**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\* | Siemens Energy |
| Site location\* | Munich in Germany |
| Number of workers | 91,000 dedicated employees |
| General description of the organisation  | Siemens Energy is a large company located in Munich but with other branches in Hamburg and Erlangen. The company is known to offer different energy services such as power generation (gas turbines, steam turbines, generators, gas engines, and power plant solutions), power transmission, renewable energy, industrial applications, and compressor and expansion turbines, among other services. Additionally, the company is keen in offering various services to its customers, which include performance enhancement solutions, maintenance, repair, and parts solutions, and technical consultancy solutions, etc. |
| Description of the area to be included in the risk assessment | The risk assessment will cover various areas, which include environment, health and safety, compliance, financial, general operations, process safety etc. The organization does a lot of operations relating power generation and transmission, which is associated with many health risks caused by gas emission and fumes emanating from the machines during field operations.  |
| Any other relevant information | The project management, who directly reports to managing director of this organization is bestowed in ensuring that health and safety of employees and customers is enhanced.  |

 \* 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.
 | Based on the risk assessment undertaken in the organization, this was done by assessing the operations at the field level to identify if there were any risks posed to the employees in various areas such as power generation areas, expansion of turbines areas, as well as in the renewable energy sections.In the risk assessment, I found the Siemens Energy Website <https://www.siemensgamesa.com/-/media/siemensgamesa/downloads/en/investors-and-shareholders/corporate-governance/corporate-policies/general-risk-control-and-management-policy.pdf> having good resources that helped me to assess various risks associated with the organization’s operations. Apart from evaluating the resources provided above, I proceeded to the field where this company operates with many employees to obtain first-hand information as well as observing whether there are health hazards that may affect employees’ health, especially those on the field. I also got a privilege to discuss with the project manager about health hazards caused by the operations.I evaluated the reports on accidents that have occurred in the field and I noted that they were quite a number. Most of these accidents included agency workers felling from a blade platform, vehicle moving a wind turbine tower section overturning and hit an employee. Another accident that I came across that was reported is gas emission which affected a few people near the company location.In the further inspection noted that most of employees have been complaining about their health being put at risk. However, open further assessment, I noted that most of these employees who have been complaining, have been working without wearing dust and gas masks; thus putting their health at risk.Some of the controls being done by the organization include storage of approved gas containers, use of gasoline in ventilated areas, use of gas and face marks, and standby call centre to help those affected. Another control measure by the company is by ensuring that all the operations are in compliance with the regulatory requirements. |

**Part 2: Risk Assessment**

Organisation name: Siemens Energy Ltd

Date of assessment: 5th June 2020

Scope of risk assessment:

| **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** |
| --- | --- | --- | --- | --- | --- |
| Hazardous substance and fumes | All employees and customers who visit the company on daily basis. They might be harmed through inhaling or coming into contact with hazardous substances | Use of gas masks and dust masks though it is not put as a mandatory to wear them  | Setting up fume tunnels to ensure that no hazardous relating to fumes is emitted.  | 8 month | Field operational manage |
| Electrical hazardsPossible tampering and malfunctioning of electrical installation for the whole site and for the portable equipment | Employees using faulty equipment especially those on the ground. This may also affect equipment or gadgets plugged to the faulty sockets within the siteThe faulty and malfunctioned electrical equipment may cause electrical burns and shocks, which may lead to the deaths of the workers | Assessment of power lies and electrification to ensure safety and eliminate malfunctioning electrical equipment.Training of the workers on identifying faulty equipment, power lines and electrification.Using certified technicians to ensure no incidences of malfunctioning of electrical equipment | Regular checks of the power lines in all areas within the company especially those in the warehouses  | No specific time | Electrical Engineer |
| Gas turbines exhaust emissions  | Employees working on the field as well as customers.Gas turbines emits substances known as sulphur oxides which have negative health implications | Use of masks facemask to prevent inhaling of those dangerous and hazardous products | Use of gas turbine systems to reduce emissions that might affect people within the organization.Use of CHP systems in areas with gas turbines power plants | 4 months | Plan operator |
| Manual handing of parts – gas turbines systems, power lines, mechanical and electrical systems | Workers working within the organization especially where various power plants have been placed.This may harm workers by coming into contacts with the electrical and mechanical systems which might have excessive power. Those who are not experienced in handling these equipment may be at a great risk of being affected. | Documentations have been provided on ideal way of handling various equipment to understand how to handle them. | Ensuring that those managing different mechanical and electrical equipment are competent and experienced I handling this.Ensuring that all the equipment on the ground are safe to use | 2 months | Respective engineer |
| Hazard material handling including flammable materials e.g. combustible materials , toxic gas, hazardous chemicals, and hydrogen sulphide | Employees and people living within the nearby the organization. This may be harmful in the sense that employee | Following the regulatory considerations on hazardous chemicals and storage of compressed gases.Communicating of chemical hazards to employees under the laboratory standard (29 CFR 1910.450) and communication standard (29 CFR 1910.200)) | Use of proper control measures, which include elimination of hazard through engineering controls, administrative procedures, and use of personal protective equipment.Ensuring that employees are properly trained in accordance with the regulatory equipment  | 3 months | Project Manager |

**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 |  Siemens Energy company has a moral obligation to ensure the livelihood of all workers and customers who visit the site are protected in accordance to the legal requirements. Occurrence of accidents could greatly have an implication to the lives of the workers and their close relatives. Some of these accidents could have a long-term implication such as mental health issues, among others. Compliance is a top-management priority for this company, and that is the reason why Legal and Compliance Department falls directly under the purview of of Chief Executive Officer-Christian BranchRegarding the financial implications, Siemens Energy could find itself having to cater for the workers who have been injured or got severe accidents in line of their duties. Financial implications also extend to fee required to meet the legal requirements such as registration and any other legal fee. Additionally, company could be fine after being found liable by infringing the rights of their works or in case of being sued.Some of the actions that could be taken against Siemens Energy company could be revocation of its operational license and stopping all the company operations if found culpable of going against legal and regulatory requirements set aside by the relevant bodies. Such bodies are provided for by the law governing these legal matters.In some cases, legal and civil claims could take several years event after the employees have left the company. In such cases, the company may require to give compensation to such employees in addition to the legal fee as provided by the law. The whole legal process would find the company paying substantial amount of money as a form of compensation and legal fee. This is the reason why the company must put in place the right actions to ensure that no harm is experienced to employees to prevent any negative cost implications. |

**Justification for action 1**

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| Action | Establishment of hazardous and first aid control unit to ensure any harm that could affect employees at work are minimized. These control units are meant to ensure that proper inspection is done and safety of the workers maintained at all times |
| Specific legal arguments | New Compliance Control Framework (CCF) reflects the best implementation and testing practices. This framework spells out clearly about policies and procedures in various aspects such as business partners, tenders and contacts in project business, policies and training, case tracking, among others. Additionally, the existence of a Corporate Disciplinary Committee is keen on evaluating allegations of misconduct as well as legal aspects that are touching on employees and selecting appropriate ways of handing such issues. Sanctions that maybe imposed depending on the labour laws. Specific legal requirements are also concerned with making compliance a common standard the company. The new focus of compliance is based on assurance of sustainability of the compliance program. |
| Consideration of likelihood AND severity | The likelihood that most of the employees will be affected by emissions from the gas turbines, gas engines, among others. The severity of these emissions is extremely high and they may impact the livelihood of people living inside the site around or outside the site areas. The severity of hazards caused in the production process has a likelihood of affecting workers who are on the ground, bearing in mind not all who put on gas and dust masks, which can reduce such severity and likelihood of occurring. |
| 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.
 | In controlling various risks discussed, the control measures such as wearing of gas masks, use of protective equipment are meant to reduce the negative impacts that might be caused by emissions and fumes that occur during the production process. Other effective actions that are notable include ensuring trainings have been conducted to the employees on proper handling of the equipment especially those that pose great risks when handling them. A time scale of 3 months is ideal in ensuring that proper measures have been put in place to control the risks identified. Additionally, with distributed control system, hazards emanating from gas times and other mechanical and electrical products are reduced.The above action as highlighted in this case will fully control the risk since the use of distributed control system has proven to work efficiently in different industries. |

**Justification for action 2**

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| Action | Procurement of gas masks that are able to filter hazardous fumes coming from the factory |
| Specific legal arguments | It is a requirement for the company to protect its employees from any harm. With the procurement of gas masks, the company prevents any liability that may pose specific legal implications. At workplace environment, OSHA generally recommends that employers should provide masks to their employees. Additionally, employers are legally able to require employees wear masks when they are at workplace, to prevent any health issues that may arise to them in line of their duties. Failure of employers to comply with this legal requirement, they can be subjected to fine or other legal actions that may affect their business operations. |
| Consideration of likelihood AND severity | The likelihood of harm occurring as a result of not wearing masks by the workers while on field is very high. The implication of this is mostly on the heath of employees which can be severe in nature and can affect their respiratory systems. Wearing of gas masks and other personal protective equipment by employees is meant to reduce the risk effect to their health. This is because most of the machines in the factory emit hazardous substance that may cause severe health effects if consumed. |
| 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.
 | Wearing of gas masks and personal protective equipment has been proven to be effective especially in the companies producing gas and those in energy sector. By wearing gas and face masks, this will prevent workers from inhaling substances that are emitted in the production process by the employees.The timescale needed to put this into action is 10 days. This requires little arrangements and financial implications by the management team. This action will fully control the risk imposed by the gas emissions and fumes since this will prevent the inhalation of substances or other products emitted in the production process |

**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** | Based on the company policy and in line with the compliance requirements, risk assessments should be carried out after every 1 year. Hence, the next review date is set to be before 7th July 2021. Nevertheless, if there is an action document as y need to perform risk assessment review before the planned date, it will be communicated to the relevant personnel within the organization |
| How the risk assessment findings will be communicated **AND** who you need to tell | The risk findings will be documented through the risk register, and then be communicated to the project management team as well as relevant company offices for the appropriate measures to be taken. In this case, the person that I will need to inform when communicating about the risk assessment findings will be the project manager, who has been bestowed in risk management.Additionally, an urgent meeting will be planned with the project manager and finance department, informing them on the implications of the risk assessment undertaken, and what actions they need to undertake to control the risk. Such a meeting will be vital in communicating about the findings |
| How you will follow up on the risk assessment to check that the actions have been carried out | I will follow up with the project management on monthly basis, to give my recommendations based on the progress made by the company, this will ensure that no risk is carried forward to the next year of assessment. Additionally, I will be availing myself on the ground, to manually inspect the control measures especially those that re physical, to ensure right actions have been implemented by the relevant personnel to avoid further risks that might put the organization in problems, especially those relating to the legal and regulatory requirements. Finally, I will follow up through preparing an risk assessment questionnaire and interviewing the relevant personnel to review control measures put in place |