839	7575
0000				277763			6683	8600
0100	49183		282662	284256			6493	9596
0200	42816	6367	289029	290626			6370	10573
0300	39546	6270	295299	296865			6239	11520
0400	32700	6846	302145	302682			6017	12453
0500	26272	6198	308343	307980			6098	13395
0600	19617	3955	312298	311940			4159	13873
0700	11128	3489	315787	315660			3520	14413
0800	8005	3123	318910	318309			3149	14896
0900	5684	2316	321226	320906			1917	15147
1000	5094	605	321831	321506			1350	15394

08/12/24

stripping

1200 326000 3045 15999
 1300 324174 1194 1479
 Revision No.: .1 HC-FO-PD-6026

Date: 22 August 2018

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13:24 SPM completed discharge

Movement/Dispatches		
SPRC Area 6 SPM Ship/Shore Hourly Cargo Figures		
Prepared by:		Number: HC-FO-PD-6026
Approved by:		Revision: .1
Low	Medium	High

60110 = 6.510

60106 = 6.521

SPM Crude Unloading Record

VESSEL MT Georgios (SPRC/ PTTGC) _____
 CARGO 1 _____ B/L QTY _____ M3
 CARGO 2 _____ B/L QTY _____ M3
 CARGO 3 _____ B/L QTY _____ M3
 Line displacement to _____, Ship figures _____ M3, Shore figures _____ M3
 Line displacement to _____, Ship figures _____ M3, Shore figures _____ M3

Date Time 7-12-24	Ship ROB (M3)	Ship Disch rate (M3/hr)	Ship total disch (M3)	Shore received (M3)	Ship/ Shore Diff (M3)	Flow 96FI001 M3/hr	Press 96PI001 Kg/cm2	Remark Dee- 1943
1200	213615	4445	104236	103966	-252	106110	3187	16483
1300	216610	5015	109253	109441			5655	2680
1400	209792	8318	118071	117736			7896	3811
1500	202067	7225	125296	125527			7791	10086
1600	194366	9701	133497	133201			7674	11263
1700	186907	7459	140956	140901			7700	12444
1800	179269	7536	148492	148548			7648	13612
1900	171615	7651	156143	156124			7576	14779
2000	164683	7905	163078	163380			7526	15892
2100	160188	4496	167574	167774			4994	16971
2200	152704	7283	174857	174735			6951	17977
2300	145338	7284	182141	181819			7074	18205
0000	138828	16810	198957	198887			7062	19008
0100	131772	7066	206023	205838			6957	19775
0200	124617	7165	213188	212652			6814	20420
0300	118043	6774	220962	220742			6690	21046
0400	111456	6517	227479	227243			6501	21643
0500	105375	6221	233700	233489			6344	22170
0600	99703	6872	240572	240292			6403	22752
0700	94582	4121	244693	244305			4793	16085
0800	93395	1247	245940	245361			1356	16283

0612

0102

0712

Revision No.: .1

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203 pend ~ 5 hrs.

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Movement/Dispatches		
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: left;"> </div> <div> Area 6 SPM Ship/Shore Hourly Cargo Figures </div> </div>		
Prepared by:	Number: HC-FO-PD-6026	
Approved by:	Revision: .1	
Low	Medium	High

60D107 = 6.516
60D105 = 6.522

SPM Crude Unloading Record

326050 23130

VESSEL MT dEO R6105 (SPRC/ PTTGC)

CARGO 1 PTDC B/L QTY 22130 M3

CARGO 2 Murbon SPRC B/L QTY 245560 M3

CARGO 3 Das JPRC B/L QTY 80490 M3

Line displacement to _____, Ship figures _____ M3, Shore figures _____ M3

Line displacement to _____, Ship figures _____ M3, Shore figures _____ M3

Date Time	Ship ROB (M3)	Ship Disch rate (M3/hr)	Ship total disch (M3)	Shore received (M3)	Ship/ Shore Diff (M3)	Flow	Press	Remark
						96FI001 M3/hr	96PI001 Kg/cm2	
18:36	Comp.	Connect	Hose					
18:54	Comm.	Discharge						
20:00	325434	2429	2429	4425	-1996		4425	
21:00	317687	7938	10667	10622	-455	9.8	6197	
22:00	310734	6953	17129	17051	78		6429	
22:54	Stop	Discharge						
23:00	303338	6896	23125	23175			6124	10055
23:30	Stat	Discharge	to SPRC	60D107				
00:00				24662		8.7	1492	10284
01:00	246724	7114	31006	31030	-97	8.7	6366	11261
02:00	289615	7109	38115	38930	815		7897	12073
03:00	281032	8583	46698	46801	-103		7871	13681
04:00	273474	7558	54256	54704	-448		7902	14894
05:00	266523	6433	61157	61597	-440		8893	15952
06:00	262565	4010	65167	65827	660		4290	10404 10708
07:00	257983	4540	69757	69357	400		3730	11370
08:00	250407	7366	77123	76607	516		7050	11451
09:00	242937	7776	84899	84355	564		7746	13659
10:00	235309	7655	91554	91025			7670	14615
11:00	228120	7149	98743	99617			7592	15979

21:50
boiler trip
reduce flow #500

to D105

Revision No.: .1

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Date: 22 August 2018

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