**Petroleum Development Oman LLC**

**2016 Q3 LTI Incident Analysis Study**

**MSE3**

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# Summary

The PDO’s Lost Time Injury Frequency (LTIF) performance for quarter three (Q3) of 2016 was 0.22, which was a good improvement for 2016 compared to LTIF of 0.33 at the end of Q3 in 2015. The company suffered 16 LTIs in the third quarter in 2016,7 more than in Q3 2015 despite the increased number of man-hours worked in 2016. This document provides analysis of incidents in Q3 2016 showing trends and points of statistical interest to target future resources.

# Key Observations

Following are the key observations from quarter 3 2016:

* Q3 showed a lower performance than the last year with 7 more LTIs, up 78% compared with Q3 in 2015.
* OSD and OND directorates have shown an increase in their incidents, whereas CPD, GD, UEOD and XD directorates all had a successful quarter with no LTIs.
* UID directorate takes the credit scoring zero incidents in comparison to 7 last year.
* UWD incurred 70% of the total LTIs occurred in PDO.
* The Increase in incident type relating to ‘MVI’ and ‘struck by an object’ by 100% for each.”
* There are six increases for the “Latent Failures” related to “Defenses” as the most followed by “Incompatible goals”, “Communications”, “Organization”, “Procedures” and “Training” accordingly. Therefore, extra care is needed to ensure we do not impose conditions on our staff where they are more likely to make errors.
* The job positions who had the most incidents is “Helper” (5 incidents) followed by “Roustabouts” (4 incidents) then “Engineer” and “Derrickman” (3 incidents each). This highlights the need to ensure adequate supervision is provided, that staff understand their roles and responsibilities, and that we ensure HSE Supervisor Leadership Training is up to date and effectively implemented.
* The majority of injuries were to Hands & Fingers (37%), followed by Ankle, Foot and Toe Injuries combined (27%). This highlights a lack of understanding of the risks associated with the “Line of Fire”.
* The time of incidents is related equally to “08:00am – 12:00pm” and “16:00pm – 20:00pm” by 27% each.
* Most of the incidents happened to people between the ages of “26 and 30”. This demonstrates the increased risk to younger, less experienced personnel who may lack maturity and are more likely to suffer from risk normalization.

# Analysis

# Directorate Analysis

# Directorate Breakdown YTD

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Directorate** | **Q3** | | | **YTD** | | |
| **2016** | **2015** | **% (-/+)** | **2016** | **2015** | **% (-/+)** |
| **UWD** | 11 | 5 | +100 | 23 | 26 | -12 |
| **OSD** | 3 | 1 | +100 | 6 | 2 | +100 |
| **OND** | 2 | 0 | -100 | 2 | 0 | -100 |
| **XD** | 0 | 0 | 0 | 0 | 1 | -100 |
| **UID** | 0 | 3 | -100 | 0 | 7 | -100 |
| **GD** | 0 | 0 | 0 | 0 | 0 | 0 |
| **UEOD** | 0 | 0 | 0 | 0 | 0 | 0 |
| **CPDM** | 0 | 0 | 0 | 2 | 2 | 0 |
| **Total** | **16** | **9** | **+78** | **33** | **38** | **-13** |

# PDO % LTI Profile by Directorate – YTD 2015/YTD 2016

# LTIs Per Operational Teams YTD

|  |  |
| --- | --- |
| UWD | **12**- UWO, **4-** UWL, **2-** UWB, **2**-UWC, **1**- OSPTW, **1-** UWN, **1**- UWOQ |
| OSD | **3**-OSE, **2**-OSO, **1** –OSC |
| CPDM | **1**- CGR, **1-** CRM |
| OND | **2**-ONE |

# PDO v Contractor YTD

|  |  |
| --- | --- |
| 31 | PDO contractors |
| 2 | PDO employee |

# Contractor information YTD:

There are 19 contractors who suffered LTI incidents YTD, in addition to PDO.  
The breakdown is as follows:

|  |  |
| --- | --- |
| 4 incidents | Dalma Energy. |
| 3 incidents | Bahwan Exel DHL, Weatherford. |
| 2 incidents | Abraj, ATE, PDO, MBPS, Schlumberger, WPAI |
| 1 incident | Ensign, Medco, SPC, Cactus, GPS, Al Nahdah, NDSC, Desert Byrne, WG-CCC, STST, Galfar |

# LTI Incidents Descriptions YTD

|  |
| --- |
| Crushed while loading a gas cylinder resulting in finger amputation. |
| Fall from height of 1.5 m resulting in fractured ankle. |
| Trapped by a mud pump liner resulting in tip finger amputation. |
| Fall from height of 1.5 m resulting in fractured ankle. |
| Fall from height of 1.3 m resulting in fractured forearm. |
| Struck by the pup joint resulting in fractured big toe. |
| Trapped by a wash gun machine resulting in fractured ring finger. |
| Fall and hit the water surface resulting in fractured nose. |
| Crushed by a falling flange resulting in fracture of the 4th toe. |
| Struck by a swung sun shade resulting in fractured wrist and pelvis. |
| Struck by a jerked truck resulting in dislocation of hip, fractured pelvis and wrist. |
| Motor vehicle incident (MVI) resulting in fatality. |
| Slipped inside a running machine resulting in multiple fractures for ankle and foot. |
| Slipped from last step resulting in fractured hip. |
| Slipped while loosening a nut resulting in fractured wrist and elbow. |
| Struck by a twisted sling rope resulting in fractured hand. |
| Motor vehicle incident resulting in fatality. |
| Crushed by rolling collars resulting in fractured ankle. |
| Trapped by a jaw handle resulting in fractured and partial amputation of the finger. |
| Struck by a losing rod from a forklift resulting in fractured leg. |
| Struck by a heavy welding machine resulting in fractured foot. |
| Slipped in a 0.5 m deep pit resulting in fractured ankle. |
| Trapped by the flair line resulting in fractured ankle. |
| Trapped by the floor cover resulting in fractured finger. |
| Struck by a tyre rims resulting in fatality. |
| Motor vehicle incident (MVI) resulting in fractured arm. |
| Trapped by a panel frame resulting in fractured thumb and finger. |
| Struck by a makeup tong resulting in fractured leg. |
| Trapped between bundles of gratings resulting in fractured thumb. |
| Struck by a piece of burning rubber resulting in injured face and eye. |
| Crushed by falling elevator resulting in fractured foot. |
| Struck by the ratchet resulting in fractured two wrists. |
| Struck by winch line resulting in face injury. |

# Incident Classification YTD

|  |  |  |  |
| --- | --- | --- | --- |
| **Type of Incident Causing LTI** | **No of LTIs**  **YTD 2016** | **No of LTIs**  **YTD 2015** | **% (+/-)** |
| **Crush/trapped** | 11 | 18 | **-39** |
| **Slip, trip, fall** | 4 | 7 | **-34** |
| **Struck by object** | 12 | 6 | **+100** |
| **Fall from height** | 3 | 3 | **0** |
| **MVI** | 3 | 1 | **+100** |
| **Chemical burns** | 0 | 2 | **-100** |
| **Electrical burns** | 0 | 1 | **-100** |
| **Total** | **33** | **38** | **-13** |

# Actual Severity YTD

|  |  |  |  |
| --- | --- | --- | --- |
| Severity | | YTD  2016 | YTD  2015 |
| a. | Severity 2 (minor injury) | 0 | 0 |
| b. | Severity 3 (major injury) | 30 | 37 |
| c. | Severity 4 (fatality) | 3 | 1 |

# Potential Severity YTD

|  |  |  |  |
| --- | --- | --- | --- |
| Potential Severity | | YTD  2016 | YTD  2015 |
| B3 | Major injury, heard of in the industry | 1 | 0 |
| C3 | Major injury, has happened in the company | 29 | 37 |
| C4 | Fatal injury, has happened in the company | 3 | 1 |
| D2 | Minor injury, has happened more than once a year in the company | 0 | 0 |
| D3 | Major injury, has happened more than once a year in the company | 0 | 0 |
| D4 | PTD or up to 3 fatality, has happened more than once in the industry | 0 | 0 |
|  | **Total** | **33** | **38** |

# Basic Risk Factors (BRF's) YTD

# Comparison Table of The BRF Q3 2015 – Q3 2016

|  |  |  |  |
| --- | --- | --- | --- |
| **BRF** | **YTD 2016** | **YTD 2015** | **% (+/-)** |
| Design | 7 | 14 | -50 |
| Hardware | 4 | 15 | -73 |
| Maintenance | 1 | 11 | -90 |
| Housekeeping | 0 | 20 | -100 |
| Error enforcing conditions | 8 | 12 | -33 |
| Procedure | 22 | 12 | +83 |
| Training | 10 | 7 | +43 |
| Communication | 17 | 4 | +100 |
| Incompatible goals | 12 | 2 | +100 |
| Organization | 10 | 3 | +100 |
| Defences | 10 | 0 | +100 |

# Comparison Graph of The BRF

# Job Positions YTD

|  |  |
| --- | --- |
| Helper | 5 |
| Roustabout | 4 |
| Engineer | 3 |
| Floorman | 3 |
| Derrickman | 2 |
| Driver | 2 |
| Electrician | 2 |
| Supervisor | 2 |
| Manager | 2 |
| welder | 1 |
| Fabricator | 1 |
| Forklift Oper | 1 |
| Toolpusher | 1 |
| Grinder | 1 |
| Mechanic | 1 |
| Driller | 1 |
| Rigger | 1 |

# Parts of Body Injured YTD

|  |  |
| --- | --- |
| Wrist/hands/fingers/thumb | 12 |
| Ankle/foot/toe | 9 |
| Elbow/arm | 4 |
| Eyes/face/nose | 3 |
| pelvis | 2 |
| body | 2 |
| Head/neck | 1 |

# Time of Incidents YTD

|  |  |
| --- | --- |
| 00:00-04:00 | 2 |
| 04:00 -08:00 | 6 |
| 08:00 -12:00 | 9 |
| 12:00 - 16:00 | 5 |
| 16:00 - 20:00 | 9 |
| 20:00 - 00:00 | 2 |

# Age of Injured Person (IP) YTD

|  |  |
| --- | --- |
| 20-25 | 5 |
| 26-30 | 9 |
| 31-35 | 4 |
| 36-40 | 6 |
| 41-45 | 1 |
| 46-50 | 3 |
| 51-60 | 4 |
| >60 | 1 |

# End of Analysis