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.

Topic	Comments
Name of organisation*	**Amreli Steels Mill**
Site location*	**I 9/3 I-9, Islamabad Capital Territory, Pakistan**
Number of workers	**439**
General description of the organisation	**Amreli Steels Mill** is a large sized steel mill. **Amreli Steels Mill** started its journey in 1947 in a small town in Islamabad and has progressed in to one of biggest and reliable steel mills in Islamabad. **Amreli Steels Mill** provides versatile steel bars that can be customized to meet specific design of customer's choice to make complex buildings and houses. **Amreli Steels Mill** works include extracting raw material, melting iron, converting pig iron into steel, rolling and machining of steel bars. The products of **Amreli Steels Mill** are grade 40 and 60 steel bars ranging from 10mm to 32mm. This Steel mill also provides delivery of steel bars to customers using company trucks. **Shift pattern** **Amreli Steels Mill** operates from 7 am to 3pm and 3 pm to 11 pm in two shifts (Friday off) and 30 minutes break is given to workers in both shifts.
Description of the area to be included in the risk assessment	**This risk assessment covers areas of Amreli Steels Mill including production line, inspection area, blast furnace area, rolling mill area, storage area, coating area, quenching machine area. Production line** is the area where we use conveyor to move material from one point to other, raw material is transported on these conveyor. **Inspection area is the area where** quality of steel is tested using X-ray testing, using these X-rays

	the internal flaws of steel products can be identify. **Blast furnace area** is the area where raw material (traditional iron ore) is melted to make steel products. **Storage area** is the area where all the raw
	material is stored for a time being and then transported to other areas of mill and it has water storage tank where water was stored and use in quenching machine. **Rolling mill area** is the area where roller mill is placed and used to achieve the desired diameter of manufactured steel bars. **Coating area is the area where** electrical current is used to clean the steel surfaces and coating process of metal is done using electrical current in this area. **Quenching machine area** is the area where quenching machine is placed to cool the hot steel bars after hearing process.
Any other relevant information	NIL

* 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.

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 have completed this report using relevant information from NIBOSH IG2 website and I have also read ILO conventions and recommendation. I have used different websites to gain information about hazard categories which includes: https://www.oteplace.com/en/blog-top-10-hazards-in-steel-industry-that-workers-face-daily https://www.hse.gov.uk/noise/regulations.htm https://safety.admin.ox.ac.uk/manual-handling-control-measures#collapse1064921 https://www.hse.gov.uk/coshh/basics/control.htm https://www.haspod.com/blog/coshh/coshh-control-measures-types https://www.hsa.ie/eng/Vehicles_at_Work/Work_Related_Vehicle_Safety/How_to_Manage_Work_R I have also visited the **Amreli Steels Mill** and observe all the hazards of different areas that are covered in this risk assessment. I had meetings with different managers and supervisors of the mill in which we discussed different hazards of mill. For identifying hazards in the mill, I looked at all the accidents and near miss records and training records, absenteeism record and workers turn over record. Other websites that I have visited to gain information to make this risk assessment are: https://www.rndt.net/industrial-x-ray-testing-company/ https://www.powerbreezer.com/osha-announces-steps-to-protect-workers-from-heat/ https://www.osha.gov/confined-spaces https://www.hse.gov.uk/pubns/indg225.pdf My thorough examination of steel mill's Safe System of Work documents and personal site visit has given me insight about the control measures that have already been taken. Moreover, the Health and Safety

	Officer has also helped me in getting required information about existing control measures To propose further control measures, I took guidance from Nebosh RRC IG2 book. I also gathered related information from HSE UK website. YouTube videos regarding health and safety measures on steel mills have also helped me in suggesting further control measures. For legal references, I consulted some websites: https://jinbiao.com.sg/noise-barrier-singapore/noise-reduction-net/ https://aicraneliftingsolution.com/overhead-cranes/ladle/ https://www.solving.com/products/automated-guided-vehicles-agv-for-heavy-loads/ https://www.eastcarb.com/electric-arc-furnace/ https://www.raymondcorp.com/forklifts/electric-pallet-jack/8510-center-rider https://tsubaki-kabelschlepp.com/en-int/products/conveyor-systems/belt-conveyors/ https://www.airsystems-inc.com/products/mobile-fume-extractors/?srsltid=AfmBOoqr6MBB75vm8dmJPCzC5kO0R_9ljDwbck13jPID_wK_BhWoJiYn

Part 2: Risk Assessment

Organisation name: **Amreli Steels Mill**
Date of assessment: **08, March, 2025**
Scope of risk assessment: **This risk assessment covers areas of Amreli Steels Mill including production line, inspection area, blast furnace area, rolling mill area, storage area, coating area, quenching machine area.**

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 High level noise (100dBA) produced from rolling conveyor used for carrying raw metal from production line to blast furnace.	Maintenance Workers and Forklift Operators might get harm. Rolling conveyor produce high noise due to movement of heavy metal scarps on conveyor and the mechanical components of roller conveyor produced noise during movement from production line to blast furnace. Due to these high noise workers can get temporary hearing loss, Noise-Induced Insomnia, Reduced Concentration, Noise-Induced Cochlear Damage, fatigue, Chronic tinnitus, Hypertension, Cardiovascular Problems, temporary threshold	Scheduled maintenance of conveyor carried out to lubricate noise making components. Safe noise limits and exposure time reminded to workers in daily toolbox talks before start of work. Job rotation of workers in high noise area is carried out. Break room were designated so the workers can get rest and recover from high noise. Regularly training program was conducted to train workers about proper use of hearing protections. Feedback system created where worker can report any health issues related to hearing.	Eliminate the use of conveyor and use forklift to carry raw metal from production line to blast furnace. We can replace the existing conveyor with the gravity roller conveyor that produces less noise. Install noise reduction net on sides of noise making conveyor to reduce transmission of noise to other areas.	4 Weeks 1 month 1 week	Operations Manager Engineering Manager Maintenance Manager

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**

	shift(TTS), psychological stress, difficulty in communication, noise induced hearing loss (NIHL), tinnitus, And in long term effect permanent threshold shift (PTS).	Regularly noise monitoring carried out using decibel meter. Warning signs indicating noise hazards are placed in high noise area. Earmuffs are provided to workers working in the conveyor area.			
Radiation Exposure to Xrays range of 80 kVp to 300 kVp while testing internal flaws of steel products in inspection area.	Radiographic Inspectors and nearby workers might get harm. Quality of steel is tested using X-ray testing in the inspection area. Using these X-rays the internal defect of steel products can be identified. Radiographic inspectors are the workers who operate the X-ray machine and ensure that the test was carried out properly. Workers may get exposed to the x-rays while steel testing They will be exposed if they come in way of X-ray beam or line of fire	Radiation absorbing sheets are placed on walls of testing room in inspection area. Safe systems of work for steel testing in inspection area developed and conveyed to workers. Workers involved in operating xray machine go through proper training on radiation safety. Job Safety Analysis of steel testing activity carried out and developed procedures shared with workers in inspection area. Radiation monitoring carried out	Install automated x-ray machine (YXLON 3D X-ray Inspection System) so workers can operate machine from distance without exposing to radiation. Install 2.3 to 2.4 g/cm³ concrete shielding around X-ray machine to limit the radiation to be exposed. Enclose the machine with Radiation Protection X Ray Room Shielding and install automatic interlock system (Ray Interlock Device A1210CHS) so the radiations are only activated when the machine is enclosed.	1 month 2 Weeks 3 weeks	Operations Manager Operations Coordinator Lab In-Charge

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
	without sufficient protective material in both processes. Exposure to X-Rays will have several health effects for workers depending upon the duration and frequency of exposure and to concentration of rays. The health effects may include Skin Burns, Hair Loss, Radiation Sickness, Cataracts, fertility Problems, Acute radiation sickness, tissue effects, damage to bone collagen, platelets decrease, Leukaemia (blood cancer), Bone marrow failure, genetic mutation by damaging DNA cells.	using fixed and portable dosimeters in inspection area. Job rotation of workers in inspection area carried out that is more frequent then other places. Clear emergency procedures are already developed in case of radiation burst. Health Surveillance of workers carried out to spot health and safety effects of radiation exposure. Clear signage with radiation caution symbol posted to keep workers aware of radiations risks. Workers are provided lead apron and gloves to shield themselves from radiations.			

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Work-Related Upper Limb Disorder Repetitive movement of hands while adjusting roller position to maintain desire thickness of steel bars in rolling mill area.	Rolling mill operator, machine adjuster might be harm. Roller mill is used to achieve the desired diameter of manufactured steel bars. Steel bars are placed on roller mill then the workers manually adjust the crankshaft holder to obtain required output diameter on roller machine. While calibrating the roller mill machine the workers have to exert force in repetitive movement. Due to this repetitive movement of turning the crank for long time workers may face health and safety issues including muscle fatigue, mild tendonitis, reduced grip strength, bursitis, generalized aching, stiffness, Wrist sprain, cervical radiculopathy, spinal disorder, adhesive capsulitis, tingling in hands, joint pain, fatigue in	Proper training is provided to workers regarding proper posture and technique to apply during work. Breaks are scheduled for workers who handle crankshaft holder to rest their muscles and tendons. Reporting system developed for workers to report the early sign of pain or numbness before it gets serious. Workers with pre-existing MSDs are not detailed on duties involving repetitive task. Stretching program was introduced by administration for workers to do stretching before and during job of adjusting crankshaft holder. Warning signs indicating the hazards of repetitive movement of hands and arms pasted in rolling mill area. Ergonomically designed gloves are	Eliminate the crankshaft holder and use automated rolling mill (CR Rolling Mill) to obtain desire thickness of steel bar. Replace the manual crank with hydraulic system (Hydraulic Sizing Press) to control the diameter of bars. Implement Remote Roll Gap Control System to operate roller mill from distance.	2 months 3 weeks 1 month	Production Manager Production Manager Engineering Manager

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
	forearms, muscle imbalances, brachial plexus injury, carpal tunnel syndrome, tachycardia, permanent nerve damage.	provided to workers to support their wrist to reduce pressure of repetitive movement.			
Manual Handling Manually lifting and carrying heavy steel products of 40kg to 50kg in storage area.	Material handlers might be harm. Material handlers handle the inventory of storage area to keep material organised to ensure proper tracking of stock in which they have to manually move the raw material in storage area and workers move the raw material and semifinished products from storage area to production area using conveyor, they have to manually load the material on conveyor. Worker who deliver the raw material in the steel mill might get harm during unloading of material due to improper posture,	Training on properly lifting material was given to workers. Tool-box-talk was given to workers before starting any new task. Policies developed that ensure workloads are accordingly and appropriate for workers physical ability. Supervision and monitoring was always followed so no unsafe action was performed by workers. Signage was installed in the areas of manual handing to remind workers to use proper lifting techniques. No long shifts are allowed for manual handling and proper breaks are given to workers who	**Eliminate manual lifting with powerlifting by using ladle handling cranes-two Girder Overhead crane in mill to carry raw material.** Substitute heavy weight with lower weight packaging of 20kg to 30kg which is easier to handle. Use of Ride on Pallet Jacks to load the material on conveyor belt instead of manual loading.	**3 months** 3 days 1 week	Material Handling Manager Health and Safety Manager Material Handling Manager

	technique during manual handling. The effects of				

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	manual handling include muscle **Sprain** (injury to ligaments around a joint), **Strains** (a part of muscle can tear-off). **Foot injuries** (products can slip and fall on foot), **Neck injuries**, **awkward posture** (position of human body which deviates significantly from natural position, **Musculoskeletal disorders** (effects on muscles, nerves etc.). **Bulging discs** and **Hernia** (a sac formed by lining of abdominal cavity), **Lumber Strain**, **Herniated Discs** that can cause **Sciatica** (nerve compression between discs). Some of these issues could cause chronic pain and mobility issues to workers.	are manually handling material. Health surveillance of workers loading loads on conveyor belt carried out. Back Support Belts were provided to workers to support the lower back. Gloves are provided to worker to protect their hands from cuts due to Sharpe edges of metal.			
Load-Handling Equipment Entanglement with the moving parts of the	Production Line Workers, Material Handlers might get harm. Entanglement with moving parts of conveyor when	Lockout/Tag-out was used on roller conveyor if the maintenance is on-going to protect workers. Proper inspection and maintenance is conducted	Use Tsubaki enclosed belt conveyor so entanglement hazard can be eliminated. Automatic Shut-off Sensors (Photo electronic sensors) on conveyor must be installed on conveyor.	2 months 10 days	Engineering Manager Mechanical Engineer

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
roller conveyor while moving material from production line area to storage area.	workers are loading raw material into conveyor to move it from production line to storage area. Workers who are in close proximity of roller conveyor, can get in contact with the moving part of roller due to loose clothing, jewellery or unknowingly coming in nip point of roller belt. Due to this entanglement worker might get Light swelling around the area of impact, Surface-level cuts, minor pinch injuries, minor sprains , temporary numbness , dislocated joints, muscle strain from pulling free, fractures, deep cuts, serious injury of crushed limb or body parts, amputation of fingers, internal bleeding, severe traumatic brain injury.	regularly to ensure the emergency stop button works correctly. Proper training has been provided to workers on danger of working near roller conveyor. Signage is posted near the area of roller mill so worker get keep reminded about the danger. Emergency stop button is available in case of any emergency. Only authorize workers can work near roller conveyor. Tight-fitted cloths are provided to workers that work near roller conveyor. Gloves with strong grip are provided so workers maintain control when handling material near conveyor.	Designated Walkways should be provided to workers working near the conveyor system.	15 days	Production Supervisor

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 Substances Inhalation of toxic carbon monoxide (CO) produced during process of melting raw metal in blast furnace area.	Blast furnace operators, furnace maintenance workers might get harm. The fumes of Carbon Monoxide are produced in steel mill during high temperature process for making steel which include melting of raw material such as (iron ore) which release these fumes that are hazardous to health. Workers may inhale the fumes of Carbon Monoxide present in the atmosphere because they are directly involved in operating and monitoring of blast furnace and workers who are involved in maintenance of blast furnace may also get exposed to these fumes while testing and the other workers might get harm when they are working near the area of blast furnace. These workers have high	Air monitoring systems was installed in furnace area that measure the concentration of fumes. Comprehensive training was provided to workers about how to stay safe from inhalation of Carbon Monoxide. Clear SSOW established that have instructions on safe work actions for operating blast furnace without exposing hazardous CO. Access cards were provided by administration so no other worker get expose to these CO fumes. Emergency Alarm System installed that sounds when the Concentration of CO reaches permissible limits. Supervision of workers in the blast furnace area carried out by competent supervisor.	**<u>Use Direct arc furnace, which is electric and emits fewer harmful emission instead of blast furnace.</u>** Install portable fume extractor systems (Mobile Fume Extractor) that can help stop spreading fumes in the near areas. Canopy Fume Hoods should be installed over the workstation to catch the carbon monoxide.	**2 months** 1 month 1 month	Environmental Manager Health and Safety Manager Engineering Manager

	possibility of getting these health issues which include	Job rotation of workers in the blast furnace area carried out			

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
	mild irritation of the eyes, nose, and throat, headaches, fatigue and dizziness, nausea and vomiting, coughing, irritated skin, shortness of breath, hyperventilation, cough with mucus production, chest tightness, chronic obstructive pulmonary disease, lungs cancer, heart attack, chronic respiratory diseases(asthma), Cardiovascular damage (chronic fatigue, chest pain), fatality in extreme case if a worker gets in high concentration of these fumes because Carbon Monoxide inhalation could lead to Carbon Monoxide poisoning that could be fatal.	reducing the exposure to CO fumes. A Detailed first aider with complete first aid kit available in blast furnace area at all times. Warning signs indicating hazards of CO Pasted in different parts of blast furnace area. Respirators are used by worker working in or near blast furnace area. Safety goggles are provided so the worker kept safe from these fumes.			

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
Health, Welfare and Work Environment Exposure to Extremely high temperature while smelting raw material at the blast furnace area.	Blast furnace operators, furnace maintenance workers might get harm. While smelting the raw material in blast furnace to make the steel bars the temperature around the area is extremely hot and the workers who are working in this hot temperature to handle the smelting steel and workers who maintain the furnace have to face this hot temperature. The average temperature a worker is exposed on daily basis is up to 45°C in furnace area and this temperature is very hot. Working in this extremely hot temperature workers are at risk of heat rash, mild dehydration, skin burns, mild heat exhaustion, sweat-related fatigue, mild headache, heat stress, heat stroke, heat syncope. More	An environmental monitoring system was installed in the furnace area to monitor the temperature around. Training was provided to workers so they can recognize the heat effects early on and act accordingly. Regular health surveillance is conducted of workers working in the hot temperature. Rotational shifts are conducted so workers don't have to work in hot temperature for a long time. Welfare facilities including a cold room and frequent provision of electrolytic drinks are provided to workers. Emergency arrangements developed and conveyed to workers about what to do in case of emergency. Supervision of workers in blast furnace area carried out to ensure	Minimize the use of workers to work in highly heated area by automating furnace operation use robotic arms to operate furnace. Cooling system (power breezer evaporative cooling) should be installed in the furnace area to keep environment to permissible limits. Exhaust fans can be installed in the furnace area to ventilate the heat and to maintain indoor temperature cool. Use concrete shielding in the furnace area to reduce the direct heat transfer from the furnace to surrounding areas of the mill.	3 months 2 months 2 weeks 2 weeks	Production Manager Engineering Manager Engineering Manager Engineering Manager

	health effects include second-degree burns, heat				

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
	cramps, increased heart rate, second-degree burn, respiratory distress from hot gases, third-degree burns, permanent respiratory damage, death due to heat stroke.	safety protocols are followed. Flame-resistance clothing was provided to workers working in furnace to protect them from heat and flame exposure. Cooling vest is provided to workers to stay cool in the extreme hot temperature.			
Fire Flammable iron dust catching fire due to sparks produced while smelting iron in blast furnace area.	Blast furnace operator, maintenance workers might get harm. There is iron dust present in the blast furnace area and the iron dust is highly flammable. While smelting the raw material in blast furnace to make the steel bars the sparks are produced and flammable iron dust can catch fire if the dust particles come in contact with the ignited sparks. Due to flammability of iron dust there is a bigger risk of explosion and the fire	Hot work permit system is implemented for blast furnace operations. Job Safety Analysis of blast furnace operations carried out. Hazard awareness training was provided to workers to train them how to react in emergency. Fire alarms were installed in the area to alert all workers about fire. Class D Fire extinguishers were provided in the area to prevent emergency situation.	Use Hematite instead of traditional iron ore because it is non-flammable. Install Bag-house Dust Collectors to collect dust before it ignites fire. Use Wet scrubbers to catch iron dust particles from air. It passes contaminated air from wet scrubber liquid to clean air particles.	2 weeks 1 month 2 months	Production Manager Environmental Manager Environmental Manager

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

	could spread to other area. The ignited fire could cause several health and safety effects for workers including Bronchitis (due to smoke inhalation), Corneal Abrasions (superficial scratch on cornea). More severe effects include Rhinorrhea (runny nose), Hypoxia (oxygen deficiency in blood due to Carbon Monoxide inhalation), Respiratory Distress Syndrome (lungs swelling), Superficial Burns (affects outer layer of skin), PartialThickness Burns (affects dermis layer of skin), Sepsis (from infected burn wounds), MODS (multiple organ dysfunction syndrome) and Fourth Degree Burns (affecting muscles, tendons and bones). These issues can cause disabilities including nerve function impairments and could also lead to fatality due to excessive	Housekeeping was conducted regularly to minimize iron dust build-up. Clear signage was displayed to remind workers about fire hazard. Air Quality monitoring of blast furnace area carried out to assess the concentration of iron dust in atmosphere. A detailed fire watcher present at blast furnace area at all times. Flame resistant clothing and safety goggles were provided to workers to save them from burns.			

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
	burns causing whole body functions shutdown or from CO poisoning.				
Confined Spaces Lack of oxygen while cleaning out water storage tanks in storage area.	Tank cleaners, plumbers might get harm. Water is used in quenching process to cool steel after heating and water is stored in water storage tank, then quenching machine reuse the water from storage tank several times. During the process of cooling steel the layer of iron and other compounds shed and because of water reusability this oxide scale go into water tank so water tank need to be cleaned frequently to maintain the life of water tank and to ensure volume of water tank does not decreases. Workers have to go inside the water	Confined space entry and work permit has to be obtained for entering and working in confined space. Portable oxygen detector (SGT-P) was provided to workers to monitor oxygen level at all times. Every worker entering in water tank was provided training regarding safe working in confined space. Tool box talks provided to workers before entering the confined space. Only trained and physically fit workers are allowed working in the water tank. Emergency plans including the rescue plans and procedures	**Use Forced Air Venting System with integrated Oxygen Detector to supply oxygen to confined space when the O_2 drops to minimum limit** Provide Self Contained Breathing Apparatus to workers entering in water tank for cleaning. Provide two-way communication radios to workers entering in water tank for cleaning.	20 Days 1 week 1 week	Production Manager Health and Safety Officer Storage Area Supervisor

	tank, which is a confined space, may face				

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	oxygen deficiency. Oxygen deficiency might lead to health consequences including fatigue, dehydration, headache, nausea, dizziness, coughing, muscle strain due to work in awkward posture in enclosed space, shortness of breath, heat exhaustion, fainting, anxiety, respiratory irritation, hyperventilation, reduced mental alertness, respiratory failure, unconsciousness, fatality due to decreased oxygen in the blood leading to full body shutdown.	developed and conveyed to workers. Workers enter in confined space in pairs. Clear signs were posted outside storage tank to remind workers about confined space hazards. Health surveillance of workers was conducted regularly to see if they are able to response in emergency. First aid arrangements are made for workers entering in confined space. Authorized and trained hole watcher present on water tank entry at all times.			
Slips and Trips Slip and fall of workers on the wet floor while working near quenching	Quenching machine operator, Cleaning crew may get harmed. Water used in quenching process to cool steel after heating at quenching	Micro fibre mops provided to workers for cleaning the spills and drying. Clear SSOW (Safe Systems of Work) established that have instructions on how to work safe	Use hot air dryers to dry the floor after cleaning with micro fibre mops. Use epoxy coatings on floor, which is slip resistant.	1 month 15 days	Health and Safety Manager Cleaning Supervisor

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
machine area.	machine area. Due to quenching process water trips on the ground and workers who are operating machine and workers assigned to clean the area may slips and fall while working on the wet floor and the injuries may be serious. They may suffer minor bruising, small cuts or scrapes, sprained Ankles, muscle strain, knee strain, foot or heel pain, minor concussion, dislocated shoulder, fractures (partial or full), whiplash injury, traumatic brain injury, spinal injury. These injuries could cause workers to face effects over long term affecting their quality of life.	on wet floor. Training was provided to workers regarding how to work on wet floor safely. Tool box talk was provided workers working on wet floor before start of shift. Emergency arrangements including a first aider and a complete first aid kit always present in the quenching machine area. Wet floor signage was displayed on the area to remind workers about slip hazard. Policy was implemented to make sure workers are using slip resistant shoes. Cleaning crew was assigned in the area to regularly clean the place.	Place spill trays on side on quenching machine to catch water coming out of quenching machine. Install water-absorbing mats (non-slippery) around the quenching machine to absorb water drop spills.	7 Days 7 Days	Area Supervisor Health and Safety Officer

		Supervision of workers carried out to ensure adherence to safe practices.			

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
		Safety shoes with increased grip pattern, Knee and Elbow Pads provided to workers.			
Movement of People and Vehicles Collision between FLT and workers while moving finished steel bars from production line to storage area.	FLT operator and nearby workers might get harm. Finished steel bars are transported from production line to storage area for storing the bars in shelves using Specialized Forklifts for Steel Handling. During the movement of FLT loaded with steel bars within steel mill there is a high chance of collision between nearby workers and FLT due to blocked vision of operator or due to operator being incompetent or over speeding of FLT or due to poorly maintained FLT and FLT track or operator being distracted and fatigued. Due to collision the workers may face contusions, scrapes and	FLTs were equipped with flashing lights to alert nearby workers. Speed limiter was installed on FLTs to control their speed. FLT operators are third party trained and licensed. A detailed banksman present with each FLT to guide FLT operator. Regular and surprise safety inspections conducted ensure safety practices regarding FLT operations are adhered. Regular maintenance of FLT was conducted to ensure FLT is in good working condition. Clear safety instructions were given to all workers in steel mill about collision in daily toolbox	Eliminate the use of FLT and instead use automated guided carts AGVs to move steel bars in mill. Make segregation between FLT pathway and workers pathways by applying steel polymer guardrails of 3 feet height. Mark the routes of FLT with high vis paint and warning tapes temporarily.	2 months 1 month 7 Days	Material Handling Manager Operations Manager Health and Safety Manager

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
	cuts, twisting or stretching of ligaments, injury to muscles, lacerations, whiplash, small fractures, mild head injury, minor rib injury, hand or finger sprain, neck stiffness, fractured ribs, swollen limbs, back strain, severe cuts, sprained ankle, dislocated shoulder, knee injury, Mild head injury, facial injuries, crushed limbs, severe head injury, multiple broken bones, spinal cord injury. These injuries could cause workers to suffer for life (disability) or could be fatal if not treated properly.	talk. Clear signage to alert workers about movement of FLT was displayed all over the areas where FLT move. Clear communication procedures developed to alert worker using hand signals in noisy area. Rest Breaks provided to workers and FLT operators to prevent fatigue and to decrease the likelihood of collision. Distracting activities i.e. talking, using phone etc. are strictly prohibited for FLT operators while driving. High-visibility clothing was provided to workers to make them more visible to FLT operator.			

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Work-Related Driving Collision between delivery vehicle and other road users on road while delivering steel bars to customers.	Truck driver and occupants of other vehicle might be harmed. Truck driver deliver finished steel bars to customers at their location. During this movement on the road with loaded truck of heavy steel bars there is a high chance of collision on the way because of over speeding of loaded truck or due to incompetency of driver or due to weather and traffic conditions or due to shifting of load during transit. The collision could also occur due to poorly maintained truck or due to driver being distracted or fatigued or due to error of other vehicle driver. If the collision occurs occupants of both vehicles can get serious injuries, which includes contusions, minor cuts, sprained ankle, hand or finger sprain, neck	Enhanced LED lights installed on truck for better visibility in low light. Adequate training was provided to drivers including defensive driving and load securing. Only trained and licensed drivers allowed to carry out delivery operations. Inspection and planned preventive maintenance of truck carried out. Monitoring of driver carried out using Live GPS monitoring. Route planning in carried out pre delivery and only route with good road condition is used. Delivery operations carried out at night to avoid high rush on route. Speed limit of max speed of 60km/h set and conveyed to drivers.	Hire an external third party delivery contractor for carrying out delivery of steel to customers. Install Collision Avoidance System (Forward Collision Warning and Automatic Emergency Braking) in Truck. Install proper Load Securing Devices (Lashing Belts and Friction mats) to avoid shifting of material in transit. Make emergency arrangements including emergency auto call dialling for delivery operations.	2 Months 1 Month 10 Days 5 Days	Operations Manager Automation Engineer Transport Supervisor Health and Safety Officer

	stiffness, mild headache from whiplash, muscle				

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
	strain, minor swelling in limbs. More severe injuries include small fractures, minor rib injury, temporary disorientation, minor leg or knee injury, neck and shoulder injury, dislocated shoulder, fractured hand or finger, fractured bones, fractured ribs, severe head injury, spinal cord injury, multiple broken bones, crushed limbs, severe internal bleeding, coma, collapsed lung, crushed chest or abdomen, severe brain injury. These injuries can affect the quality of life of workers for long term or even lead to fatality if not treated timely.	Adequate rest breaks given to drivers before delivery operations. Safety and warning signs pasted on dashboard of vehicle. Communication devices including hazard lights and turn signals installed in truck for effective communication with other road users. Each truck is equipped with Seat Belt and Air Bags to control the severity of accidents.			
Electricity Electrocution due to electrical fault of Electrolytic Tanks during	Pickling operators and plating technicians might get harm. Electrical current is used to clean the steel surfaces and remove impurities from	Emergency shut-off switches were already installed to control any emergency situation. Lock-out/tag-out system was implemented to cut off power supply during maintenance.	Instead of using electrical current use Acid Pickling for removing impurities of steel and spray paint for plating the steel. Instead of using high voltage current use low voltage current (Pulse Electroplating) to decrease the severity of shock.	3 months 1 month	Production Manager Electrical Engineer

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

pickling or plating at coating area.	steel (pickling) and then coating process of metal is done using electrical current (plating) in electrolytic tanks. Workers who handle electrical system connected to electrolytic tank and monitor the pickling or plating process might get harm if any electrical fault occur and due to high risk of electrocution in coating area. These workers are at high risk of injuries that include mild discomfort, tingling or numbness in the affected area, minor burns on skin, pain in muscles and joints, increased heart rate, hand or finger sprains, neck stiffness, minor swelling, dizziness or disorientation, temporary confusion, back pain, headache, whiplash, facial burns. More severe effects include deep tissue damage from prolonged exposure, electrical shock-induced arrhythmia (irregular heartbeats),	Safe Systems of Work for working on electrolytic Tank developed and conveyed to workers. Training was provided on electrical safety to all workers who are handling electrolytic tank system. Routine safety inspections were conducted to identify hazards of electrical system and wiring to address them. Toolbox talk was provided to all workers to brief them about electrical hazards. Warning signs of electric hazard displayed over the area to remind workers about hazard. First-aiders are available on the area near electrolytic tank to quickly response in emergency. Continuous monitoring was conducted to identify where improvement need.	Install Ground Fault Circuit Interrupters (GFCIs) it can automatically cut off power when any fault is detected.	2 months	Electrical Engineer

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
	severe muscle damage, chest pain, loss of consciousness, severe burns, cardiac arrest (because of disruption to heart's electrical system). These can result in worker facing disability for life or even fatality.	Insulated Rubber gloves and foot wear are provided to workers to work in electrolytic tank area.			

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

Moral, general legal and financial arguments	**Moral Arguments:** **Amreli Steels Mill** management responsibility is to ensure workers are provided with safe place of work, safe machinery and safe equipment. If management provide safe system of work it will decrease overall accident rate and also develop trust and loyalty among workers. Workers who feel safe in the work place environment will work with dedication and motivation. Workers came to workplace to fulfil their needs and to support their families if any incident occurs at workplace it will not only affect the worker but also their families, friends and colleagues. These accidents have negative effects on workers physical health and mental health. It will also disturb workers families and their needs. Ensuring health and safety in **Amreli Steels Mill** helps to improve overall reputation because of that workers will work with full dedication. **General legal Argument:** Article16 of (ILO) C155 states that employer should provide safe workplace, machinery, equipment and ensure that safe actions were performing at workplace and further elaborate in ILO R164 Recommendation 10 which says proper instructions and training were provided and supervision of work was conducted. It is legal obligation to follow the conventions and recommendation of ILO and follow national and international legal laws if **Amreli Steels Mill** fails to do so, they may have to face Court fines, Court improvement notices, Prosecutions and imprisonments; reputation damage, compensation claims, legal costs and they may lose international and national certifications. **Financial Arguments:** **Amreli Steels Mill** may also face financial consequences if health and safety was not on first priority. If they fail in maintaining safety in workplace they may face direct costs which include medical expenses, workers

	compensation claims, Legal costs, sick pay (worker getting pay without working), and property damage costs. Some of the costs were indirect cost which **Amreli Steels Mill** has to face which includes loss of productivity, time lost, recruitment costs, reputation damage, relationship damage in industry, Decreased shareholder confidence. So management have to ensure safety within workplace to avoid the additional costs because these cost may have devastating effect on finance of **Amreli Steels Mill.**

Justification for action 1

Action (Taken from column 4 of risk assessment)	**Eliminate manual lifting with powerlifting by using ladle handling cranes-two Girder Overhead crane in mill to carry raw material. (hazard category Manual Handling)**
Specific legal arguments	In **Article 6 of ILO C127 Maximum Weight Convention 1967 and Recommendation 11 of ILO R128 Maximum Weight Recommendation,** it is stated that technical devices should be used to control manual handling to minimize the risk as much as possible. And **also Article 16(1) of ILO C155 and Recommendation 10(a) of ILO R164** says that all processes should be under control of employer and safe so it is mandatory for **Amreli Steels Mill** to provide ladle handling overhead crane to eliminate manual handling so all work done in **Amreli Steels Mill** is safe. If **Amreli Steels Mill** fails to do so then the number of injuries associated with the manual handling will increase that will lead to several consequences for **Amreli Steels Mill**. Enforcement body can take serious actions against **Amreli Steels Mill**, it could be fines because company didn't comply with safety laws. Prohibition notices to stop unsafe activity because of risk of getting harm. Temporarily seal of operations of **Amreli Steels Mill** or even permanent seal in case of not taking action timely. Steel mill could also face court proceedings, which may include legal fees in which company has to pay for lawyer and other court fees. Compensation claims if worker files a case against mill in civil court that it is their responsibility to provide safe place of work but they failed to do so, **Amreli Steels Mill** have to pay huge amount to the worker along with several legal consequences.

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	**This 5x5 risk matrix will be used for all 3 highest priority actions:** **Likelihood:1=rare, 2=unlikely, 3=possible, 4=likely, 5=almost certain** **Severity: 1=negligible, 2= minor, 3=moderate, 4=major, 5=Fatality** Material handlers handle the inventory of storage area to keep material organised to ensure proper tracking of stock in which they have to manually move the raw material in storage area and workers move the raw material and semi-finished products from storage area to production area using conveyor, they have to manually load the material on conveyor. Worker who deliver the raw material in the steel mill might get

	harm during unloading of material due to improper posture, technique during manual handling. **Likelihood is (5) = Almost Certain** because workers are continuously exposing in the hazard of manual handling. **20 workers** are assigned the job of manually handling the loading and unloading of raw material in the steel mill and they work **8 hours a day with 1 hour of break and 6 days a week.** These workers are at high risk because of performing manual handling, the risk of manual handling is **widespread to the storage area and delivery area** where unloading of new raw material was taken place. **Severity is (4) which is major** because of manually handling heavy material and workers may experience awkward postures to complete their tasks which will cause them several health problems which includes muscle **Sprain** (injury to ligaments around a joint), **Strains** (a part of muscle can tear-off). **Foot injuries** (products can slip and fall on foot), **Neck injuries**, **awkward posture** (position of human body which deviates significantly from natural position, **Musculoskeletal disorders** (effects on muscles, nerves etc.). **Bulging discs** and **Hernia** (a sac formed by lining of abdominal cavity), **Lumber Strain**, **Herniated Discs** that can cause **Sciatica** (nerve compression between discs). Some of these issues could cause chronic pain and mobility issues to workers. **The overall risk is 20 = Extreme calculated by multiplying Likelihood 5 = Almost Certain and Severity 4 = Major**

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	Using ladle handling cranes-two Girder Overhead crane and the likelihood of exposing into the hazard will be reduced. Use of overhead crane will reduce the need of workers to load/unload manually instead the load will be attached with the crane and these cranes are able to lift 320 tons of weight at one time so lifting manually eliminated and the likelihood was decrease **from 5 = Almost Certain to 1 = Rare.** Because of eliminating the manual handling the risk of injuries will also decrease, so the severity will be decrease from **4 = Major to 1 = Negligible.** **The Residual Risk will be 1 = Low from previous 20 = Extreme.** The total time to install overhead crane was **3 months** the first 15 days are required to plan on area where crane will install and approval from supervisor and then 15 days to prepare the area where crane will be installed then 45 days are required to install crane in the steel mill and then 15 days for testing the cranes that it works safely and to know if any change is required. By implementing on this action, the risk of manual handling will be eliminated and it will fully control the risk.

Justification for action 2

Action (Taken from column 4 of risk assessment)	**Use Direct arc furnace, which is electric and emits fewer harmful emission instead of blast furnace. (Hazard Category: Hazardous Substances)**

Specific legal arguments	In **Article 13.1(b) of ILO C170 Chemical Convention 1990, and From Recommendation 11.1(a) of ILO R177 Chemical Recommendation** it is responsibility of employer to limit the exposure of workers to harmful emissions by choosing technology that have minimum risk to health of workers. Furthermore, in **Article 16(1) of ILO Convention C155 (Occupational Safety and Health Convention, 1981)** binds employer to provide safe work processes at workplace. Therefore, it is responsibility of **Amreli Steels Mill** to ensure replacing of blast furnace with direct arc furnace which is electric and it will emits less carbon monoxide and workers will not be exposed to harmful fumes of Carbon Monoxide. If **Amreli Steels Mill** do not minimise the exposure of carbon monoxide and do not replace the blast furnace with direct arc furnace the number of work-related health and safety issues will increase resulting in several legal consequences for **Amreli Steels Mill**. The legal consequences may include penalties, improvement orders by officials of doing corrective actions. Courts may cease operations that are unsafe, whole steel mill shutdown for investigation, Lawsuits against senior management. Fines because of doing work with non-compliance with regulations, permanent seal of whole steel mill, imprisonment of supervisors and may be compensation claims for injured works because they only have to prove in court that the place of work was not safe, Suspension of licenses if fail to comply with regulation.
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	During the process of making steel the raw material is melted in blast furnace and hazardous fumes (carbon monoxide) are produced, which is hazardous to health of workers. In the process workers who operate the blast furnace to make steel they have high risk of inhaling these Carbon Monoxide (CO) because they are directly in the line of fire and workers who are doing maintenance might get exposed in the fumes while doing maintenance or testing. This continuous inhalation of hazardous fumes (CO) cause workers health problems and the likelihood of health issues will increase. **Likelihood is 4 = likely** because **8 workers** are present in blast furnace area and they work **08 hours a day with 1 hour of break and 6 days a week**. These workers are at high risk of being exposed in hazard because of performing job in the area, the risk of inhaling carbon monoxide is **widespread in only the area of blast furnace** and only these workers are at risk. **Severity is (5) which is Fatality,** because of workers being continuously exposing to the hazard of inhaling carbon monoxide. Worker may have several health problems because of this continuous inhalation of Carbon Monoxide which includes Mild irritation because of exposure of carbon monoxide, Headaches,

	fatigue, dizziness because of continuous inhalation of hazardous fume, Nausea, vomiting which are poisoning symptoms, Coughing **,** Irritated skin because of chemical exposure, Shortness of breath, Cough with mucus because of respiratory distress, Chest tightness because of carbon monoxide exposure, Chronic obstructive pulmonary disease if the exposure is long term, Lung cancer because of long exposure of carbon monoxide, Heart attack because of oxygen deprivation, Chronic respiratory diseases because of on-going lung damage because of long exposure, Cardiovascular damage, fatality in case of high CO concentration in blood due to Carbon Monoxide inhalation. **Likelihood is (4) which is likely and Severity is (5) which is Fatality, so calculated risk level is 4*5=20 which is Extreme.**
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	Using Electric Direct Arc furnace will emit fewer fumes and workers will be less exposed into carbon monoxide as they utilize electricity for melting ores instead of coal thereby reducing the overall carbon footprint. The likelihood of workers exposing into the hazardous fumes will be reduced. By using direct arc furnace the likelihood will decrease **from 4 = Likely to 2 = Unlikely.** The severity will also decrease from **5 = Fatality to 2 = Minor.** **The risk will decrease from 20 = Extreme to 4 = Moderate.** The total time to install direct arc furnace was **2 months**, approval from supervisor will take 5 days than dismantling of previous blast furnace, and preparing the place for new furnace will be done in next 15 days. 10 days for procurement of Electric direct arc furnace, after procurement the installation will take 20 days and in last 10 days testing will be carried out to know if any changes were needed. This action will not fully control the risk.

Action (Taken from column 4 of risk assessment)	**Use Forced Air Venting System with integrated Oxygen Detector to supply oxygen to confined space when the O_2 drops to minimum limit.** **(Hazard category: Confined Spaces)**
Specific legal arguments	ILO does not have any certain convention or recommendation related to this confined space hazard in steel mill but they do provide guidelines in construction industry for confined spaces which can be applied in steel mill as well as there is a confined space here as well. According to **Article 28(3) of ILO Convention C167(Safety and Health in Construction Convention, 1988),** It is responsibility of the employer to take adequate measures to prevent deficiency of oxygen in confined spaces. **Recommendation 45 of ILO**

Justification for action 3

	Recommendation R175 (Safety and Health in Construction recommendation, 1988) states that measures should be taken to control dangerous atmosphere. **Article 19(c) of ILO Convention C167 (Safety and Health in Construction Convention, 1988),** requires the employer to take necessary measures to make the workplace atmosphere fit for respiration by procuring adequate ventilation. To provide a safe breathing environment to workers working in water tank and to meet the above-mentioned legal requirements, **Amreli Steels Mill** should provide **Forced Air Venting System with integrated Oxygen Detector** for safe working in closed Water Tank. It will fulfil oxygen demand of the workers working inside water tank and prevent them from bad health effects associated with deficiency of oxygen. If **Amreli Steels Mill** does not provide Forced Air Venting System with Integrated Oxygen Detector to the workers, it'll be against the above stated ILO conventions and recommendations. This violation may lead to enforcement actions including improvement notice, prohibition notice, prosecution in criminal court, penalties and fines, blacklisting, licence cancellation and imprisonment and permanent ban of the company. The injured worker may prosecute the company for compensation claims in civil court.
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	Water is used in quenching process to cool steel after heating and water is stored in water storage tank, then quenching machine reuse the water from storage tank several times. During the process of cooling steel, the layer of iron and other compounds shed and because of water reusability this oxide scale goes into water tank so water tank needs to be cleaned frequently to maintain the life of water tank and to ensure volume of water tank does not decrease. Workers have to go inside the water tank, which is a confined space. Therefore, the **Likelihood is 5 = Almost Certain** as there are at least **6 workers** who enter the water tank and carryout the cleaning task. Cleaning task is carried out once in a week and it takes almost **8 hours (single shift time)** to complete the cleaning activity efficiently. The risk of **oxygen deficiency is only restricted to confined space which is water tank and does not exist anywhere else.** Severity is **5 = Fatality** this is because when workers are exposed to oxygen deficient environment they can face several health effects. The effects include fatigue, dehydration, headache, nausea, dizziness, coughing, muscle strain due to work in awkward posture in enclosed space, shortness of breath, heat exhaustion, fainting, anxiety, respiratory irritation, hyperventilation, reduced mental alertness, respiratory failure, unconsciousness, fatality due to decreased oxygen in the blood leading to full body shutdown. **Likelihood is (5) which is Almost certain and Severity is (5) which is fatality, so calculated risk level is 5*5=25 which is Extreme.**

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	Forced Air Venting System with Oxygen Detector works by using a fan which forces the fresh air from a tube into confined space (water tank in this case). An oxygen detector is attached to its tube to monitor the level of oxygen in confined space. As soon as the level of oxygen drops below the specified level (19.5%), the oxygen detector after detecting automatically starts the fan to push fresh air into the confined space until the oxygen level reaches optimal percentage of 22%. The Likelihood will reduce from **5 = Almost Certain** to **1= Rare** because after providing the Forced Air Venting System with Oxygen Detector, the chances of occurrence of deficiency of oxygen to workers doing plaster work in underground water tank will reduce. The severity will also reduce from **5= Fatality** to **1= Negligible.** **The overall risk will reduce from 25 = Extreme to 1 = low.** I have allocated **20 days** for provision of Forced Air Venting System with Oxygen Detector because **4 days** are allocated for necessary paperwork and approval from senior management, **04 days** for approval and issuance of funds from finance department, **07 days** for delivery and **05 days** for installation and training of workers for its proper use. This action will not fully control the risk. Because oxygen detector sensor could malfunction so regular maintenance of forced air venting system with oxygen detector must be carried out. And additional oxygen sensors detectors must be used so that in case of malfunctioning of oxygen detection sensor, the system could be started manually by hole-watcher present on confined space entry.

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.**

Planned review date/period with **reasoning**	This risk assessment was prepared on **08 March, 2025**. The planned review date is **08 March, 2026**. Selecting this date because it is **Amreli Steels Mill** policy to review risk assessments after every 12 months to ensure validity and effectiveness of health and safety system and procedures within workplace. This 12 month period is maximum validity of policy, if any health case, accident, incident, near miss, change in process, technology change, work equipment change, change in working environment, change in key personnel happens in the **Amreli Steels Mill** the Risk Assessment needs to be reviewed immediately.

How the risk assessment findings will be communicated **AND** who you need to tell	I will share all the finding from risk assessment with **Amreli Steels Mill** management via email. If the risk assessment was approved, I will communicate it with all staff managers including operational manager, engineering manager, maintenance manager, health and safety manager, electrical manager, production manager, automation manager, material handling manager and environmental manager and all workers. I will send emails to all workers who have email access. I will conduct safety meeting to present this risk
	assessment to all supervisor and give them copies of this risk assessment so they can keep it in their office. I will put this risk assessment on notice boards of all areas of **Amreli Steels Mill** including inspection area, melting area, blast furnace, raw material handling area, rolling mill area, storage area, storage tank area, coating area. I am going to share all information in toolbox talks and in training sessions of workers and also update the induction slides and put all new information to tell new comers in **Amreli Steels Mill.**
How you will follow up on the risk assessment to check that the actions have been carried out	I will create daily planner to check mark all important actions, responsible people, and timescale for each task need to address. One-to-one meetings were conducted to remind responsible persons that these actions need to be performed. Each control is linked with specific responsible person so I will rearrange the control and share with them individually. I will ask Health and safety officer to give me regular updates. This follow-up will continue until all safe actions were achieved and likelihood of incident decrease. I will tick mark in-front of every action to know what actions are still pending and needs to be addressed. If there are any delays due to approval from managers I will try to convince them by telling them the importance of that action and by giving them moral, legal and financial arguments. At last I will update **Amreli Steels Mill** safety procedures with new controls mentioned in this risk assessment.