



Lusail Real Estate Development Company

Health, Safety, Security, Environment, Logistics & Quality Department

Lusail Construction Safety Management Procedure – Motor Vehicles & Heavy Equipment

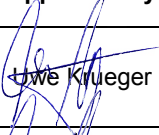
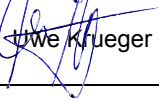
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COMPANY PROPRIETARY INFORMATION

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Amendment Record

This document is reviewed to ensure its continuing relevance to the systems and process that it describes. A record of contextual additions or omissions is given below:

Rev .No	Description / Comments	Prepared By	Checked By	Approved By	Issue Date
1	(Pg. 1) Company Propriety Information – Not controlled if printed has been added.	HSE Working Group	Michael Ford	 Uwe Krueger	1 st April 2015
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1. Description

This element of the LCSMP details Lusail Construction HSE requirements for mobile equipment, including heavy equipment, industrial trucks, and motor vehicles. This element applies to all Lusail personnel, Contractors, Developers, Consultants and subcontractors working on the Lusail projects.

This element does not cover fleet safety. This element does not include conveyors or cranes, which are covered in [LUS-HSE-WG3-446-026](#), Cranes, Hoists, and Lifts.

2. Definitions

Term	Description
Job Hazards Analysis (JHA)	A process used to identify hazards or potential hazards associated with each step of a particular job or work plan to uncover hazards and then eliminate, control, or remove them before work is started.
Licensing Authority	Refers to the Qatar Drivers Licensing Authority
Dump trucks	Haulage vehicles that include both belly and rear dump trucks with a minimum payload of four (4) yards.
Heavy Equipment	Mobile equipment used for or designed to move earth. Examples include crawler or wheel tractors, bulldozers, off-highway trucks, graders, loaders, agricultural and industrial tractors, and similar equipment. This definition does not include cranes or industrial trucks.
Industrial Trucks	Mobile equipment, other than heavy equipment, used to lift, carry and stack loads on the front of the vehicle. Examples include forklifts, stackers, motorized hand trucks, and similar equipment.
Mobile Equipment	Self-propelled vehicles that operate within an off-highway jobsite not open to public traffic.
Motor vehicles	Self-propelled vehicles including cars, trucks, vans, and motorized carts, used to transport employees.

3. Responsibilities

The Contractor is fully responsible for the pre-planning, development of Method Statements, Job Hazard Analysis, overall safe work planning and implementation. The Contractor's Project Management is responsible for the assurance that all work is planned and conducted according to the pre-planning document, Contractor and Lusail Health Safety & Environment (HSE) procedures and the Qatar Construction Specifications 2010. Should a conflict occur between procedures/standards or requirements the more stringent will apply.

4. Operator Requirements

While in the cab, operators are not permitted to possess or use any distracting equipment (e.g., CD players, cell phones, radios) except two-way radios.

Operators of equipment such as hoisting equipment and draglines, mobile construction equipment, electrical power systems, hydropower plants, industrial manufacturing systems, hydraulically operated equipment, powered vessels, and boats are not permitted to exceed 12 hours of duty time in any 24-hour period, including time worked at another occupation.

On-duty operators of motor vehicles will not operate vehicles for a continuous period of more than 10 hours in any 24-hour period; nor will any on-duty employee operate motor vehicles after being in a duty status for more than 12 hours during any 24-hour period.

All personnel operating vehicles or equipment shall have in their possession a valid Qatari Drivers Licenses identifying what vehicles and equipment the individual is authorized to operate.

All vehicles and equipment shall be registered and licensed in accordance with Qatar Law. If equipment or operators are found without the required licenses and/or registration the equipment/vehicle shall be taken out of service and a Payment Deductions will be applied as outlined in the contract HSE General Requirements.

5. General Requirements

Supervisors ensure that all employees are instructed in the recognition and avoidance of potential hazards associated with the job or work area as identified in JHA's.

Mobile equipment must be inspected, tested, and operated in strict conformance with the manufacturer's or engineer's specifications, ratings, limitations, and operation and maintenance requirements. Equipment operators must adhere to relevant federal and state requirements and specifications.

If information is not available from a manufacturer, it is developed and/or determined by a professional engineer qualified in the field.

No unsafe vehicles or equipment are allowed in construction areas. Equipment not in compliance must be reported immediately to the Project Manager or designee.

All loads must be safely rigged by a competent person. The load on every piece of mobile equipment must be properly distributed, chocked, tied down, or otherwise secured. Tools and material transported in the same compartment as personnel must be secured to prevent movement.

Unauthorized personnel are prohibited from riding in or on mobile equipment. No person is permitted to ride loads, blocks, buckets, hooks, or other devices attached to hoist lines, booms, or attachments of any crane or material hoist. No one is permitted to ride on a piece of mobile equipment (including the back of pickup trucks) unless a seat is designed for him.

Except for standup type operation, no operator or passenger is permitted ride on or in equipment unless he is seated with the installed seatbelt fastened. Seatbelt use is mandatory for the operator and all passengers when mobile equipment is in motion.

Access roadways or grades must be constructed and maintained to safely accommodate the movement of the equipment and vehicles involved. Every emergency access ramp and berm used by an employer must be constructed to restrain and control runaway vehicles.

Mobile equipment cannot be operated at speeds greater than are reasonable and safe considering weather conditions, traffic, road conditions, type and condition of equipment, etc. The operator must have the equipment under control at all times and must be able to stop within the clear sight distance.

At no time will mobile equipment be operated within 3m (10') of energized electrical transmission or distribution lines, in accordance with [LUS-HSE-WG3-446-024](#), Electrical.

Mobile equipment cannot be stopped, parked, or left standing on any road, ramp, accessway, or other location in such a manner as to endanger personnel or property. Units cannot be left unattended unless the motor has been shut off, brakes securely set, gears engaged, and all hydraulic- or cable-raised components lowered to a supporting surface or otherwise protected against accidental movement. If units parked on a hill or grade, their wheels must be chocked or turned into the curb.

Power must be off and all controls locked before an operator leaves the cab of a vehicle or piece of mobile equipment.

6. Specifications

(Attachment [LUS-HSE-FM4-446-051](#)) Mobile Equipment Specifications, lists the specifications and operating guidelines for motor vehicles, industrial trucks, dump trucks, and heavy equipment.

The safe working load, recommended operating speeds, special hazard warnings, and other essential information, as determined by the manufacturer or project engineer, must be indicated in or on all mobile equipment and must not be exceeded.

When visibility conditions warrant additional light, all vehicles in use must be equipped with at least two headlights and two taillights in operable condition and must have brake lights in operable condition regardless of light conditions.

Any person entering or exiting the cab or requiring access to other work locations on the equipment must be afforded sufficient steps and handholds and/or deck plates to allow the user to have at least three limbs in contact with the equipment at any time.

Motor vehicles used to transport employees must have seats firmly secured and adequate for the number of employees to be carried and must have functional seat belts and anchorages.

All vehicles with cabs must be equipped with windshields and powered wipers. Cracked and broken glass must be replaced. Vehicles operating in areas or under conditions that cause fogging or frosting of the windshields must be equipped with operable defogging or defrosting devices.

All mobile equipment must be equipped with a horn distinguishable from the surrounding noise level and an automatic backup alarm. The backup alarm must be functional whenever the equipment is working near foot traffic or congested equipment areas.

Operators of equipment that does not have an unobstructed view to the rear must look to the rear while operating the equipment in reverse. Any mobile equipment with an obstructed view to the rear cannot be used unless:

- The vehicle has a reverse signal alarm audible above the surrounding noise level, OR
- The vehicle is backed up only when an observer signals that it is safe to do so, in accordance with [LUS-HSE-WG3-446-016](#), Signs, Barricades, and Traffic Controls. The observer must:
 - Be in a direct line of sight or be able to communicate with the driver.
 - Be able to see the entire backing zone.
 - Continue to provide direction to the driver until:
 - The driver reaches the destination and stops; OR
 - Employees are no longer in the backing zone and it is reasonable to expect that no employee(s) will enter the backing zone.

All mobile equipment must have fire extinguishers in accordance with [LUS-HSE-WG3-446-012](#), Fire Protection.

As a minimum, trucks and combinations of vehicles operated on public roads and all buses, man haul vehicles, and vehicles carrying flammables, explosives, or hazardous materials must be equipped with the following emergency equipment:

- Flags and Reflectors: One red flag not less than twelve (12) inches square and three reflective markers to be used in event of emergency stops.
- Wheel Chocks: Two wheel chocks for each vehicle or each unit of a combination of vehicles.

All rubber-tired motor vehicle equipment must be equipped with fenders. Mud flaps may be used in lieu of fenders when motor vehicle equipment is not designed for fenders.

All on-highway types of equipment must have braking systems as follows:

- A bus, truck, truck-tractor, combination of vehicles, or similar type equipment must have braking systems (service, parking, emergency)
- Self-propelled and truck cranes and excavators mounted on rubber-tired chassis or frames and manufactured after July 1967 must be equipped with a service braking system, secondary stopping (brake) system, and parking brake system.

7. Barricades

In accordance with [LUS-HSE-WG3-446-016](#), Signs, Barricades, and Traffic Controls, the competent person erects barricades around heavy equipment work to prevent unauthorized entry.

A "ROAD CLOSED" sign means exactly what it says: the road is closed to all unauthorized traffic.

8. Accidents Involving Vehicles or Equipment

Vehicles and equipment involved in an incident on site must be reported to Lusail Construction HSE and an investigation to follow. Operators of vehicle(s) or equipment are responsible for reporting accidents to supervisors.

A vehicle or equipment involved in an accident cannot be used until it is inspected and approved for service by a qualified mechanic.

9. Inspection

9.1 Initial Inspection

Before mobile equipment is put into service at Lusail Development project, it must be performance inspected by a competent equipment operator or otherwise qualified personnel to ensure that it is in a safe condition and meets original design specifications. Non-conforming equipment is immediately removed from service until it is repaired and re-inspected. Equipment will NEVER be placed in use because it is urgently needed until it has been thoroughly inspected and the proper guards installed.

9.2 Daily Inspection

Equipment in service is inspected daily by a competent equipment operator or otherwise qualified personnel at the beginning of each shift. The inspected unit cannot be placed in service unless the following applicable equipment and accessories are in safe operating condition:

- Coupling devices
- Emergency brake
- Horn
- Operating controls
- Parking system (hand brake)
- Safety devices
- Seat belts
- Service brake
- Steering mechanism
- Tires
- Trailer brake connections

The superintendent maintains all inspection records and furnishes copies to the HSE Representative before such equipment is used.

10. Maintenance

When an unsafe condition is detected, remove equipment from service and tag it "OUT OF SERVICE." Do not place it back in service until it is repaired.

Unless operation is essential to making the adjustments or repairs, shut down equipment and render it inoperative while repairs or adjustments are being made.

The maintenance department establishes a preventive maintenance program based on the manufacturer's recommendations. Before starting adjustments and repairs, take the following precautions:

- Ensure that all controllers are in the "OFF" position.
- Ensure that the main or emergency switch is open, locked, and tagged in the open position.
- Correct any unsafe conditions disclosed by the inspection before resuming operation.
- Maintain adjustments to ensure correct functioning of the components.
- Any employee servicing split rims (or their equivalent) must be trained in the servicing techniques and the safety procedures necessary.
- Provide and use a safety tire rack, cage, or equivalent protection when inflating, mounting, or dismounting tires installed on split rims or rims equipped with locking rings or similar devices. Welding on, or heating of, rims is prohibited.
- Ensure that equipment (or parts thereof) suspended or held aloft by cables, hydraulic cylinders, slings, ropes, hoists, or jacks is blocked, cribbed, or lowered to a supporting surface before permitting employees to work in, under, or between them.
- Mechanics must adhere to rules set forth for equipment operations.

Correct all defects before placing the vehicle in service. These requirements also apply to equipment such as lights, reflectors, windshield wipers, defrosters, fire extinguishers, etc., where such equipment is necessary.

When service or maintenance is completed and the machine or equipment is ready to return to normal operating condition, take the following steps:

- Check the machine or equipment and the immediate area around the machine to ensure that nonessential items have been removed, and that the machine or equipment components are operationally intact.
- Check the work area to ensure that all employees have been safely positioned or removed from the area.
- Perform preoperational startup checks.

11. Training

Contractors shall train their employees in the requirements to be followed during operation of motor vehicles.

Supervisors are responsible for identifying additional employee training needs during risk mitigation planning (2-week look-ahead). Training can be organized and presented to groups or on a work area by work area basis, depending on the operation.

Only qualified, designated operators may operate off-highway equipment. Every newly hired operator described in this section must be individually checked out by an experienced operator or supervisor to determine if he is capable of operating the equipment safely. The operator must receive training to safely and properly operate any piece of equipment he must use during the course of work.

11.1 Industrial Truck Operator Certification

- Trainees may operate a powered industrial truck only in the following circumstances:
 - Under the direct supervision of persons who have the knowledge, training, and experience to train operators and evaluate their competence.
 - Where such operation does not endanger the trainee or other employees.
- All powered industrial truck operators must be trained and certified for the type of truck to be used. The safe forklift operation training and certification program must consist of four parts:
 - Training orientation: Before receiving certification to operate a forklift, operators must be trained in forklift inspection, operation, safety procedures, and site-specific requirements and hazards.
 - Written testing: Upon completion of operator training, each trainee is required to successfully pass a test.
 - Touch and tell inspection: Following the written test, each trainee must show the trainer, using touch and tell that he or she knows and understands the functional features of the unit requiring daily inspection. The touch and tell test indicates whether the trainee is familiar enough with the forklift to accurately inspect the unit. A forklift inspection must be completed at the beginning of each shift.
 - Performance testing: The trainee must exhibit acceptable performance of maneuvering skills, un-stacking skills, driving with a load, stacking skills, proper technique, and use of controls.
- Workplace-related topics:
 - Surface conditions where the vehicle will be operated
 - Composition of loads to be carried and load stability
 - Load manipulation, stacking, and un-stacking
 - Pedestrian traffic in areas where the vehicle will be operated
 - Narrow aisles and other restricted places where the vehicle will be operated
 - Hazardous (classified) locations where the vehicle will be operated
 - Ramps and other sloped surfaces that could affect the vehicle's stability
 - Closed environments and other areas where insufficient ventilation or poor vehicle maintenance could cause a buildup of carbon monoxide or diesel exhaust
 - Other unique or potentially hazardous environmental conditions in the workplace that could affect safe operation

11.2 Re-training

- Refresher training in relevant topics must be provided to the operator when:
 - The operator has been observed to operate the equipment in an unsafe manner
 - The operator has been involved in an accident or near-miss incident
 - The operator has received an evaluation that reveals that the operator is not operating the equipment safely
 - The operator is assigned to drive a different type of equipment
 - A condition in the workplace changes in a manner that could affect safe operation of the equipment
- Each industrial truck operator’s performance must be evaluated at least once every three (3) years.

Using an acceptable training form, the records custodian maintains a record of all training or instruction given to employees.

12. Documentation

The Contractor documents all instruction, training, and retraining records. Records verifying completion of training are to be kept for audit.

Every piece of equipment must have the following documents with it (in the cab) at all times it is to be operated:

- A copy of the operating manual developed by the manufacturer for the specific make and model
- A copy of the load-rating chart for the equipment in use (separate or included in the operating manual), which includes the following information:
 - Make, model, serial number, and year of manufacture
 - Load ratings for all operating configurations, including optional equipment

The Contractor maintains project records at the site for the duration of the project and archives them for a minimum retention time of 10 years from creation date.

All personnel operating vehicles or equipment shall have in their possession a valid Qatari Drivers Licenses identifying what vehicles and equipment the individual is authorized to operate.

All vehicles and equipment will be registered and licensed in accordance with Qatar Law.

13. References

Qatar Construction Specifications 2010 Section 11 Part 1.4.6 “Plant and Work Equipment”

Qatar Construction Specifications 2010 Section 11 Part 2.3.5 “Powered Work Equipment Procedure”

Qatar Construction Specifications 2010 Section 11 Part 2.3.10 “The Safe Use of Cranes & Other Lifting Appliances (Excavators, Tele Handlers And Lorry Loaders)”

ANSI/ITSDF B56.1-2012, Safety Standards for Powered Industrial Trucks

ASME B56.6-1992, Safety Standard for Rough Terrain Forklift Trucks (with Addenda)

14. Attachments

[LUS-HSE-FM4-446-051](#)

Mobile Equipment Specifications

[LUS-HSE-FM4-446-052](#)

Daily Equipment Safety Inspection Checklist