**Unit IG2: Risk assessment**

**Declaration:** By submitting this assessment (Parts 1 – 4) for marking I declare that it is entirely my own work. I understand that falsely claiming that the work is my own is malpractice and can lead to NEBOSH imposing severe penalties (see the NEBOSH Malpractice Policy for further information).

**Important note:** You must refer to the document ‘Unit IG2: risk assessment – Guidance and information for learners and Learning Partners’ while completing all parts of this assessment. Your Learning Partner should provide you with a copy, but it can also be downloaded from the relevant resources section for this qualification on the NEBOSH website.

**Part 1: Background**

**You should aim to complete this section in 150 - 200 words.**

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| **Topic** | **Comments** |
| Name of organisation\* | Su-energy E&P (Exploration & Production) Ltd also Known as SUE Ltd |
| Site location\* | Hadida Oilfield - western Sudan |
| Number of workers | 26 |
| General description of the organisation  | Su-Energy is an operating company involved in the exploration , development, production, andTransportation of oil and gas in western Sudan. It is shareholders company and consists of the Upstream facilities (production operation facilities, maintenance section) and head office that located in Khartoum city where board of directors and the various department facilitate and support the ongoing production operation, hadida Oilfield is one of five field process facility (FPF) owned by Su-energy and it is my work place and will be the focus area.Hadida is field process facility (FPF) has twenty oil production well, three of them are natural production and the other is produced by pumps, these wells are gathered in a main assembly line, then the stages of treatment operations take place, which contain the following equipment (crude oil receiving area, production separator, heater treater, gas scrubber, storage tanks system, transfer pumps, knockout drum, instrument/utility air, flare system and many ground water wells, which are used in production operation and to serve the local communities .The operation and maintenance activities in hadida (FPF) take place to work on start-up and shutdown the previously mentioned production equipment, and perform periodic check to keep it under monitoring and permanent control as well as to discovering and maintaining technical problems and malfunctions, and preserving the efficiency and continuity of production equipment, as well as the quality of production itself. Hadida oilfield works for 24 hours day and night shift for operation staff and security guard and only day shift for maintenance and workers employees. |
| Description of the area to be included in the risk assessment | The risk assessment will cover hadida oilfield (production equipment and offices). |
| Any other relevant information | The company nominated the operation and health & safety supervisors to be direct health and safety officials. |

 \* If you’re worried about confidentiality, you can invent a false name and location for your organisation but, all other information provided must be factual.

**You should aim to complete this section in 100 - 200 words.**

Note: this section can be completed after you have competed your risk assessment.

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| Outline how the risk assessment was carried out this should include:* sources of information consulted;
* who you spoke to; and
* how you identified:

- the hazards;- what is already being done; and - any additional controls/actions that may be required. | I searched at the beginning to find that the international labor organization (ILO) has a lot of Code of Practice related to the practice of oil and gas industry, and I found many resources of information such as safety and health in the construction of fixed offshore installations in the petroleum industry. <https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/normativeinstrument/wcms_107850.pdf> After that, I took a tour of the workplace and wrote a set of notes, then I moved on to talking with the workers while they were doing their work. Talking to the workers was very useful and it helped me a lot in knowing the existing hazard and ways to control them, in addition to the extent of the effectiveness of these control measure, and find out also the additional control measures required. I reached these results by matching my conversations with the workers and my observations of the workplace.Then I went to take permission from the operation supervisor to view the previous incident reports, risk assessment, annual external and internal audit, and the results of the safety inspection. Also I have examine the standard operation procedure implementation and safe system of work as well as the absence and sick reports. |

**Part 2: Risk Assessment**

Organisation name:

Date of assessment:

Scope of risk assessment:

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| **Hazard category and hazard** | **Who might be harmed and how?** | **What are you already doing?** | **What further controls/actions are required?** | **Timescales for further actions to be completed****(within …)** | **Responsible person’s job title** |
| Noise  Power generators  transfer pumps   Both of them generate noise. | Operators, maintenance staff, labour and contractor all of them are exposed to levels of noise to varying degrees when performing their work, which may exceed the standard level.Especially power plant operator those who have the tasks of routine inspection and monitoring of power generators as a basic task, they are exposed to noise that exceeds the standard level, which exposes them to Noise – Induced Hearing Loss (NIHL). | providing ear protectors (muffs, plugs) to reduce the level of loud noise Instruction have been set out to limiting worker exposure when undertaking routine check. Established enclose house for power generators (power house). Conducted a monthly inspection for hearing protectors (ear muffs, plugs) and measuring of the noise level every three months by HSE supervisor. Place a safe distance between power generators and workers office to obtain an appropriate noise level. | Install of transmission line from nearby power that located in 100Km far awayAnd modify existing substation to receive the power from the transmission line, in order to eliminate the resulting noise from power generators.Establishing a control room for the monitor and taking parameters for power generators in order to reduce exposure to noise | 1 year6 months | Power system managerPower plant superintendent |
| FireFuel gas of heaters & gas scrubber) lead to outbreak of fire in the presence of (welding process, faulty electrical Equipment , overheating)Potential ignition source of combustible liquids and gas in crude oil storage tank.  | Operation, maintenance, contractors, labours, visitors. Any gas that escapes to atmospheric during the opening of the manual valve to drain the condensed liquid of gas scrubber in the open drain barrel in the presence of ignition source Or any gas leakage in the burner of the heaters. This will result in an explosion that will lead to death cases.In addition, fatal injuries may occur in the event of an explosion in the storage tanks and the spread of fire. | The storage tank area is fenced and separated from the other buildings.Perform of routinely inspection and tested of electrical equipment.  The hot work activates controlled by permit-to work, to work on making the necessary arrangements before starting the hot works.Performing the necessary housekeeping to ensure that there is no combustible material in the hot workplace.There is an assessment of fire risks and procedures for controlling them, and the presence of a safe system of work in place.Fire alarms have been installed In place, in addition to monthly check of fire extinguishers by the civil defence team.There are also roads for safe passage with private parking for vehicles and comprehensive plan for evacuation.There is adequate information, fire safety signs training, and fire drill for the staff in workplace to be more prepared when fires occur. | Establishing of firefighting system (fire storage tank, fire water pump house, network of pipes ending in hydrants or sprinklers) that covering all areas in the plant for optimum fire control equipment.Design close system for the drain of condensed liquid from gas scrubberTo avoid associated gas escapes to atmospheric. | 6 months2 weeks | Production managerMaintenance supervisor |
| Hazardous substancesFeeding the tank with the chemical substances (DCP-3) leads to spills.Various activities related to the injection of chemical (pumps maintenance, cleanliness, and adjust daily injection dose). | Labours & forklift driver who are feeding chemical into injection tanks. Operator when adjust daily injection dose. Maintenance staff when carry out maintenance job.All of them are exposed when they deal with the Demulsifier (DCP-3) substance in the following ways Cause inhalation (Respiratory tract irritation).Cause contact with eyes (irritation, blurring of vision, inflammation photophobia).Cause Contact skin (skin sensitisation, skin corrosion or irritation). | Chemicals substance are dealt with according to the safe methods described in the material safety data sheets (MSDS) and the staff has been trained on that.The necessary precaution have been put in place, such as fire protection (anti-explode equipment, fire extinguishers). Adequate PPE such as (chemical resistant clothing, chemical safety goggles, respiratory protective, rubber Anti chemic gloves, anti-static work clothes).Also a shadow has been constructed for chemical substances to be store in suitable ventilation, and temperature that less than the flash temperature.An emergencies shower and water basin for washing also were set up. | Utilization of diaphragm pump drive by air to feed the chemical tank, Instead of forklift that currently using to lift and empty the chemical drums. To prevent spillage of chemicals. | 2 months | Operation Supervisor |
| Electricity Electrical cables for devices and equipment.Work near electrical transformers, ground power cables. And transmission lines.Damaged power sockets.Malfunction of electric motors that operate various equipment. | Everyone is at risk of electric shock and fire injuries or death through dealing with an unsafe source of electricity, including workers, visitor’s even resident people near the field.  | There is a system of preventive manintenance of devices and equipment and periodic inspection of cables and connectors to control the dangers resulting from electricity.There is also earthed system in place to protect people and equipment from direct current in case of an electrical fault.There is a safe system of work applied before starting work and an emergency plan in the event of electrical accident.There are qualified workers who use suitable tools, spare parts and standard wires in case of electrical faults.Permit to work along with insulation and excavations certificates are applied with presence of fire extingushers in the workplace, and other preventive measures such as making barriers for electricity poles and warning signs in places of electrical hazards. |  No additional action has been taken yet | N/A | N/A |
| Radiation radioactive work to evaluate the welding points quality of the constructed flow lines . | Operators during the work, contractors who perform the work, visitors and local people within the range of hazard radiation.All of these are exposed to the danger of gamma ray through welding points or its spread, which has a acute or chronic effect . | A nnouncing the working hour at least one day before the working time to ensure that unauthorized persons are not present.Choosing the working hour to be at break time to reduce the number of employee those exposed to radiation.Work place ventilationIncrease the distance from the radiation source to reduce the radiation receive.Use a shield made of lead to cotain radiation particlesPlaced warning signs in the radiation area to avoid public entry. |  Dosemeter required for the purpose of health surveillance.Training and educating workers in radiation protection courses. | three weeksone months | production manageroperation supervisor |
| Working at high(above storage tanks)Due to maintenance purposesOr due to visual check for tanks level.Also due to repeated adjustment of tanks oil outlet valves which located at 3.5 meter. | Operator when check the level manually, adjusting valves.Maintenance staff, contractors when doing maintenance job.Labours when perform their cleaning workIf one of above mentioned falls during work or  an object falling onto people above ,it leads to personal injuries such as fracturs,bruising, and neck or spinal injury which leading to permanent paralysis ,brain , or death according to the severity of the fall. | Well tanks design with fixed ladder including toe boards  and Guard rail. There is a system for periodic inspection.Housekeeping before and after work above tanks.Suitable PPE are available (safety harness,helmet)Only competant health and strong workers are allowed to work at hight.Prohibit to work alone. It is forbidden to work in rainy weather and strong winds.There is a plan for a safe system of work and applying of work at hight regulations. | Establishing of fixed platform with stepladder for manual valves adjustment operationUtilization of aerial truck to facilitate the maintenance works. | two weeks2 Months | Maintenance supervisorMaintenance manager. |
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**Part 3: Prioritise 3 actions with justification for the selection**

**Suggested word counts**

Moral, general legal and financial arguments for all actions: 300 to 350 words

**For EACH action:**

Specific legal arguments: 100 to 150 words

Likelihood AND severity: 75 to 150 words

How effective the action is likely to be in controlling the risk: 100 to 150 words

**Moral, general legal and financial arguments for ALL actions**

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| Moral, general legal and financial arguments |   |

**Justification for action 1**

|  |  |
| --- | --- |
| Action (Taken from column 4 of risk assessment) |  |
| Specific legal arguments |  |
| Consideration of likelihood AND severity* types of injury or ill health
* number of workers at risk
* how often the activity is carried out
* how widespread the risk is
 |  |
| How effective the action is likely to be in controlling the risk. This should include:* the intended impact of the action;
* justification for the timescale that you indicated in your risk assessment; and
* whether you think the action will fully control the risk
 |  |

**Justification for action 2**

|  |  |
| --- | --- |
| Action (Taken from column 4 of risk assessment) |  |
| Specific legal arguments |  |
| Consideration of likelihood AND severity* types of injury or ill health
* number of workers at risk
* how often the activity is carried out
* how widespread the risk is
 |  |
| How effective the action is likely to be in controlling the risk. This should include:* the intended impact of the action;
* justification for the timescale that you indicated in your risk assessment; and
* whether you think the action will fully control the risk
 |  |

**Justification for action 3**

|  |  |
| --- | --- |
| Action (Taken from column 4 of risk assessment) |  |
| Specific legal arguments |  |
| Consideration of likelihood AND severity* types of injury or ill health
* number of workers at risk
* how often the activity is carried out
* how widespread the risk is
 |  |
| How effective the action is likely to be in controlling the risk. This should include:* the intended impact of the action;
* justification for the timescale that you indicated in your risk assessment; and
* whether you think the action will fully control the risk
 |  |

**Part 4: Review, communicate and check**

**Suggested word counts for each section:**

* Planned review date or period and reasoning for this: **50 - 100 words**
* How the risk assessment findings will be communicated and who needs to know the information: **100 - 150 words**
* Follow up on the risk assessment: **100 - 150 words.**

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| Planned review date/period with  **reasoning** |  |
| How the risk assessment findings will be communicated **AND** who you need to tell |  |
| How you will follow up on the risk assessment to check that the actions have been carried out |  |