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| **P&E Description & Location/s Used:** | TEC Cable Pneumatic Spooling Unit - Asset Tag #03/#04/05 | **Assessment No**: | **20180417** | **Rev:** | 1.0 |
| **Date:** | 17-May-2018 | | |
| **References used for this assessment:**  *(Inc. Legal obligations)* | * WHS Act & Regulation 2011 * Managing the risk of Plant Code of Practice 2013 * Transport Operations (Road Use Management – Vehicle Standards & Safety) Regulation 2010 * Generic Site Layout | **Assessment Team**: | J. Hollingworth, G.Humphreys | | |
| **Company / Dept.:** | Kinetic / Huracan / KWIS | | |
| **Frequency of Activity**: | Daily | | |
| **Persons Affected:** | Gauge Installation Crew | | |

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| **RELEVANT LEGISLATION / STANDARDS & PLANT DOCUMENTATION** | | **COMMENTS** |
| Is plant required to be registered? | Y  N | HUR-TSU-03 |
| Is a user license required? | Y  N |  |
| Are operator’s manuals accessible? | Y  N | Available online and with equipment |
| Is this a restricted use item? | Y  N |  |
| Does this item require safe use documents/test? | Y  N |  |
| Does this item require a Plant Maintenance Book? | Y  N |  |
| Is this item subject to prescribed obligations in relation to weight? | Y  N | (Weight of P&E is 1800kg) |

| **Hazards Inspected** | | **Risk Description** | **Risk Score** | **Control Measures** | **Person to Apply** | **Person to Monitor** | **Residual Risk** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **ENTANGLEMENT**  Can anyone’s hair, clothing, gloves, cleaning brushes, tools, rags or other materials become entangled with moving parts of the plant or materials? | Y  N | * Serious injury can occur if entanglement occurs in chain / sprocket | **Low (C3)** | * Guards placed so that no access is available to chain / sprocket and air motor during operation. | Maintenance personnel to install guards. | Plant operator to ensure guards are installed prior to use | **Low (E1)** |
| **IMPACT AND CUTTING INJURIES -** Can anyone be crushed / cut / struck etc. due to: | | | | | | | |
| Material falling off the plant? | Y  N |  |  |  |  |  |  |
| Uncontrolled / unexpected movement of plant/load? | Y  N | * Injury to person | **Low (D2)** | * No personnel in area while cable is being run in hole. Exclusion area around spooler with authorised access only. | Plant operator | Plant operator | **Neg (E2)** |
| Lack of capacity to slow, stop or immobilize plant? | Y  N | * Injury to person while under rig control |  | * No personnel in area while cable is being run in hole. Exclusion area around spooler with authorised access only. |  |  |  |
| The plant tipping or rolling over? | Y  N |  |  |  |  |  |  |
| Parts of the plant disintegrating or collapsing? | Y  N |  |  |  |  |  |  |
| Contact with moving parts during testing, inspection, operation, maintenance, cleaning or repair? | Y  N | * Injury to person from loose items. | **Med (B2)** | * Ensure guards are installed prior to testing of unit. * Competent maintenance personnel only. * No loose items of clothing while maintaining Chain / Sprocket or air motor. | Maintenance personnel | Maintenance personnel / Operator to ensure guards are in place | **Neg (E1)** |
| Being thrown off / under the plant? | Y  N |  |  |  |  |  |  |
| Contact with sharp or flying objects? (e.g. work pieces being ejected) | Y  N |  |  |  |  |  |  |
| The mobility of the plant? | Y  N |  |  |  |  |  |  |
| Inappropriate parts and accessories being used? | Y  N |  |  |  |  |  |  |
| Other | Y  N |  |  |  |  |  |  |
| **SHEARING**  Can anyone’s body parts be sheared between two parts of plant, or between a part of the plant and a work piece or structure? | Y  N | * Serious injury to personnel operating equipment | **Med (C3)** | * Guards installed to cover drum access. * Guard installed over chain and sprocket * Competent personnel operating machinery | Maintenance Personnel | Operating | **Neg (E2)** |
| **PRESSURISED CONTENT**  Can anyone come into contact with fluids or gases under high pressure, due to plant failure or misuse of the plant? | Y  N |  |  |  |  |  |  |
| **ELECTRICITY** - Can anyone be injured or burnt due to: | | | | | | | |
| Live electrical conductors? *(e.g. exposed wires)* | Y  N |  |  |  |  |  |  |
| Working in close proximity to electrical conductors? | Y  N |  |  |  |  |  |  |
| Access to electricity? | Y  N |  |  |  |  |  |  |
| Damaged or poorly maintained electrical leads, cables or switches? | Y  N |  |  |  |  |  |  |
| Water near electrical equipment? | Y  N |  |  |  |  |  |  |
| Lack of isolation procedures? | Y  N |  |  |  |  |  |  |
| Other | Y  N |  |  |  |  |  |  |
| **ERGONOMICS -** Can anyone be injured due to: | | | | | | | |
| Poorly designed workstation? | Y  N |  |  |  |  |  |  |
| Repetitive body movement? | Y  N |  |  |  |  |  |  |
| Constrained body posture or the need for excessive effort? | Y  N |  |  |  |  |  |  |
| Design deficiency causing psychological stress? | Y  N |  |  |  |  |  |  |
| Inadequate or poorly placed lighting? | Y  N |  |  |  |  |  |  |
| Does the plant impact on the surrounding workplace and create potential hazards? (Consider safe access and egress from plant, workflow and design of the workplace) | Y  N | * Injury to personnel from TEC cable breaking while under tension. | **Low (C2)** | * Exclusion zone between the unit and the rig during installation * Unit self-spools when rig trips pipe in hole * Limited tension due to pneumatic system | Operator | Operator | **Neg (E2)** |
| Is the location of the plant inappropriate? (Consider potential affects due to environmental conditions and terrain) | Y  N |  |  |  |  |  |  |
| Other | Y  N |  |  |  |  |  |  |
| **RADIATION**  Can anyone using the plant, or in the vicinity of the Plant suffer injury or illness due to exposure to radiation in the form of any of the following:   * infra-red radiation * ultra violet light * microwaves | Y  N |  |  |  |  |  |  |
| **NOISE**  Can anyone using the plant, or in the vicinity of the plant, suffer injury due to exposure to noise? | Y  N |  |  |  |  |  |  |
| **VIBRATION**  Can anyone be injured or suffer ill-health from exposure to vibration? | Y  N |  |  |  |  |  |  |
| **FRICTION**  Can anyone be burnt due to contact with moving parts, materials or surfaces of the plant? | Y  N |  |  |  |  |  |  |
| **SUFFOCATION**  Can anyone be suffocated due to lack of oxygen, or atmospheric contamination? | Y  N |  |  |  |  |  |  |
| **CONDITION**  Is a hazard likely due to the age and condition of the plant? (*Consider how hard the machine has been worked, and whether it is used constantly or rarely).* | Y  N |  |  |  |  |  |  |
| Can anyone be injured as a result of the plant not serviced appropriately and / or maintained in line with manufacturer’s recommendations? | Y  N |  |  |  |  |  |  |
| **SLIPS / TRIPS / FALLS -** Can anyone using the plant, or in the vicinity of the plant, slip, trip or fall due to: | | | | | | | |
| Uneven, slippery or steep work surfaces? | Y  N | * Injury (slips / falls) adverse terrain on lease as equipment is operated from the ground | **Med (A1)** | * Spot spooler on level ground and perform hazard ID around spooling area for trip hazards | Operator | Operator | **Neg (D1)** |
| Poor housekeeping, e.g. spillage in the vicinity? | Y  N |  |  |  |  |  |  |
| Obstacles being placed in the vicinity of the plant? | Y  N |  |  |  |  |  |  |
| Inappropriate or poorly maintained floor or walking surfaces (i.e. lack of a slip-resistant surface, unprotected holes, penetrations or gaps?) | Y  N |  |  |  |  |  |  |
| Use of work platforms, stairs or ladders? | Y  N |  |  |  |  |  |  |
| Lack of guardrails or other suitable edge protection? | Y  N |  |  |  |  |  |  |
| Other | Y  N |  |  |  |  |  |  |
| **FIRE AND EXPLOSION**  Can anyone be injured by fire? | Y  N |  |  |  |  |  |  |
| Can anyone be injured by explosion of gases, vapours, liquids, dusts, or other substances? | Y  N |  |  |  |  |  |  |
| **TEMPERATURE / MOISTURE**  Can anyone come into contact with objects athigh or low temperatures? | Y  N |  |  |  |  |  |  |
| Can anyone suffer ill-health due to exposure to high or low temperatures? | Y  N |  |  |  |  |  |  |
| Can anyone be injured or suffer ill-health due to exposure to moisture? | Y  N |  |  |  |  |  |  |
| **OTHER -** Can anyone be injured or suffer ill-health from exposure to: | | | | | | | |
| Chemicals? | Y  N |  |  |  |  |  |  |
| Toxic gases or vapours? | Y  N |  |  |  |  |  |  |
| Fumes / Dusts? | Y  N |  |  |  |  |  |  |
| Other? (please specify) | Y  N |  |  |  |  |  |  |
| **HUMAN MACHINE INTERFACE (HMI)** – Can anyone be injured from: | | | | | | | |
| Can the equipment perform a cycle of movement with one touch button? | Y  N |  |  | *Shut-down method of inadvertent operation:* |  |  |  |
| Is there any opportunity for the joy stick / lever to fail “on”? | Y  N | * Damage to cable from back spooling | **Low (B1)** | *Shut-down method after joy stick/lever failure: Remove air from unit* | Operator | Operator | **Neg (D1)** |
| Operator of the equipment has full view of equipment movement? | Y  N |  |  | *If not, demonstrate exclusion zone integrity prior to movement: Area around spooling unit is exclusion zone, area between the rig and equipment is exclusion zone* |  |  |  |
| Are exclusion zones required? | Y  N | * Injury to personnel from TEC cable breaking while under tension. | **Low (C2)** | *How are exclusion zones implemented?*   * *Crew to set physical exclusion zone between rig and spooler and around unit.*   *Can anyone be within exclusion zone without equipment isolated?*   * Operator allowed within exclusion zone to operate equipment, use remote panel while using. | Operator | Operator | **Neg (E2)** |
| Does this equipment require isolating i.e. for maintenance, shut-down etc. | Y  N | * Injury if entanglement occurs while guards are off during maintenance | **Med (C4)** | *How is equipment isolated?*   * *Airline removed from system to isolate from air motor* | Maintenance Personnel | Maintenance Personnel | **Neg (E2)** |
| If appropriate, is an ESD fitted? | Y  N |  |  | *Test ESD, is it clearly identified?* |  |  |  |

**NOTE:** Using the Risk Matrix below, identify the Consequence & Probability of each risk occurring and enter the risk score in the Inherent column. Review the consequence, probability and risk score after appropriate controls have been agreed upon. Remember, the consequence does not change unless you eliminate the hazard (only the probability may change!

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  | **Consequence** | | | | | | |
| **HEALTH AND SAFETY** | First Aid Injury (FAI) | Medical Treatment (MTI) | | Lost time Injury (LTI) | Permanent Disability / Fatality | | Fatalities (multiple) |
| **FINANCIAL IMPACT** | < $20K | $20K - $200K | | $200K - $2M | $2M - $20M | | $20M+ |
| **REPUTATION** | Minimal impact on business reputation, land holder only | Some impact on business reputation, local community exposure | | Moderate impact on business reputation, local media exposure | Significant impact on business reputation, national media exposure | | Critical impact on reputation, international media exposure |
| **ENVIRO.** | Incident. No breach of regulations / EA. Minimal and short term impact to any local environment. | Minor breach of regulations / EA resulting in notification to regulator.  Localised, short term, recoverable minor impact on flora and fauna | | Serious breach of regulations / EA resulting in reporting to regulator, investigation, environment notice or fines. Significant localised but short term environmental impact | Major breach of legislation resulting in prosecution or litigation and regulatory intervention.  Serious and long term ecological impact and environmental harm.  Emergency Management activated. | | Significant compliance breach resulting in prosecution / class action or loss of licence. Severe environmental harm with widespread or permanent Impact Crisis Management activated. |
|  |  |  | **1. Insignificant** | **2. Minor** | | **3. Moderate** | **4. Major** | | **5. Catastrophic** |
| **Likelihood** | A common event that is likely to occur in the industry many times per year | **A. Highly Likely** | **Medium  (A1)** | **Medium  (A2)** | | **High  (A3)** | **Extreme  (A4)** | | **Extreme  (A5)** |
| An event likely to occur more than once a year in the industry | **B. Likely** | **Low  (B1)** | **Medium  (B2)** | | **Medium  (B3)** | **High  (B4)** | | **Extreme  (B5)** |
| An event that may occur in the industry over 10 years | **C. Possible** | **Low  (C1)** | **Low  (C2)** | | **Medium  (C3)** | **Medium  (C4)** | | **High  (C5)** |
| An event not likely to occur in the industry over 10 years | **D. Unlikely** | **Negligible  (D1)** | **Low  (D2)** | | **Low  (D3)** | **Medium  (D4)** | | **Medium  (D5)** |
| An event that has not previously been experienced in the industry but may occur in exceptional circumstances | **E. Remote** | **Negligible  (E1)** | **Negligible  (E2)** | | **Low  (E3)** | **Low  (E4)** | | **Medium  (E5)** |
|  |  | | | | | | | | |
|  | **Hierarchy of Controls** | | **Level 1 – Eliminate the Hazard** | | **Level 2 – Substitute, Isolate & Engineer** | | | **Level 3 - Admin & PPE Controls** | |
|  |  | | | | | | | | |
|  | **Reporting Requirements** | | **Report Only – All Negligible Classifications** | | **Investigate – All Low to Medium** | | | **TapRoot – High or above, or any Hi-Po** | |