

HSE MANAGEMENT PLAN

TIMIMOUN Field Development Project

2015. 03. 07

Timimoun Construction Dept.

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WHY are the” Project Health, Safety, Environmental, Security” Important?

- I. To minimize any potential HSSE effect.
- II. To provide guidelines to members of the Algeria TFD Project of the criteria to be applied during the project cycle.
- III. To understand Local Algeria safety, environmental and health regulations.
- IV. To explain to you what the project standards and practices and your roles & responsibilities.

ZERO INCIDENT / ACCIDENT

GOOD COORDINATION WITH CLINET

1. FULLY UNDERSTAND ITB REQUIREMENTS
2. LOCAL REGULATION
3. HARMONY AND RELATIONSHIP

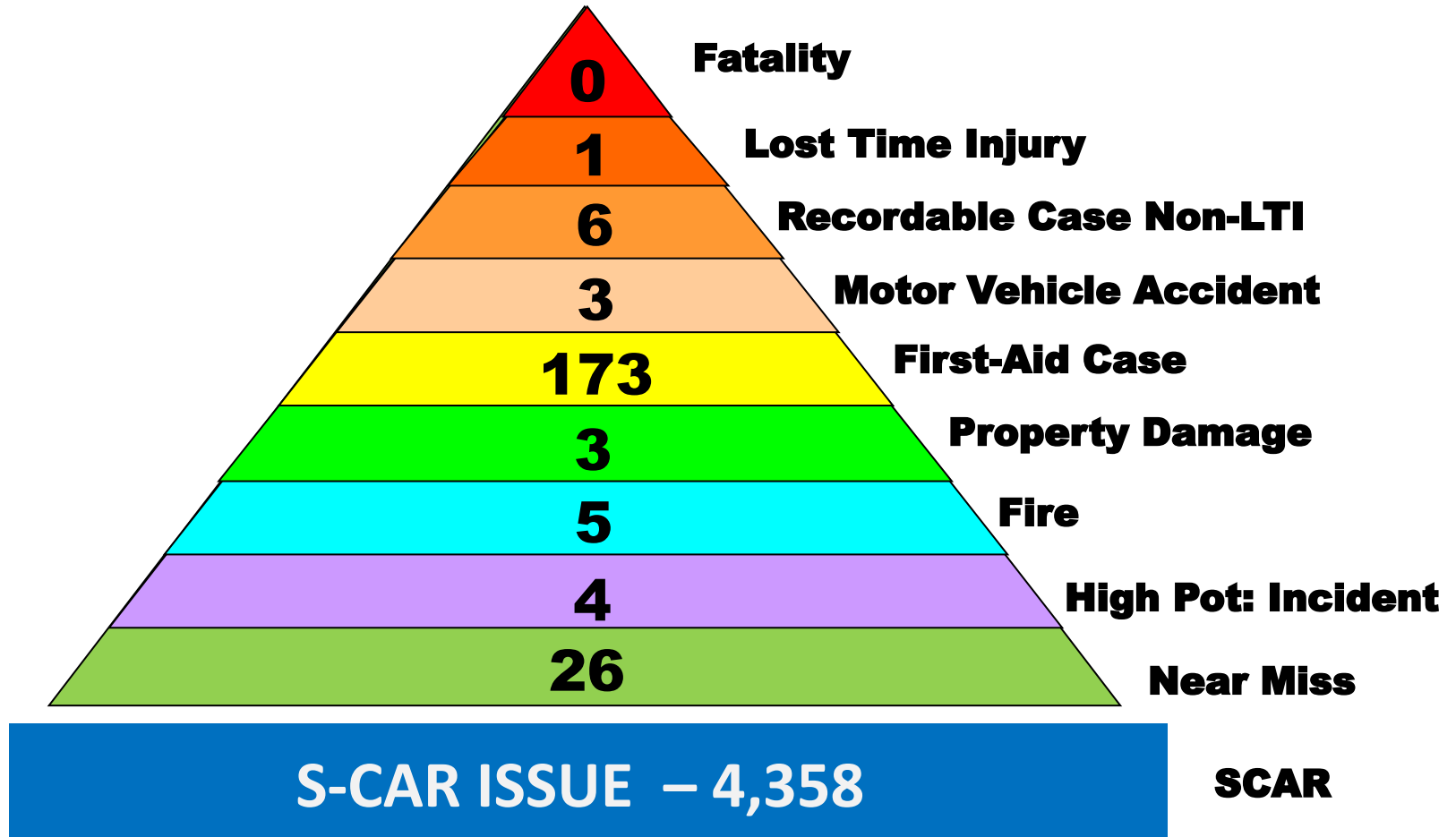
FOLLOW HSE SYSTEMS

0. HSE POLICY
1. WORK PERMIT SYSTEM
2. RISK ASSESSMENT
3. INSPECTION
(S-CAR, COLOR CODE)
4. HSE TRAINING
5. HSE COMMITTEE
6. DISCIPLINARY POLICY
7. INCENTIVE PROGRAM
8. LEADERSHIP AND OWNERSHIP

LEADER AND GUIDE TO SUBCONTRACTORS

1. EDUCATE SECL AND CLIENT'S REQUIREMENT
2. PERIODIC AUDIT
3. CLOSE MONITORING
4. LEVEL UP HSE KNOWLEDGE

Project HSE Statistics–20th Mar–2017



PROJECT SAFE MAN-HOURS	7,435,164
TOTAL MAN-HOURS	10,780,740
DAILY MANPOWER	2,201

3. LEADERSHIP AND ACCOUNTABILITY

- I. CONTRACTOR shall ensure that adequate safety levels are maintained and environmental impacts are planned for and monitored during the entire performance of the WORK.
- II. CONTRACTOR shall ensure that, during all the WORK execution, the social aspects are taken into account and well managed, ensuring good relationship with local communities and authorities, minimizing negative impacts and maximizing positive impacts on them.
- III. CONTRACTOR shall bear the cost and any and all impact on the WORK TIME SCHEDULE resulting from, or otherwise connected with any of the following actions:
 - Meet the specified HSE regulations and other safety related requirements;
 - Perform the WORK in accordance with well-accepted safe working practice in the oil and gas industry and established available industry practices for environmental performance;
 - Meet all HSE requirements defined in the CONTRACT;
 - Measures and actions taken by GTIM in lieu of CONTRACTOR on the grounds of CONTRACTOR failing to take the necessary HSE measures and actions;
 - Assessment, control and mitigation of Security and societal risks.

4. HSE POLICY

 **SAMSUNG ENGINEERING**

HSE POLICY

Health, Safety & Environment (HSE) management is the utmost value at Samsung Engineering Co., Ltd. (SECL) and SECL is committed to the 'world class' of HSE management throughout all stages of our business activities., It is our policy to proactively manage HSE to protect our employees, clients, subcontractors and the communities.

To achieve our ultimate HSE goal of zero incident, SECL and subcontractors shall follow as below;

- Work in a safe and environment friendly manner, in compliance with applicable global and local HSE legislation.
- Identify hazards via pre-risk assessment and simulation to minimize potential risks.
- Conduct rigorous internal and external auditing to ensure compliance with the requirements of OHSAS 18001 and ISO 14001.
- Select only pre-qualified subcontractors who are capable of accomplishing rigid procedures for accident prevention.
- In case of accident, conduct investigation to identify the exact cause of the accident, analyze all incidents and accidents including near-misses, unsafe acts/conditions and utilize them to prevent recurrences.
- Ensure all members of staffs and subcontractors are trained in HSE techniques via training courses and comply with HSE regulations.

Aforementioned HSE policy and activity performances of each field should be published to inside and outside the organization, and seek continual HSE improvement by conducting regular review and monitoring of HSE Management System and relevant procedures.


Choong Heum Park / President & CEO

The main goal of Algeria TFD Project HSE philosophy is to ensure HSE of all personnel, to eliminate property damage and to provide a safe and comfortable working and living environment, during the entire construction period.

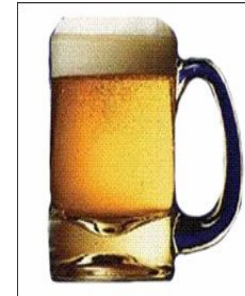
CONTRACTOR will maintain its own safety philosophy as described below.

- HSE is the top priority of the project.
- All incidents and accidents are preventable.
- All tasks will be planned and performed with concern for HSE.
- Emphasize design as the best preventive measure to reduce and mitigate risk.
- Minimize the consumption of materials, fuels, and energy and discharges of air emissions, effluents, and solid wastes.
- HSE is a line management responsibility linked directly to top management.
- Identify and eliminate or minimize inherent hazard in the work.
- Closely monitor each steps of the work to detect and promptly eliminate hazards and unsafe practices.
- Provide clear and concise written instruction, rules and plans for the work to be performed.
- Use trained and qualified workers and supervisors.
- Recognize and reward outstanding performance.
- Provide adequate personnel protective equipment (PPE).
- Monitor the correct use of PPE.

4. HSE POLICY

Alcohol and Drug Policy

- ✓ **To be terminated** for any employee/subcontractor of CONTRACTOR if found.



Smoking Policy





- ✓ **To be provided** the smoking shelter with fire extinguisher in the designated areas



4. HSE POLICY

Road Safety Policy

CONTRACTOR will ensure that road safety policy will be adhered by employees in the project with regards to **journey management, defensive driving and speed limit both within the project job site and out of the site.**

	Ne déplacez le véhicule que si tous les passagers ont attaché leur ceinture
	N'utilisez pas de téléphone ou équivalent pendant que le véhicule est en marche
	Vitesse maximum autorisées : (sauf signalisation ou conditions plus contraignantes) Sur route goudronnée : 80 km/h En agglomération : 50 km/h Sur terrain sans risque : 70 km/h En présence de pierres, sable ou trous : 50 km/h
	N'abandonnez aucun déchet non organique dans le désert.

JOURNEY TRACKING RECORD												
IN CHARGE NAME:..			POSITION:..				DATE:..					
GENERAL INFORMATION				DETAILS OF JOURNEY TO				DETAILS OF JOURNEY RETURN				REMARK
NO.	VEHICLE NUMBER	DRIVER NAME	COMPANY NAME	DEPARTURE FROM	DEPARTURE TIME	DESTINATION	ARRIVAL TIME	RETURN FROM	RETURN TIME	RETURN DESTINATION	ARRIVAL TIME	
..
..
..
..
..
..
..
..

IF ANY UNUSUAL EVENTS OCCURRED DURING THE JOURNEY:..

✓ Contractor shall be informed it to SECL Security Team **before traveling.**

4. HSE POLICY

Zero Tolerance Policy

- ✓ CONTRACTOR will enforce the Zero Tolerance Policy on site.
- ✓ Any person violates the rules and regulations mentioned above will be given into punishment and/or be removed from the site.
- ✓ According to OGP, in case of violation of responsibility of supervisor and ultimately of management (subcontractor), then appropriate sanctions will be given.

6 REGLES HSE ESSENTIELLES DU PROJET TIMIMOUN



- 1 : Gardez toujours une ceinture de sécurité attachée dans un véhicule en déplacement
- 2 : N'approchez pas des charges manutentionnées en mouvement
- 3 : Restez à distance des véhicules et engins en action
- 4 : Respectez et faites respecter les limites de vitesses et la non utilisation du téléphone
- 5 : Utilisez un système de protection si vous êtes exposé à un risque de chute de plus de 2 mètres
- 6 : N'abandonnez jamais un déchet non organique dans le désert

Travailler pour le projet Timimoun = Respect de ces règles....

10 Safety **GOLDEN RULES** is ...



COMPLIANCE

SAFETY FIRST!



COMMITMENT



a promise by all the employees

to keep safety,

and to create a Safety First Culture
to improve safety mindset

SECL'S 10 Safety **GOLDEN RULES**



USE **PPE** CORRECTLY



SECURE **LANYARDS** AT HEIGHTS



OBTAIN A **PERMIT** BEFORE WORK



ASK FOR APPROVAL TO ENTER **RESTRICTED AREAS**



USE CERTIFIED **ELECTRICAL EQUIPMENT** WITH ADVANCE PERMISSION



VERIFY ALL PASSENGERS SHALL USE **SEAT BELT**



ASK FOR APPROVAL TO REMOVE **SAFETY DEVICES**



BARRICADE WHILE WORKING **UNDER LOADS OR OVERHEAD WORK**



ATTEND **EMERGENCY DRILLS**



REPORT ALL **INCIDENTS**

※ The Rules will be based on the SAMSUNG Group's Ten Safety Incident Prevention Guide.

5. KEY PERFORMANCE INDICATOR(KPI)

KPI #	REALISTIC TARGET	ACHIEVEMENT (Frequency, responsibility)	Action By	Remarks
1	Incident's /Accidents (Fatality, LTI/LWC, MT, Property Damage)	ZERO (As Objective)	All Members	Site & Head Office
2	Near miss Reporting (SCAR Reports)	<ul style="list-style-type: none"> ▪ 4 per supervisor/ Weekly ▪ 100% Reporting ▪ HSE Team is not limited 	<ul style="list-style-type: none"> • Site Manager • Supervisors • Construction Manager • HSE Manager 	<ul style="list-style-type: none"> ✓ Issued by HSE Team ✓ Closed out by Construction Team ✓ Checked by HSE Team
3	HSE Inspections	100% Daily, Weekly, Monthly	▪ Competent Persons	Report & Record
4	HSE Audit (Site Based)	Monthly	HSE Manager/ Area HSE Manager	Using checklist
5	HSE Audit (Head Office)	As Required	Head Office HSE	At least Bi-annually
6	HSE Trainings (Induction training & others)	Daily (New Arrivals), Weekly and Monthly 100%	<ul style="list-style-type: none"> • HSE Trainer • HSE Manager 	
7	Competency Certifications (Riggers, Scaffold supervisors, Crane Operator, other equipment operators, NDT personnel etc)	100% for Competent Persons	<ul style="list-style-type: none"> • HSE Manager 	3 rd party
8	Safety Meetings/ walk through	Weekly, Monthly, Meetings, etc.	<ul style="list-style-type: none"> • Site Manager • HSE Manager • HSE Committee 	With Contractor staffs.

7. TRAINING

□ New Employee Training

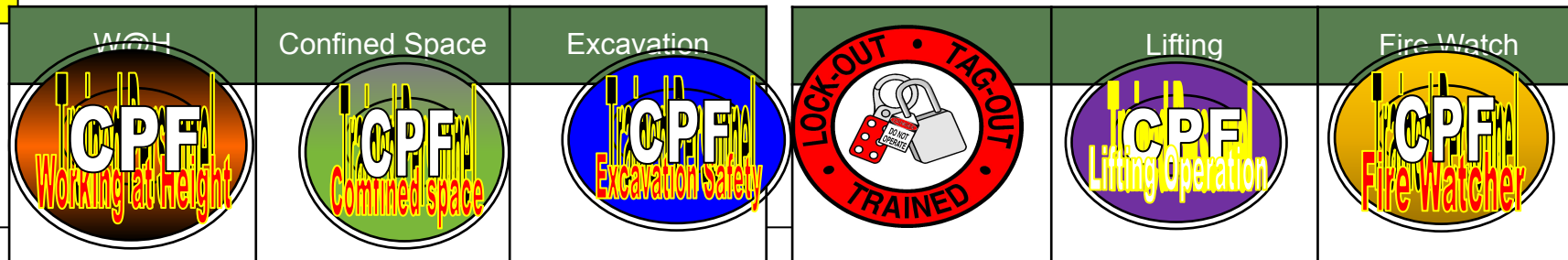
- New Employee Training highlighting the items stipulated in HSE Plan will be conducted prior to start of work for all new employees (after training will be provided with ID Card & sticker to be attached on the helmet)



□ Special Training(sample)

Time	Training Topic					Remarks
	Mon	Tue	Wed	Thu	Fri	
08:00-09:00	Confined Space	Banks Man Awareness	Rigging and Lifting	Fall Protection	Scaffold	" Time can be changed as necessary "
13:00-14:00	Fire Watch	Handling of hazardous material	Excavation and Trenching	LOTO	Hot work	

STICKER SAMPLE



7. TRAINING

APPENDIX 3: HSE Training Matrix

Training Matrix		RISK MANAGEMENT				SPECIFIC HSE TRAININGS																							
JOB DESCRIPTION		HSE Orientation	Work Permit	Risk Assessment	BBS / Zero Tolerance	PPE	Excavations	Scaffold safety	Ladders	Fall protection	Welding/Grinding	Confined Space	Electrical Safety	Lifting & Rigging	Pressure Test	Radiography	Heat stress	Heavy Equipment	Tool Safety	Material Handling & Storage	Compressed Gas Cylinder	Fire Prevention	Emergency Response	Lock Out Tag Out	Defensive Driving & Traffic	Watchman R&R	Safety Observation	Health & Hygiene	
SUPERVISORY PERSONNEL	PROJECT MANAGER	X	X	X	X	X											X						X		X				X
	CONSTRUCTION MANAGER	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	SUPERINTENDENT	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	SUPERVISORS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	FOREMEN	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LABOUR	HSE STAFF	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	SURVEYORS	X	X			X	X	X	X						X	X	X			X			X		X				X
	WELDERS	X	X			X	X	X	X	X	X					X	X	X		X		X	X	X					X
	PIPE FITTERS	X	X			X	X	X	X	X	X				X	X	X		X		X		X	X	X				X
	IRON WORKERS	X	X			X	X	X	X	X	X					X	X	X		X		X	X	X					X
	SCAFFOLDERS	X	X			X	X	X	X	X					X	X	X		X	X			X						X
	RIGGERS	X	X			X	X	X	X						X		X	X		X	X			X					X
	MILL WRIGHTS	X	X			X	X	X	X									X	X		X	X		X	X				X
	ELECTRICIAN	X	X			X	X	X	X	X	X	X					X	X		X		X	X	X	X				X
	CARPENTERS	X	X		(1)	X	X	X	X	X	X							X	X		X	X		X					X
	REBARMAN	X	X			X	X	X	X	X	X							X	X		X			X					X
	MASONS	X	X			X	X	X	X	X								X	X		X			X					X
	PAINTERS / SAND BLASTER	X	X			X		X	X	X						X		X		X	X		X	X					X
	OPERATORS	X	X			X									X	X	X	X	X		X			X		X			X
	DRIVERS	X				X												X	X					X		X			X
	MECHANICS	X				X										X	X	X		X	X			X	X				X
	WAREHOUSE PERSONEL	X				X												X	X		X			X					X
SUPPORTING PERSONNEL	WORKERS / HELPER	X	X			X	X	X	X	X	X				X	X	X	X	X	X	X	X	X	X			X	X	X
	WATCHMAN																	X					X	X	X			X	
	MEDICAL STAFF	X				X											X						X		X	X			X
	SECURITY STAFF	X				X											X						X		X	X			X
SUPPORTING PERSONNEL	OFFICE STAFF	X				X														X			X		X				X
	VISITORS	X				X																	X		X				X

Note 1: 1 out of 20 workers will be trained on BBS

8. S-CAR

Object

- To effectively monitor & identify unsafe acts & conditions, which potentially affect all expected accidents.

Content

HSE Manager on the project shall monitor the participation of S-CAR issuances with actions and share the risk points arising from S-CAR analysis information with all project-related personnel.

SAMSUNG SAMSUNG ENGINEERING Safety Corrective Action Request

Issue Date & Time	13_Sep 2013 [am/pm] 07:50
Issue No.	HSE
Subcontractor	Name: <input checked="" type="checkbox"/> Civil <input type="checkbox"/> Arch. <input type="checkbox"/> Elec. <input type="checkbox"/> Mech. <input type="checkbox"/> Other
Issuer	Name: _____ Sign: _____
Correction Conductor	Name: _____ Sign: _____
Due Date	<input checked="" type="checkbox"/> Immediately <input type="checkbox"/> By today <input type="checkbox"/> By 1 day after <input type="checkbox"/> By _____ Other _____
Work Stop	<input checked="" type="checkbox"/> No Work Stop <input type="checkbox"/> Until Correction <input type="checkbox"/> Until Work Approved <input type="checkbox"/> Other _____
Potential Hazard Type	<input type="checkbox"/> Fall <input type="checkbox"/> Elect. <input type="checkbox"/> Collapse <input type="checkbox"/> Fire <input type="checkbox"/> Struck <input type="checkbox"/> Cut <input type="checkbox"/> Work Condition <input checked="" type="checkbox"/> Other _____
Description	<input checked="" type="checkbox"/> Work Contents : <input checked="" type="checkbox"/> Potential Hazard : <input checked="" type="checkbox"/> Corrective Actions :
Construction Manager	Name: _____ Sign: _____
Comment	
Inspector (Issuer/Safety)	Name: _____ Sign: _____ Date: _____
Inspection Result	<input type="checkbox"/> Approved <input type="checkbox"/> Not Approved <input type="checkbox"/> Other _____

Before

After

SOCOT PROJECT

Safety Corrective Action Request

SCAR

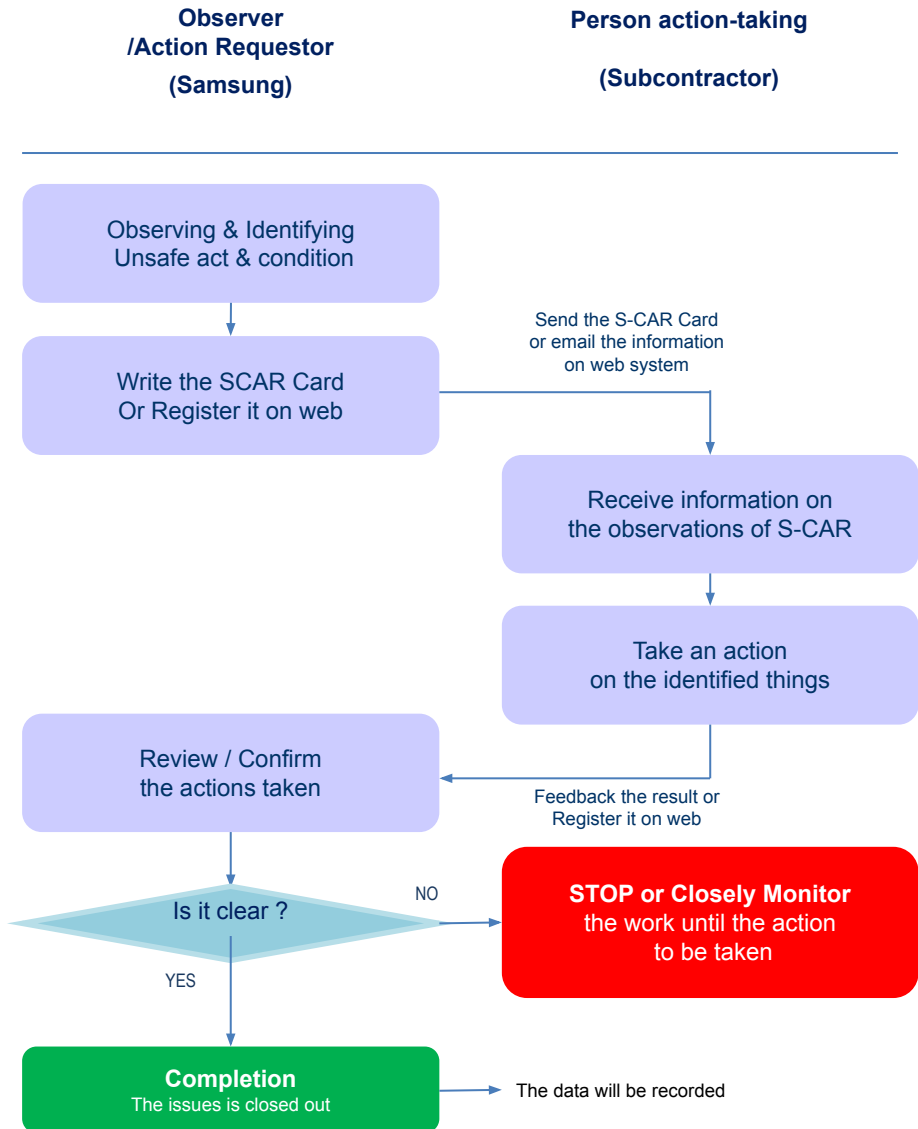
Company	AIT
Issuer's Name	You woo ri
Issuer's Discipline	HSE

FOR AIT
Safety Corrective Action Request

Issue Date & Time	20 11 3:24 (am/pm) 24:24
Issue No.	AIT - HSE - 0
Subcontractor	Name: _____
Issuer	Name: W.C.L. Sign: [Signature]
Correction Conductor	Name: A Sign: _____
Due Date	<input checked="" type="checkbox"/> Immediately <input type="checkbox"/> By today <input type="checkbox"/> By 1 day after <input type="checkbox"/> By _____ days after <input type="checkbox"/> Other _____
Work Stop	<input checked="" type="checkbox"/> No Work Stop <input type="checkbox"/> Until Correction <input type="checkbox"/> Until Work Approved <input type="checkbox"/> Other _____
Potential Hazard Type	<input type="checkbox"/> Fall <input type="checkbox"/> Elect. <input type="checkbox"/> Collapse <input type="checkbox"/> Fire <input type="checkbox"/> Struck <input type="checkbox"/> Cut <input type="checkbox"/> Work Condition <input type="checkbox"/> Other _____
Description	<input checked="" type="checkbox"/> Work Contents: <i>working</i> <input checked="" type="checkbox"/> Potential Hazard: <i>electric shock</i> <input checked="" type="checkbox"/> Corrective Actions: <i>change wire</i>
Construction Manager	Name: _____ Sign: _____ Date: 20
Inspector (Issuer/Safety)	Name: _____ Sign: _____ Date: 20
Inspection Result	<input type="checkbox"/> Approved <input type="checkbox"/> Not Approved <input type="checkbox"/> Other _____

8. S-CAR

Process of issuing S-CAR



SAMSUNG SAMSUNG ENGINEERING

Safety Corrective Action Request

Issue Date & Time	* 03,Nov 2014 [am/pm] 14:30	
Issue No.	HSE Ou 005/Nov 03 rd	
Subcontractor	*Name : STAGMA <input checked="" type="checkbox"/> Civil <input type="checkbox"/> Arch. <input type="checkbox"/> Elec. <input type="checkbox"/> Mech. <input type="checkbox"/> Other	
Issuer	Name : OUAkli Massinissa Sign.	
Correction Conductor	Name: Sign.	
Due Date	<input type="checkbox"/> Immediately <input checked="" type="checkbox"/> By today <input type="checkbox"/> By 1day after <input checked="" type="checkbox"/> By ___ Other ___	
Work Stop	<input checked="" type="checkbox"/> No Work Stop <input type="checkbox"/> Until Correction <input type="checkbox"/> Until Work Approved <input type="checkbox"/> Other ___	
Potential Hazard Type	<input type="checkbox"/> Fall <input checked="" type="checkbox"/> Elect. <input type="checkbox"/> Collapse <input type="checkbox"/> Fire <input type="checkbox"/> Struck <input type="checkbox"/> Cut <input type="checkbox"/> Work Condition <input type="checkbox"/> Other ___	
Description	<input checked="" type="checkbox"/> Work Contents : poor housekeeping <input checked="" type="checkbox"/> Potential Hazard : environmental and work condition <input checked="" type="checkbox"/> Corrective Actions : housekeeping	
Construction Manager	Name: Sign.	
Comment		
Inspector (Issuer /Safety)	Name : OUAkli Massinissa Sign. Date : 03 Nov 2014	
Inspection Result	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Not Approved <input type="checkbox"/> Other ___	

Before

After

Should be closed it immediately

9. PCM/S-PCM

Purpose

- To select effective and safe work method to conduct risk management prior to sub-contractor high risk work
- To conduct simulation of work, establish preventive plan and apply to site execution

Contents

- Discipline wise work activity
- HSE management checklist on detail work process
- Setting up Safety-Action items
- Feedback and Reporting

Flow



※ PCM(Pre-Construction Meeting)

※ S-PCM(Small Pre-Construction Meeting)

Activity	Action by	Key POINT
① Establish Plan	Subcon. Supervisors	Subcon in charge should prepare Plan for construction with safety measure before start.
② Review plan	Discipline Supervisors & Subcon. Supervisors	Check for potential hazards and take action to reduce risks
③ Discussion	Discipline Supervisors & Subcon. Supervisors & Safety Personnel & Site manager	Discuss effective and safe work method to conduct risk management prior to sub-contractor high risk work

④ Operation

Work in Charge person

Operate by safe method on site

10. Color-Code

Purpose

- To ensure safe usage of tools and equipment via pre-inspection of Critical equipment and rigging gear
- To eliminate risk before work by systematic and practical inspection

Color Coding System

- When:** Formal quarterly inspections must take place for the selection or replacement
- Who:** A competent person
- What:** Lifting gears & equipment, Power Tool, etc.

Color Codes Boards

Sample of Color Code Stickers

COLOR CODING SYSTEM

Lifting Equipment, Electric/Pneumatic Tool

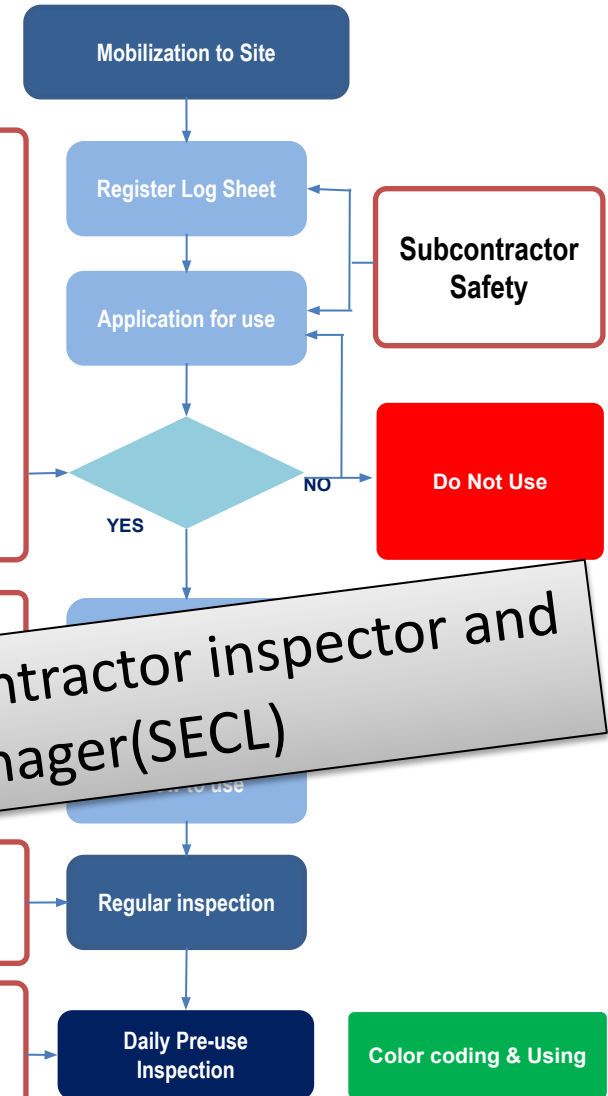
JANUARY	APRIL	JULY	OCTOBER
FEBRUARY	MAY	AUGUST	NOVEMBER
MARCH	JUNE	SEPTEMBER	DECEMBER

DO NOT USE

INSPECTED	INSPECTED																																
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		To: _____																															
Model No.	Register No.	Inspector	Sign																														
DO NOT USE	DO NOT USE																																
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Process

- Designated Inspector shall perform the followings;
- Inspection by check sheet on power tool, lifting gears, heavy equipments
 - Self Inspection check List
 - Visual Inspection on Lifting Gears
 - Ensure Color Coding serial number



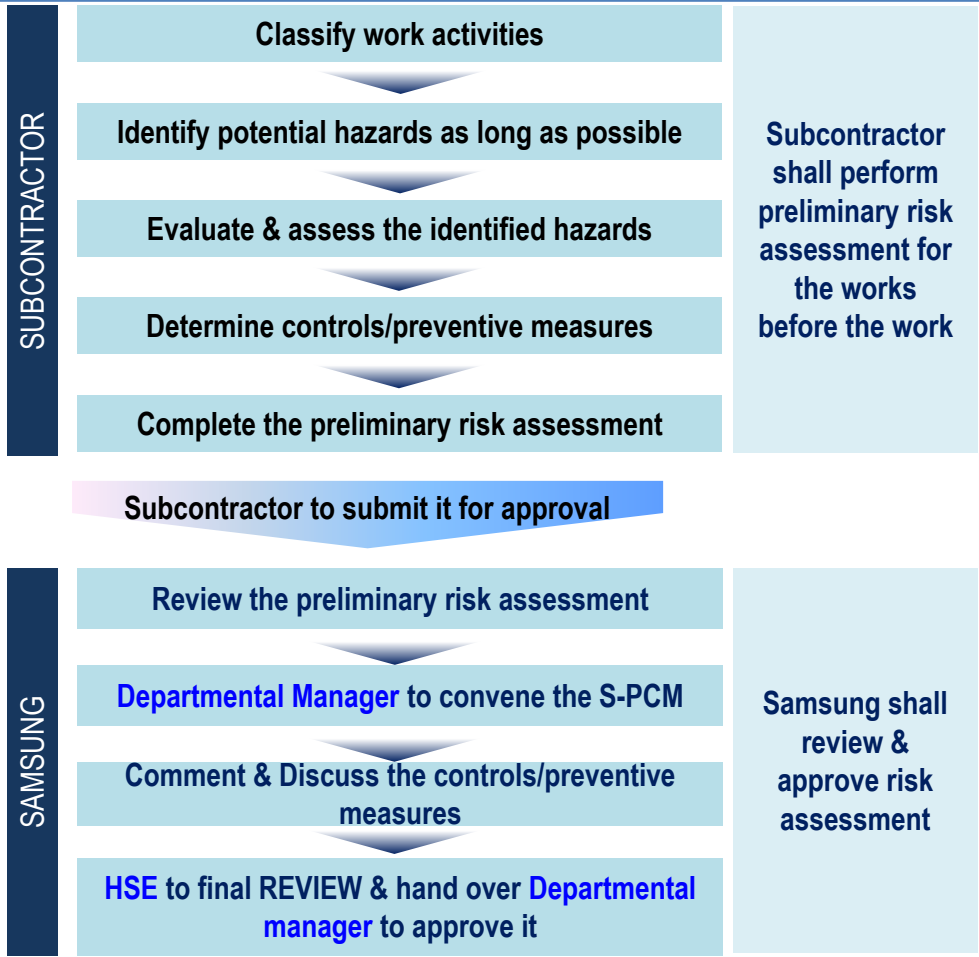
Will be done by subcontractor inspector and report to Site HSE Manager(SECL)

11. RISK ASSESSMENT

Purpose

- To identify potential hazards & risk to take the action of the control measures for the specific task.

Work flow



Project stage:		Equipment Erection			Location:		TIMIMOUIN SITE			
Work:		Lifting								
No	Activity	Potential Accident or Hazard	Initial Risk Rating			Control Measures / Mitigation Actions	Responsible	Final Risk Rating		
			S	L	RL			S	L	RL
1	Lifting	<ul style="list-style-type: none"> Potential unsafe equipment mobilized by sub-contractor People working close to moving loads Unqualified crane operators Wear of damaged slings 	4	4	16	<ul style="list-style-type: none"> Third party certificate before crane mobilization Conduct training about crane safety Check operators qualification Certificate & Experience Inspection prior usage 	Field control HSE HSE	3	2	6

Date	SUB CONTRACTOR		SECL			
	Agreed By		Reviewed by HSE Manager		Approved by Discipline SI	
	Position / Name	Sign	Position / Name	Sign	Position / Name	Sign
/ /						

Severity \ Likelihood	1	2	3	4
4(B)	4	8	12	16
3(C)	3	6	9	12
2(D)	2	4	6	8
1(E)	1	2	3	4

The colors in the risk matrix denote the general bands of risk as defined below.

Routine	Moderate	High
---------	----------	------

- NOTE:**
- Each Dept should be submitted risk assessment to HSE Dept before every Thursday 12:AM
 - The risk level above is "MODERATE" shall be included all activities and those activities are issued Permit to Work before starting any work.
 - The routine activities can work without PTW But after prepared as below
 - Risk assessment
 - HSE training for supervisor
 - HSE Induction for workers

12. PERMIT TO WORK

INTRODUCTION

Samsung has developed 'Permit To Work' system to issues the permit the work performance prior to the work start, which has two function to review & check safety preparation for the work operation as checklist and to approve that the work start.

Samsung work permit procedure requires that work permit for the high risky work shall be issued & approved as the following work types.;

Cold Work Permit is required for work or activity inside the site that does generally not produce a source of ignition such as general work, painting and cleaning etc

Hot Work Permit is required when tools and equipments that produce a source of ignition (flames, sparks and electrical arcs), are used inside area such as welding, gouging and cutting etc.

Confined Space Entry Permit is required for worker activity in the confined space atmospheres.

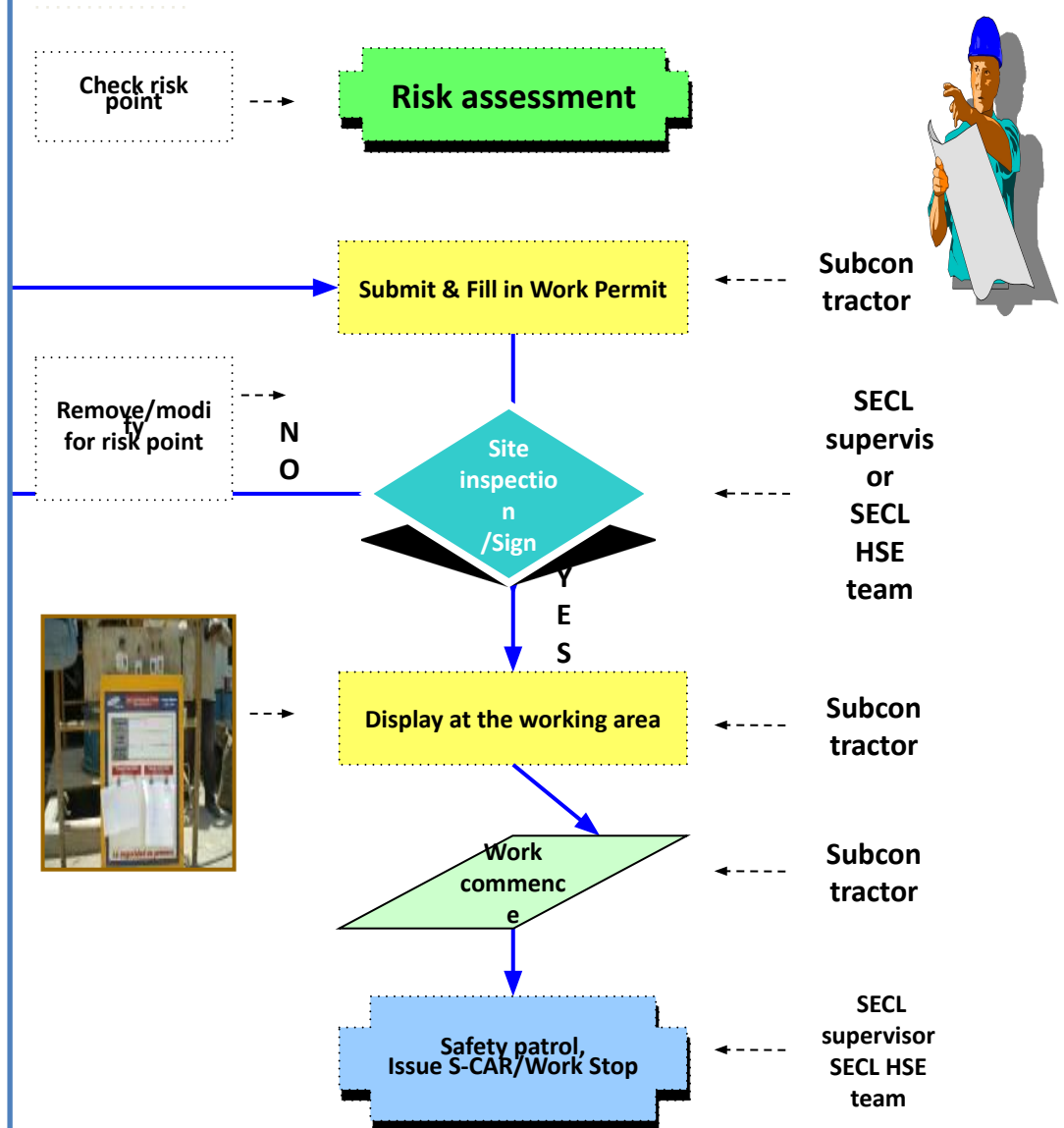
Lifting Work Permit is required for lifting work as normal, critical, tandem lifting including man-basket lifting.

Excavation Work Permit is required for excavation work. Prior to starting excavation work, the responsible personnel shall ensure the obstructions (e.g. underground pipelines, electricity cables and etc.) exist at excavation work site.

Radiography Permit is required for radiography operation work, which is as a checklist to ensure that all the required pre-cautions have been taken before doing radiography work.

※Permit to work process and the permit form may be changeable in dependant upon project condition or external authority.

Process



13. PPE

Employees, trade contractors, vendor, visitors and others on the site wear the appropriate personal protective equipment. Example as the following picture;

Hard hats are worn in the construction areas where there is a risk of injury (1926.100)

Mandatory eye protection is required on all projects in the construction area when the following conditions exist: all types of hammers, saws, chipping tools, brooms, grinders, impact tools, drills, chemicals, hazardous substances which create dust, mist, and fumes, concrete pouring, grouting, etc. (1926.102)

Face shields are worn when a danger of harmful chemical or physical contact with the face is present. (1926.102)

Those in areas of moderate, extreme or long term noise wear appropriate hearing protection. (1926.101)

Only NIOSH/MSHA respirators approved for the work conditions are used when necessary. (1926.134)

Respirators or appropriate filters are used when using substances containing toxic vapors, fumes or dust in oxygen deficient environments (less than 19.5% oxygen) or other hazardous areas.

Those painting or working with hazard chemicals are wearing a respirator that meets those specific requirements.

If disposable respirators are used by multiple persons, they are cleaned before each use.

Persons working in confined or enclosed areas where they could be overcome by toxic fumes work only when an outside observer is present. Rescue equipment is be available at all times when such work is being performed.

Those welding or working with metal or sharp objects are wearing safety goggles.

Overall workers are adequately protected.



14. ELECTRICAL

Power circuits where accidental contact by tools or equipment may be hazardous, are marked with warnings explaining the hazard.

All equipment is either grounded or double-insulated.

GFCI (Ground Fault Circuit Interrupter) .ELCB circuits are installed on all 110-120 V temporary circuits.



The worker shall check the electrical equipment with double-insulated and GFCI equipped.



Check the double-insulated symbol

Temporary lights are equipped with guards to prevent accidental contact with bulb.

Receptacles (attachment plugs) are not interchangeable with circuits of different voltages.

Electrical cords are not frayed, cut, nicked and are in good repair.

Electrical cords are not used for hoisting, or carrying tools or equipment.

There are an appropriate number of outlets for the tools being used circuits are not overloaded.

The circuit breaker panel is clearly labeled and secured.

Electrical outlets are provided with a face plate.

The Electrical panel has at least 4 square feet in front that is clear and unobstructed.

Work areas are kept free of cords and excess equipment.

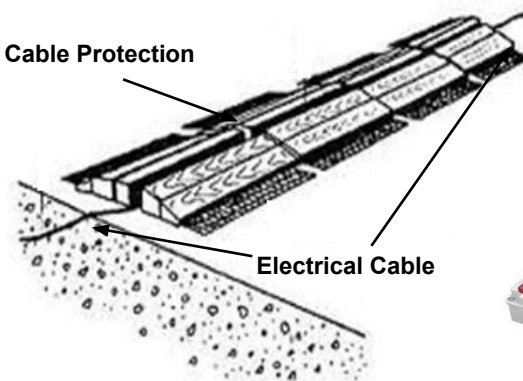
Temporary lights are equipped with guards to prevent accidental contact with bulb.

Receptacles (attachment plugs) are not interchangeable with circuits of different voltages.

Electrical cords are not frayed, cut, nicked and are in good repair.

Electrical cords are not used for hoisting, or carrying tools or equipment.

Cable Protection



Protection for Temporary Lights



Receptacles & plugs

There are an appropriate number of outlets for the tools being used circuits are not overloaded.

The circuit breaker panel is clearly labeled and secured.

Electrical outlets are provided with a face plate.

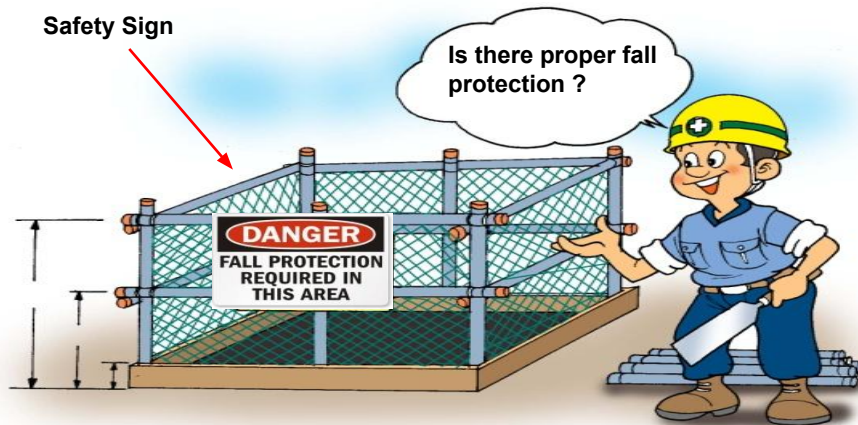
Fixed electrical distribution cubicles will be equipped with 300mA differential circuit breakers and 30mA differential circuit breakers if there is any possibility of water on ground.

For confined space work 24 volt supply with protection will be provided.

15. FALL PROTECTION

Holes or openings are barricaded or covered securely and marked.

Those working above 6 feet(1.8 m) off the ground are protected by a guardrail, safety net, or personal fall arrest system (exceptions are made for those installing trusses when a truss erection plan has been approved and adequate training provided). (1926.501(b)(2)) Employees working down below other employees or hazards are protected (hard hats, canopies, toe board, etc).



The time that employees subjected to fall hazards is minimized.

Personal fall protection devices and equipment is provided with training on fall protection.

Openings less than 44 inches (111.76cm) off the floor and greater than 6 feet(1.8m) from any lower surface are protected by a guardrail or other suitable safety precaution.

Rope guardrails are marked every 6 feet with a highly visible material.

To comply with a 100% fall protection program, CONTRACTOR will provide safe working platforms e.g. scaffolds, man lifts etc when working above 1.8 meters.

This will include the provision of safe scaffolds, guardrails, ladders and working platforms. **Scaffold will conform to BS 5973 (Code of Practice for Access and Working Scaffold) & BS 1139 (Metal Scaffolding)**

Personal fall arrest systems are inspected prior to each use by a competent person. 100% tie off is required when working at or above 25ft. This requires the use of 2 lanyards, life lines, or static lines.

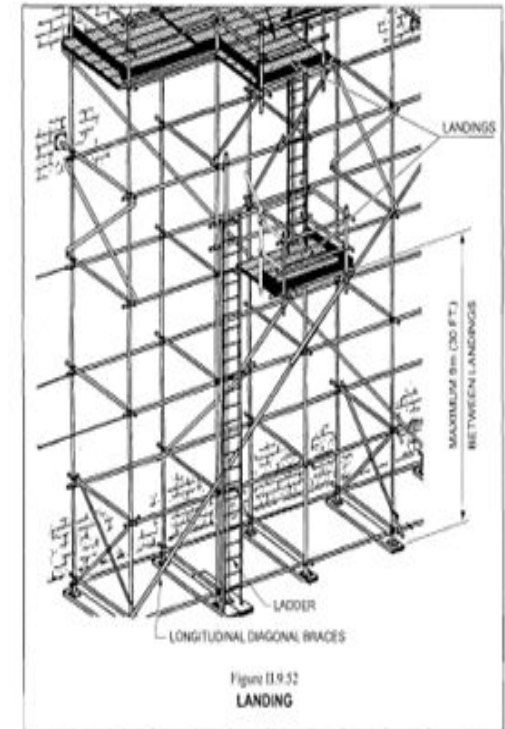
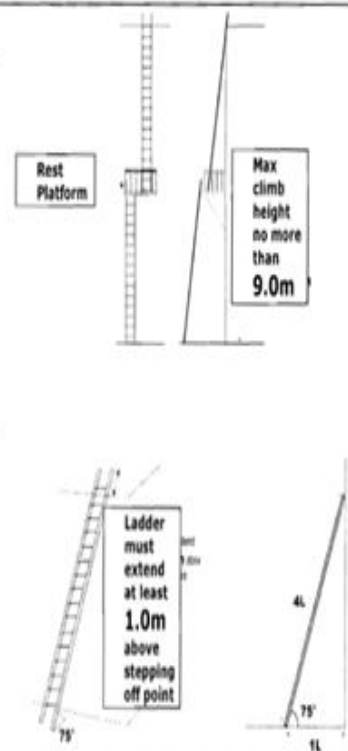
Lanyard, harness, D-rings, and other personal fall arrest systems are in good condition and suitable for use. Fall arrest systems(E.g. lifeline etc) are anchored to an appropriate capable of withstanding 5000lbs of force. (1926.104)

Safety nets shall be provided when workplaces are more than 25 feet above the ground or water surface, or other surfaces where the use of ladders, scaffolds, catch platforms, temporary floors, safety lines, or safety belts is impractical.(1926.105)

15. FALL PROTECTION



- ❖ Probably the most hazardous part of a scaffold
- ❖ Used for access to /from the scaffold 1-4 Rule
- ❖ Always check for damage before use
- ❖ Can be metal or wood (depends on site conditions).
- ❖ Never use "home made" Ladders



To be provided proper access for vertical intervals of **no more than 9.0m** and horizontal intervals of **no more than 30m**.

16. EXCAVATION

The underground utilities have been located and marked. Trenches 5ft (1.5m) or more in depth are shored, or have sides sloped. (1926.652)

The walls and faces of all excavation where employees are exposed to danger from moving ground are guarded by a shoring system, sloping, or benching of ground.

The slope of benched or sloped excavations and the shoring is designed based on the type of soil.

All parts of shoring system are in good repair.

Excavations are no deeper than 2ft below the base of any shoring system (1926.652(g)(2))

Excavated or other material is placed a minimum of 2ft from the edge of excavations. (1926.651(j)(2))

Excavations have barricades surrounding them where necessary.

Have all trenches 4ft and greater been provided with stairways, ladders, or ramps within 25 ft of each employee. (1926.651)

CONTRACTOR will ensure that:

No excavation work is performed without a valid work permit comprising a map of all buried or undergrounds hazards in areas containing underground lines.

Appropriate precautions are taken in order to prevent ground movement;





The excavating machinery (when used) will be positioned at a set distance from the excavation and trench walls will be stabilized.

Access and Egress

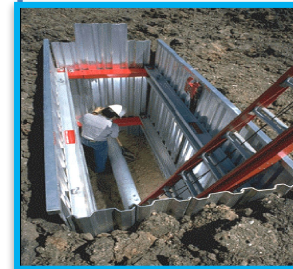
SUBCONTRACTOR will provide ladders, stairway, ramps or other safety means of access and egress in each:

Excavation which is 1.2 m (4 ft) deep or more; the safety means will be placed at distance non greater than 10 m one from each other;

Trench which is 1 m deep or more; **one (1) ladder every 15 meters of trench length**

Soil Type	Cross Section
Stable Rock – Natural Solid mineral	
Type A Soil – A cohesive(tight)soil, such as clay or rock. Previously disturbed Type A soil becomes Type B or Type C soil.	 
Type B Soil – A less cohesive soil, such as a mix of sand, rocks, and clay. Previously disturbed Type A soil becomes Type B or Type C soil.	

※ Maximum Allowable Slopes for Height < 6m (20ft)



Type C Soil – The least cohesive soil, such as gravel, sand, muddy or freely seeping soils, and submerged rock that is not stable

17. LIFTING

All cranes shall have a valid inspection certificate from approved 3rd party.

Supplemental lifting equipment used below the hook (spreader bars and man-baskets) **shall have a valid inspection certificate from approved 3rd party.**

-All cranes shall be inspected by the operator prior to use with the daily inspection check list

Operations

-Details of crane lifts shall be communicated to the affected personnel in the area

-A designated signal man and crane operator shall use universal hand and/or radio signal. The crane operator's line of sight to the designated signal man shall not be obstructed

-Tag lines shall be used on all lofts, except when their use may create a great hazard

-Don't lift side load. Don't swing load) over personnel or traffic areas

-Know the accurate weight of all loads and lifting gear prior to the lift

-Outriggers shall be used with appropriate pads and mats. Booms shall not be swung without outriggers being extended in accordance with the manufacturer's specification

-Crane operator shall not leave the crane cab while the load is attached to crane.

-Position (lower) hydraulic crane booms and secure hook while travelling

-Crane lifts shall not be allowed at wind speeds above **32km/h (20 mph)** unless otherwise specified by the manufacturer

-Crane with man-basket suspended operations shall not be allowed at wind speed greater than 25 km/h (15 mph)

- Cranes shall be operated around power lines in accordance with the distances provided in the Project HSE Requirement



18. WELDING AND CUTTING

Gas Welding and Cutting

Transporting or storing compressed gas cylinders, are cylinders **secured and caps** in place. (1926.350(a)(1))

Cylinders are secured in a vertical position when transported by powered vehicles. (1926.350(a)(4))

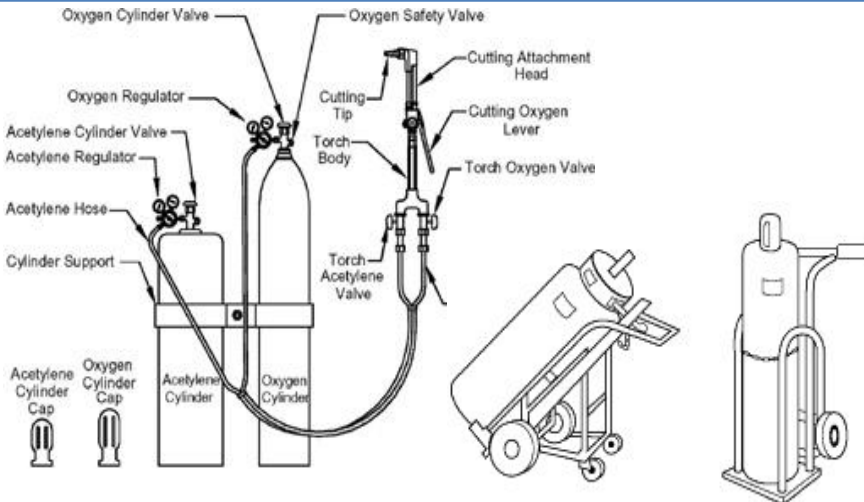
All compressed gas cylinders are **secured in an upright** position at all times.

Torches should be inspected for leaking shut off valves, hose couplings, and tip connections at the beginning of each shift.

Oxygen cylinders and fittings should be kept away from oil and grease.

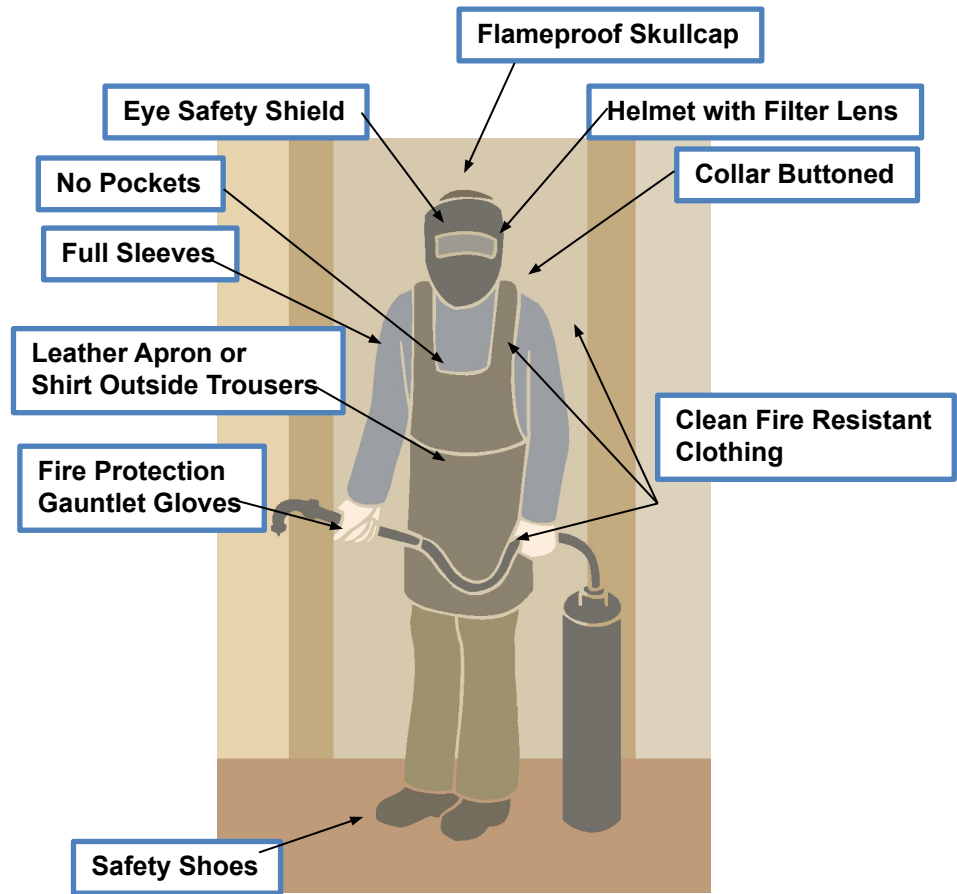
Oxygen and fuel gas regulators should be in proper working order.

Oxygen and **fuel gas cylinders in storage will be separated by at least 6 meters.**



Gas cylinder shall be secured and upright

Proper PPE



※ Refer to 29 CFR 1926. 28 and relevant

19. CONFINED SPACE

Definition of confined Space

"Confined space" means a space that: (1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and (2) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and (3) Is not designed for continuous employee occupancy. Example of confined space entry work as below;

- **Welding in Vessel**
- **Tank internal inspection.**
- **Work in sewers, sump pits, or valve boxes.**
- **Excavations or trenches deeper than 1.2 m (4 ft) that meet**

Preparation - 29 CFR 1910.146(b),(c)

1. Testing the area of the confined space entry work
 - Flammable gas less than 10 % of LFL(lower flammable limit)
 - Airborne combustable dust less than a concentration of LFL
 - Oxygen concentration 19.5 ~ 23.5 Vol%
2. Prepare the confined space entry work permit
3. Provide Rescue service
4. Any other safety (E.g. training, safety sign posting etc.)



20. FIRE PREVENTION

A fire extinguisher is provided for **every 3000 square feet** of space that is rated 2A at least.

A portable fire extinguisher is within **100 ft.** of all working areas.

Portable heaters are being used in accordance with specifications.

All employees or subcontractors know the location of the fire extinguisher and know how to operate it.

Employees have been trained in how to properly use a fire extinguisher.

Fire fighting equipment is accessible and maintained at all times in good repair

Smoking is prohibited in possible fire hazard areas.

Flammable and combustible liquids are marked and properly stored appropriate containers.

Soiled or combustion rags are properly stored or disposed of.



- Refueling of equipment in area isolated from the general work area and from any source of ignition. The area will be curbed to contain possible oil/fuel spillage.
- Provision of "No Smoking" and "Turn off Ignition" signs Grounding of refueling vehicles/containers will be carried out.
- The majority of equipment will be refueled 'off site' at the designated fuelling station(s).

Due to the impractical logistics of moving heavy equipment off site for refueling, this can take place on site provided the following minimum requirements are implemented:-

- No fuelling to take place within 30 meters of any hot work including grinding, welding etc.
- No equipment will be refueled while the engine is running.
- No smoking.
- Discharge nozzles on fuel hoses will be fitted with an automatic shut off valve.
- Banded trays will be placed under all portable equipment to contain any leaks.
- Fuel bowsers to be provided** with adequate amounts of absorbent material which must be applied immediately to any fuel spillage.
- Any spillage will be immediately dealt with and the contaminated absorbent material and contaminated soil must be disposed of immediately in accordance with the control and disposal of hazardous substances.
- Spill kits and training of spill response will be provided to avoid soil contamination due to spill during fueling on site.

21. SANITATION & HOUSEKEEPING

- Toilet provided at the jobsite.
- Adequate supply of potable water at jobsites.
- Personal garbage and lunch sacks are removed from the site or properly disposed of so as not attract rodents, pests or insects.



Number of Employees	Recommendation
20 or less	1
20 or more	1 toilet seat and 1 urinal per 40 workers
200 or more	1 toilet seat and 1 urinal per 50 workers

Housekeeping (29 CFR 1926.25)

- Work site is clean and free of dangerous waste and material.
- Scrap materials are removed, or stacked in orderly fashion.
- Trash and combustible material are placed in containers provided for that purpose.
- Scrap lumber, hoses, cable wiring and all other debris is clear from work areas, hallways and stairways.
- Nails are removed from scrap lumber and other unused materials.
- There are no spills of liquid and materials that may cause an accident.
- Work areas have the appropriate amount of lighting.
- Holes and openings are protected and marked appropriately.



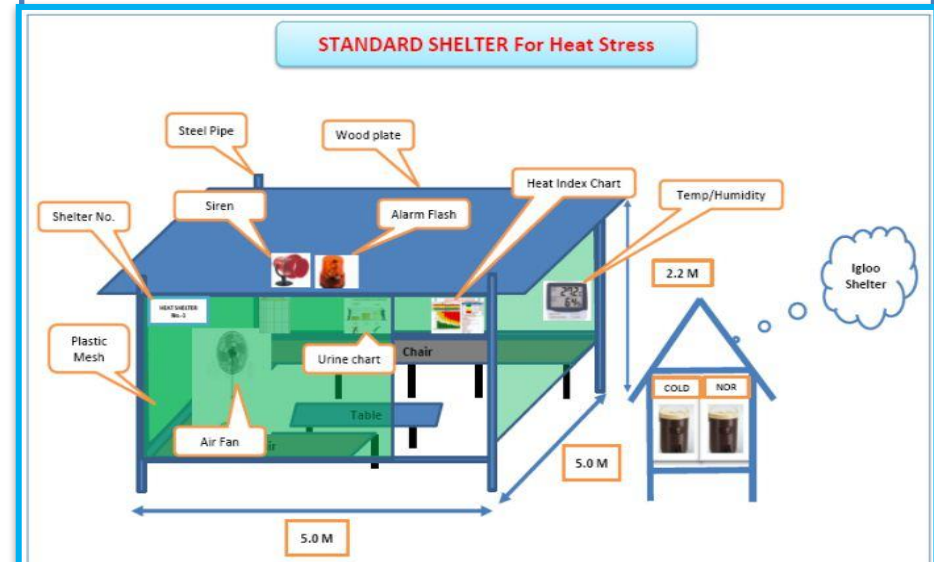
It will be cleared from building at least daily and work area will be maintained free of accumulation of debris.

22. HEAT STRESS

Samsung recommends that heat stress prevention measures are provided to the employees who is exposed to heat/hot condition with humidity in indoor environments or outdoors are at risk of heat-related illness, especially when those doing heavy works. The preventive measurement for heat stress are to adjust resting time in working hour, to provide proper shade/shelter and awareness training etc. The heat index & preventive measures are only for reference(See OSHA website);

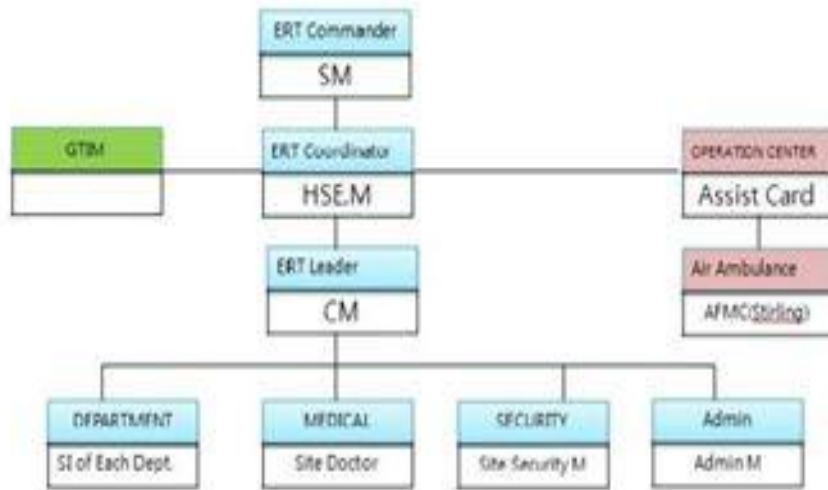
Heat Index	Risk Level	Protective Measures
~ 91 °F (32°C)	Lower (Caution)	To provide the following; - Drinking water - Adequate medical services - Heat safety training etc.
91 ~ 103 °F (32~39.4°C)	Moderate	- Schedule frequent breaks in cool, shaded area - Acclimatize workers - Set up buddy system/instruct supervisors to watch each workers
103 ~ 115 °F (39.4~ 46.1°C)	High	- Alert workers of high risk conditions - Actively encourage workers to drink plenty of water (4 cups/hour) - Limit physical exertion (e.g. use mechanical lifts) - Adjust work activities (e.g., reschedule work, pace/rotate jobs)
115 °F ~ (46.1°C)	Very High to Extreme	- Move essential work tasks to the coolest part of the work shift - Consider earlier start times, split shifts, or evening and night shifts.

- **CONTRACTOR** will train all persons via HSE induction and toolbox talks in how to avoid heat stress and recognizing the symptoms of heat stress.
- **Provision of copious amounts of good quality cold and potable water for all persons.**
- **Provision of shelters for persons to take rest at working areas.**
- **Rotation of workers duties to avoid continual working in extreme hazardous areas e.g. confined spaces, working at height, welding etc.**
- **Re-schedule of hot/hazardous jobs to be done at cooler times of the day.**
- **Clinic to be equipped with medical supplies to be able to deal with heat stress emergencies.**



23. MEDEVAC

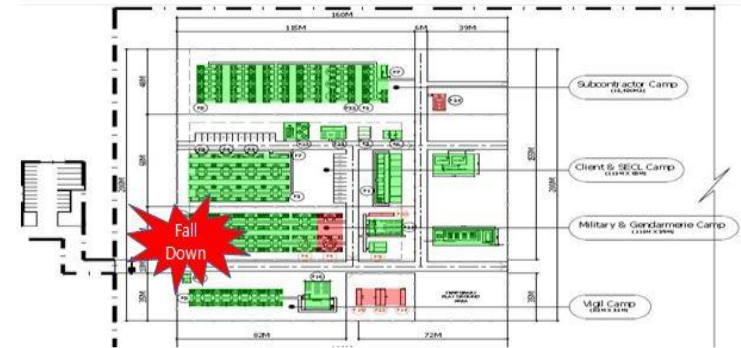
EMERGENCY RESPONSE TEAM



- **CONTRACTOR will conduct regular drills to verify the effectiveness of the emergency response plan and train personnel to execute emergency procedures.**
- **Evacuation drill with full muster of personnel will be conducted as early as practicable at Algeria TFD site including accommodation camps.**
- **Local medical drills (ambulance) addressing different type of medical urgencies will take place as a minimum twice a quarter.**
- **The frequency of site wide fire / emergency drills will be bi-annual, as well as drills will be scheduled whenever required at the critical or high risk areas at the project.**

17th Jan 2015 @ 08:00.a.m.

A watch man was going down from the watch tower after his surveillance duty, unexpectedly he fall down around 3 meter height from the ground due to his foot slip from the step at near the main gate in Pioneer camp.



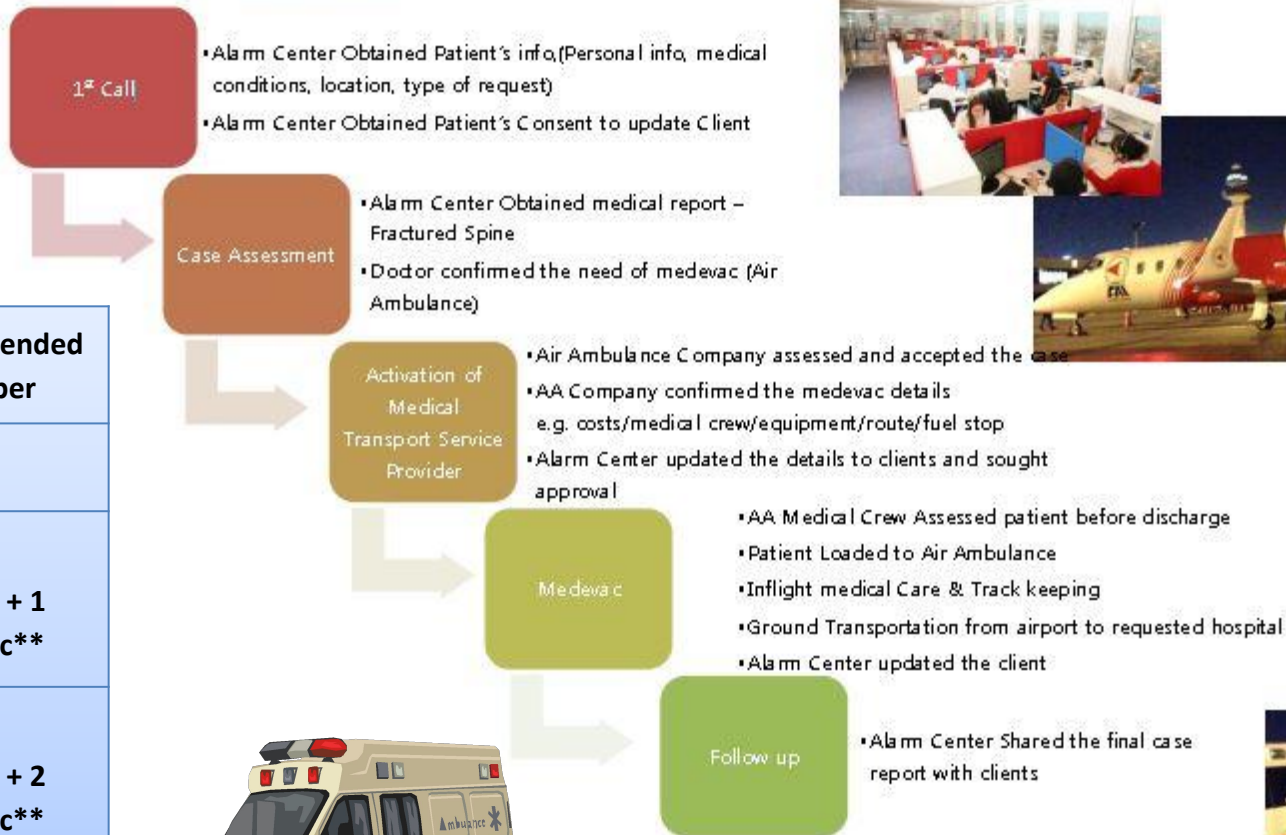
08:27

Ambulance Departure from SECL Clinic to Adrar Airport with victim assistance of Escort



23. MEDEVAC

Population to be supported	Recommended number
0 to 100	1 doctor*
100 to 1000	1 doctor* + 1 paramedic**
1000 to 2000	1 doctor* + 2 paramedic**
Above 2000	1 doctor* + 3 paramedic**



As a minimum the medical team will comply with following guideline:

Thank You!

شكرا جزيلًا

