What are Occupational Standards (OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

Contents

Introduction

Qualifications Pack – Iron & Steel – Fitter: Electrical Assembly

SECTOR: Iron & Steel

SUB-SECTOR: Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory

REFERENCE ID: ISC/Q1001

ALIGNED TO: NCO-2004/NIL

Title of Job: This job is all about identifying the operations required to assemble various components of the machine by studying their engineering drawings, fitting different components of the machine and testing the assembled machine

Personal Attributes: This job requires the individual to work independently as well as in teams. He should have analytical skills, problem solving attitude, high concentration levels and willingness to work in a factory environment.

Job Details

Qualifications Pack Code	ISC/Q1001		
Job Role	Iron & Steel – Fitter: Electrical Assembly		
Credits(NSQF)	TBD	Version number	1.0
Industry	Iron & Steel	Drafted on	21/07/2014
Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory	Last reviewed on	30/12/2014
Occupation	Electrical Maintenance	Next review date	30/12/2015
NSQC Clearance on	18/06/2015		

Job Role	Iron & Steel – Fitter: Electrical Assembly
Role Description	Fitter is responsible for identifying the operations required to assemble various components of the machine and electrical panel by studying their engineering drawings, fitting different components of the machine to perform assigned task and testing the assembled machine
NSQF level	3
Minimum Educational Qualifications	12th standard (Science) / ITI Pass
Maximum Educational Qualifications	Diploma
Training (Suggested but not mandatory)	• Theoretical concepts on machine handling and electrical panels • Trainings on operation of machinery and electrical panels
Minimum Job Entry Age	18 years
Experience	• In lieu of minimum qualification the incumbent should have minimum 24 months of relevant experience in the similar field/function under experienced supervisor as helper

Occupational Standards (OS)	Compulsory: ISC/N1001: Prepare for assembling operations ISC/N1002: Assemble the electrical components ISC/N1003: Perform post - assembly activities ISC/N1004: Carry out housekeeping ISC/N1005: Carry out reporting and documentation ISC/N1006: Carry out quality checks ISC/N1007: Carry out problem identification and escalation ISC/N0008: Use basic health and safety practices at the workplace ISC/N0009: Works effectively with others Optional: N/A
Performance Criteria	As described in the relevant NOS units

Definitions

Keywords /Terms	Description
Core Skills/Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working in today's world. These skills are typically needed in any work environment. In the context of the NOS, these include communication related skills that are applicable to most job roles.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of NOS.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standard.
National Occupational Standards (NOS)	NOS are Occupational Standards which apply uniquely in the Indian context.
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
Organisational Context	Organisational Context includes the way the organization is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
Qualifications Pack(QP)	Qualifications Pack comprises the set of NOS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification pack code.
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Scope	Scope is the set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on the quality of performance required.
Sector	Sector is a conglomeration of different business operations having similar businesses and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.

Sub-Sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Sub-functions	Sub-functions are sub-activities essential to fulfil the achieving the objectives of the function.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Unit Code	Unit Code is a unique identifier for a NOS unit, which can be denoted with an 'N'.
Unit Title	Unit Title gives a clear overall statement about what the incumbent should be able to do.
Vertical	Vertical may exist within a sub-sector representing different domain areas or the client industries served by the industry.

Acronyms

Keywords /Terms	Description
NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
OEM	Original Equipment Manufacturer
OS	Occupational Standard(s)
QP	Qualifications Pack
5 S	Technique of maintaining orderliness –Japanese terminology
CP	Control Plan
WI	Work Instructions

National Occupational Standards

Overview

This unit is about understanding engineering designs and preparing equipment and tools for assembling operation

National Occupational Standard

Unit Code	ISC/N1001
Unit Title (Task)	**Prepare for assembling operations**
Description	This unit is about understanding engineering designs and preparing equipment and tools for assembling operation
Scope	This unit/task covers the following: • Understanding the engineering drawings • Prepare equipment to perform the assembling of components • Ensure material appropriateness for assembly • Ensuring housekeeping and safety on the shop floor

Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Understanding the engineering drawings	To be competent, the user/individual on the job must be able to: PC1. Understand assembly blueprints, engineering drawings and other specifications to identify the sequence of activities required to assemble the machine PC2. Read and interpret engineering drawings to ensure correct limits, tolerance and fits of equipment components PC3. Report and rectify cases of inappropriate information in design documents as per organizational procedures
Prepare equipment to perform the assembling of components	To be competent, the user/individual on the job must be able to: PC4. Identify tools and equipment required to perform the assembling of Components PC5. Collect tools required during the assembling process PC6. Ensure that tools match the desired specifications PC7. Ensure tools and equipment required for assembly are free from physical damage and ready for operation PC8. Report damaged / defective components of equipment as per the escalation matrix PC9. Ensure the calibration status of all measuring equipment and instruments PC10. Prepare the foundation base as per the job requirements i.e. cleaning using hand files, scraper, etc. PC11. Use braces, jacks, clamps, ropes or bolt straps to hold parts in position
Ensure material appropriateness for assembly	To be competent, the user/individual on the job must be able to: PC12. Collect work pieces/ components to be assembled PC13. Ensure that each material is in the correct quantity PC14. Ensure, by visual inspection, that work pieces are of desired quality (free of rust, type of metal, etc.) PC15. Ensure that paint, grease, rust, or other contaminants are removed from work pieces PC16. Smoothen out the metal work piece prior to assembling

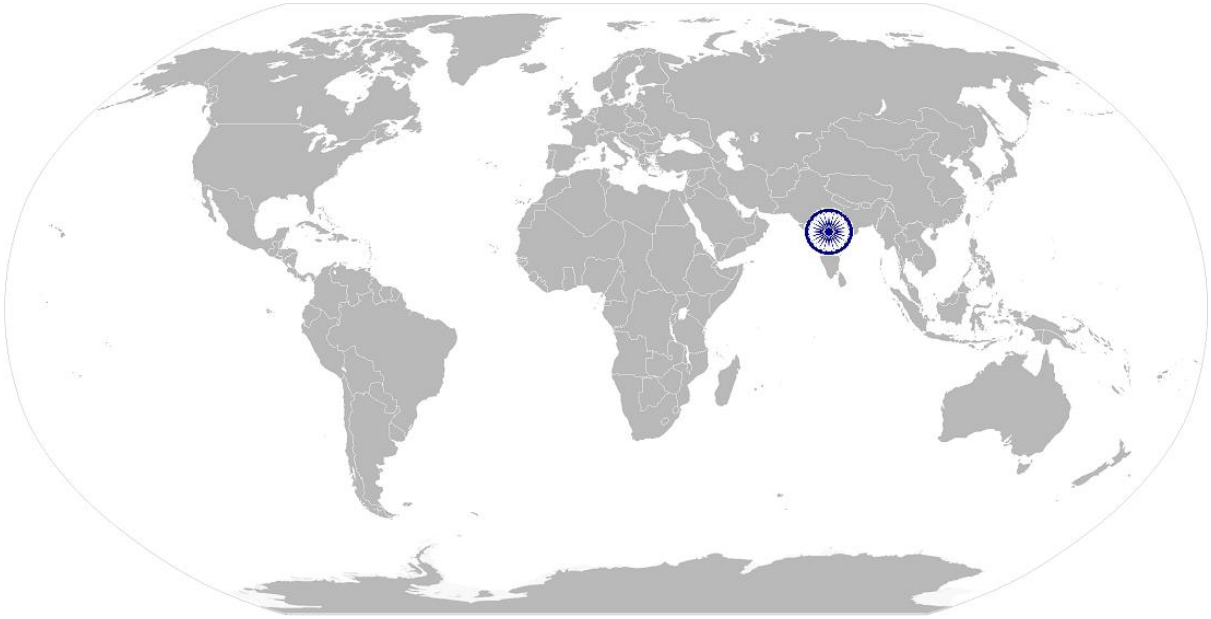
	PC17. Ensure that no delays are caused as a result of improper preparation and failure to identify problems
Ensuring housekeeping and safety on the shop floor	To be competent, the user/individual on the job must be able to: PC18. Ensure housekeeping and safety in work area PC19. Ensure that the exhaust systems are used to maintain the concentration levels of various particulate matters remain within limits PC20. Ensure use of mask during grinding to avoid inhaling the dust PC21. Ensure that the loose and torn clothes are not worn during working hours PC22. Ensure using hoist or forklift for lifting heavy materials to avoid physical injury PC23. Adhere to all other safety norms (like wearing shoes, gloves, safety goggles etc.) PC24. Ensure that unpermitted materials such as fuels, paints etc. are removed from the work area PC25. Comply with health, safety, environment guidelines, regulations etc. in accordance with organizational SOP PC26. Identify any potential health hazards or dangers and escalate to supervisor as per organizational SOP
Element	**Knowledge and Understanding (K)**
A. Organisational Context (Knowledge of the Company/ Organisation and its processes)	The user/individual on the job needs to know and understand: KA1. Use of instruments to check dimensions etc. KA2. Implications of poorly prepared material, power failure etc. KA3. Material disposal procedure, importance of appropriate disposal of material and implications of not following the material disposal procedure KA4. Quality and damage checks to be done and importance of the same KA5. Risk and impact of not following defined procedures/work instructions KA6. Escalation matrix for reporting identified issues KA7. Types of documentation in organization and importance of the same KA8. Records to be maintained and implications of non-maintenance of the same KA9. Importance of housekeeping & good shop floor practices (e.g. 3S & 5S) KA10. Health, Safety and Environment guidelines, legislation and regulations as applicable KA11. Personal protection(Which protective equipment to be used and how) KA12. Impact of poor practices on health, safety and environment KA13. Potential hazards and actions to minimize the same KA14. Escalation matrix and escalation procedure for reporting hazards KA 15. Knowhow knowledge of shut down procedures KB16. Knowledge of electrical panel & control circuits

B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. Assembling techniques such as aligning, bending, fixing, mechanical jointing, threaded jointing, sealing and torquing KB2. Steps required to assemble/ dis-assemble an equipment with a given design KB3. Checks that need to be made to ensure that equipment is safe and ready to use (electrical connections, power return and earthing arrangements; equipment calibration, setting parameters) KB4. Limits, fits and tolerances KB5. Procedures to check adherence to specifications and quality standards of equipment like verner calliper, screw gauge, etc. KB6. Engineering drawings and tools drawings KB7. Understanding of normal running characteristics of machines KB8. Possible causes of common problems during assembly & their remedies KB9. Implications of not adhering to sequence of activities and operations KB10. Units of measurement KB11. Response to emergencies e.g. Power failures ,fire and system failures
Skills (S) w.r.t. the scope	
Element	Skills
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. Construct simple sentences and express ideas clearly through written communication SA2. Fill up appropriate technical forms, process charts, activity logs in required format of the company SA3. Write simple letters, mails, etc.
	Reading and Understanding Skills
	The user/individual on the job needs to know and understand how to: SA4. Read and interpret engineering/ machine drawings and electrical panel SA5. Read and understand manuals, health and safety instructions, memos, reports, job cards, etc.
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA6. Express statements, opinions or information clearly so that others can hear and understand SA7. Respond appropriately to any queries SA8. Communicate with supervisor SA9. Communicate with upstream and downstream teams SA10. Work in a team and other behavioural skills required to support the small group activities (Quality Circle, Cross Functional Team, Suggestion Scheme)
	Integrity

	The user/individual on the job needs to know and understand how to: SA11. Practice honesty with respect to company property and time SA12. Communicate with people in a form and manner and using language that is open and respectful SA13. Resolve any difficulties in relationships with colleagues , or get help from an appropriate person, in a way that preserves goodwill and trust
	Motivation
	The user/individual on the job needs to know and understand how to: SA14. Take responsibility for completing one's own work assignment SA15. Take initiative to enhance/learn skills in other areas of work SA16. The capacity to learn from experience in a range of settings and scenarios and the capacity to reflect on and analyse one's learning SA17. Is open to new ways of doing things
	Reliability
	The user/individual on the job needs to know and understand how to: SA18. Avoid absenteeism SA19. Act objectively , rather than impulsively or emotionally when faced with difficult/stressful or emotional situations SA20. Work in disciplined factory environment SA21. Be punctual
B. Professional Skills	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB1. Diagnose common problems in the tools based on visual inspection, sound, temperature etc. SB2. Suggest improvements(if any) in process based on experience

NOS Version Control

NOS Code	ISC/N1001		
Credits(NSQF)	TBD	Version number	1.0
Industry	Iron and steel	Drafted on	21/07/2014
Industry Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory	Last reviewed on	30/12/2014
Occupation	Electrical Maintenance	Next review date	30/12/2015



ISC/N1002: Assemble the electrical components

National Occupational Standards

Overview

This unit is about assembling various components as per the engineering/ product design

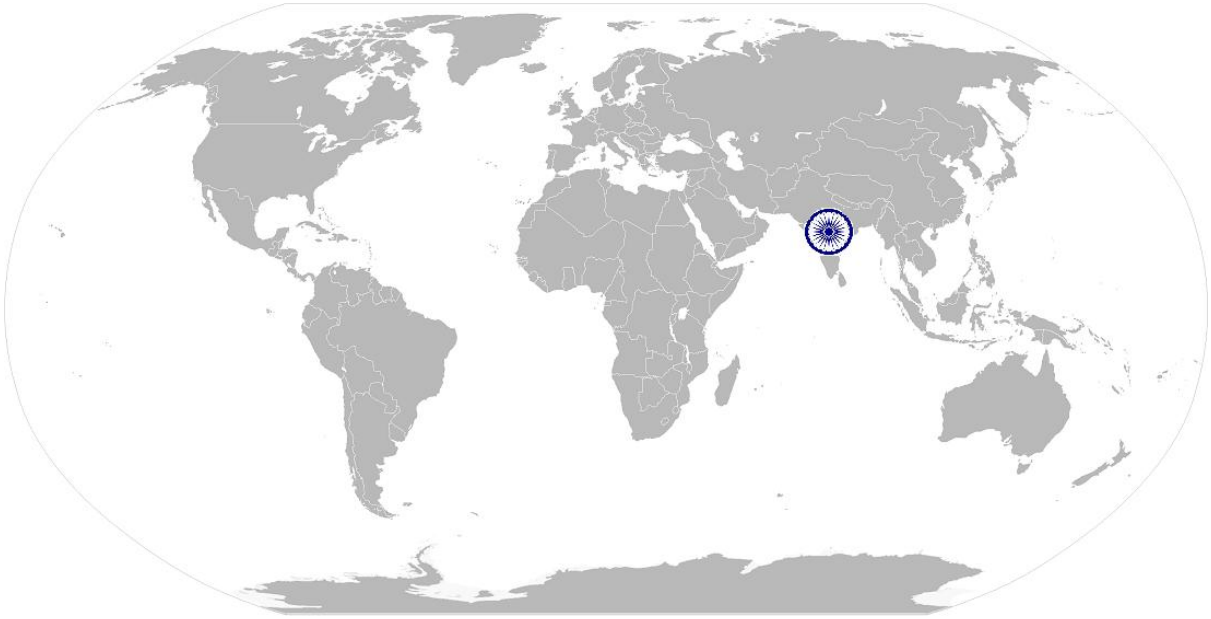
National Occupational Standard

Unit Code	ISC/N1002
Unit Title (Task)	**Assemble the electrical components**
Description	This unit is about assembling various components as per the engineering/ product design
Scope	This unit/task covers the following: • Preparing Equipments and Machines and Electrical panels • Assembling operation of various components of machines/equipment • Ensuring housekeeping and safety on the shop floor
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Preparing Equipments and Machines and Electrical panels	To be competent, the user/individual on the job must be able to: PC1. Ensure all tools and equipment required during assembly are ready for operation PC2. Ensure the calibration status of all measuring equipment and instruments PC3. Prepare control cables, electrical components like MCB's, Contactors, Relays etc. as per drawing requirement
Assembling operation of various components of machines/equipment	To be competent, the user/individual on the job must be able to: PC4. Lift and move components using handling equipment such as hoist or crane or manual methods PC5. Use file, chisel and grind parts to align or level the components to be assembled as per the design/ manufacturers' specifications PC6. Demonstrate use of machinery such as insulation testers, multimeters, etc. knife to cut or bore holes in the structure PC7. Demonstrate use of tools such as saws, cutting torches, pipe threaders or benders to cut, thread or bend parts as per the specifications PC8. Fasten mechanical components/ subassemblies together using screws, bolts, and collars using hand/ power tools PC9. Set and adjust linkages, tensions and clearances of assembled components to specifications using fixed gauges and hand tools PC10. Use of wires, stripers, crippling tools and other insulated tools
Ensuring housekeeping and safety on the shop floor	To be competent, the user/individual on the job must be able to: PC11. Ensure housekeeping and safety in work area PC12. Ensure that the exhaust systems are used to maintain the concentration levels of various particulate matters remain within limits PC13. Ensure use of mask during grinding to avoid inhaling the dust PC14. Ensure that the loose and torn clothes are not worn during working hours PC15. Ensure using hoist or forklift for lifting heavy materials to avoid physical injury PC16. Adhere to all other safety norms (like wearing electrical safety shoes, gloves,

	safety goggles etc.) PC17. Comply with health, safety, environment guidelines, regulations etc. in accordance with organizational SOP PC18. Identify any potential health hazards or dangers and escalate to supervisor as per organizational SOP PC 19. Ensure use of insulated hand gloves and electrical safety shoes
Element	Knowledge and Understanding (K)
A. Organisational Context (Knowledge of the Company/ Organisation and its processes)	The user/individual on the job needs to know and understand: KA1. Use of instruments (multimeter, toing tester, megar) and to check dimensions, continuity, insulation resistance etc. KA2. Implications of poorly prepared material, power failure etc. KA3. Material disposal procedure, importance of appropriate disposal of material and implications of not following the material disposal procedure KA4. Quality and damage checks to be done and importance of the same KA5. Risk and impact of not following defined procedures/work instructions KA6. Escalation matrix for reporting identified issues KA7. Records to be maintained and implications of non-maintenance of the same KA8. Importance of housekeeping & good shop floor practices (e.g. 3S & 5S) KA9. Health, Safety and Environment guidelines, legislation and regulations as applicable KA10. Personal protection(Which protective equipment to be used and how) KA11. Impact of poor practices on health, safety and environment KA12. Potential hazards and actions to minimize the same KA13. Escalation matrix and escalation procedure for reporting hazards
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. Assembling techniques such as aligning, bending, fixing, mechanical jointing, threaded jointing, sealing, torqueing, electrical cable jointing and termination, light fitting KB2. Steps required to assemble/ dis-assemble an equipment with a given design KB3. Checks that need to be made to ensure that equipment is safe and ready to use (electrical connections, power return and earthing arrangements; equipment calibration, setting parameters) KB4. Limits, fits and tolerances KB5. Engineering drawings KB6. Possible causes of common problems during assembly & their remedies KB7. Units of measurement KB8. Response to emergencies e.g. Power failures ,fire and system failures
Skills (S) w.r.t. the scope	
Element	Skills
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. Construct simple sentences and express ideas clearly through written

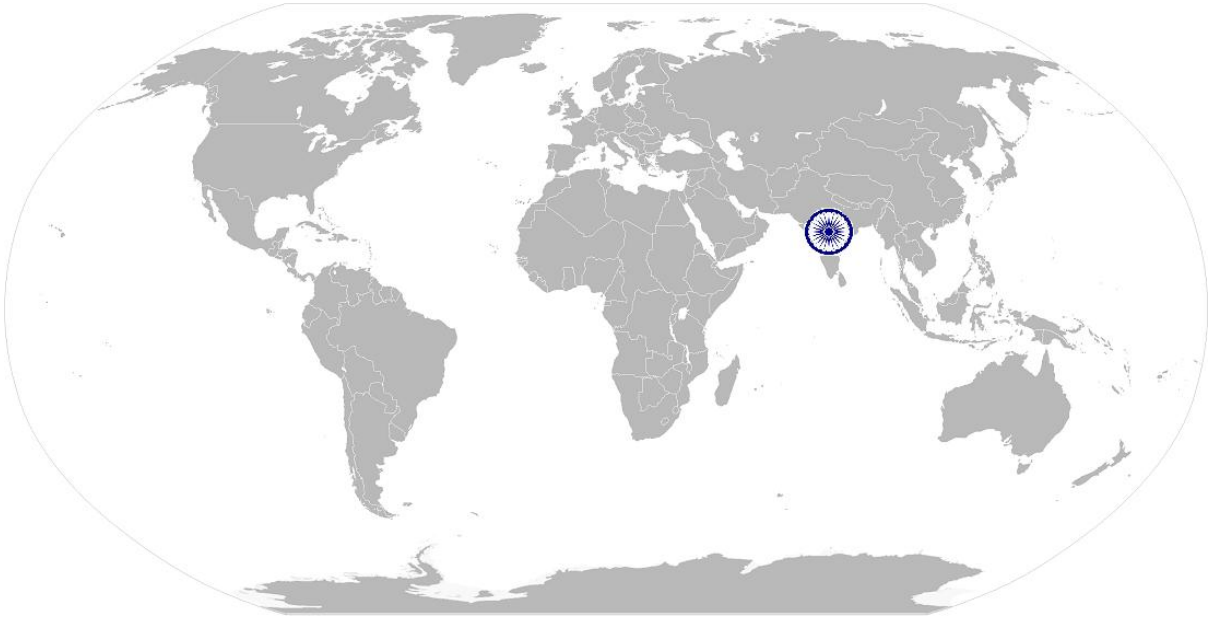
	communication SA2. Fill up appropriate technical forms, process charts, activity logs in required format of the company SA3. Write simple letters, mails, etc.
	Reading and Understanding Skills
	The user/individual on the job needs to know and understand how to: SA4. Read and interpret engineering/ machine drawings SA5. Read and understand manuals, health and safety instructions, memos, reports, job cards etc.
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA6. Express statements, opinions or information clearly so that others can hear and understand SA7. Respond appropriately to any queries SA8. Communicate with supervisor SA9. Communicate with upstream and downstream teams SA10. Work in a team and other behavioural skills required to support the small group activities (Quality Circle, Cross Functional Team, Suggestion Scheme)
	Integrity
	The user/individual on the job needs to know and understand how to: SA11. Practice honesty with respect to company property and time SA12. Communicate with people in a form and manner and using language that is open and respectful SA13. Resolve any difficulties in relationships with colleagues , or get help from an appropriate person, in a way that preserves goodwill and trust
	Motivation
	The user/individual on the job needs to know and understand how to: SA14. Take responsibility for completing one's own work assignment SA15. Take initiative to enhance/learn skills in other areas of work SA16. The capacity to learn from experience in a range of settings and scenarios and the capacity to reflect on and analyse one's learning SA17. Is open to new ways of doing things SA18. The capacity to envisage and articulate personal goals; to develop strategies and take action to achieve them
	Reliability
	The user/individual on the job needs to know and understand how to: SA19. Avoid absenteeism SA20. Act objectively , rather than impulsively or emotionally when faced with difficult/stressful or emotional situations SA21. Work in disciplined factory environment

	SA22. Be punctual
B. Professional Skills	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB1. Diagnose common problems in the tools based on visual inspection, sound, temperature etc. SB2. Suggest improvements(if any) in process based on experience

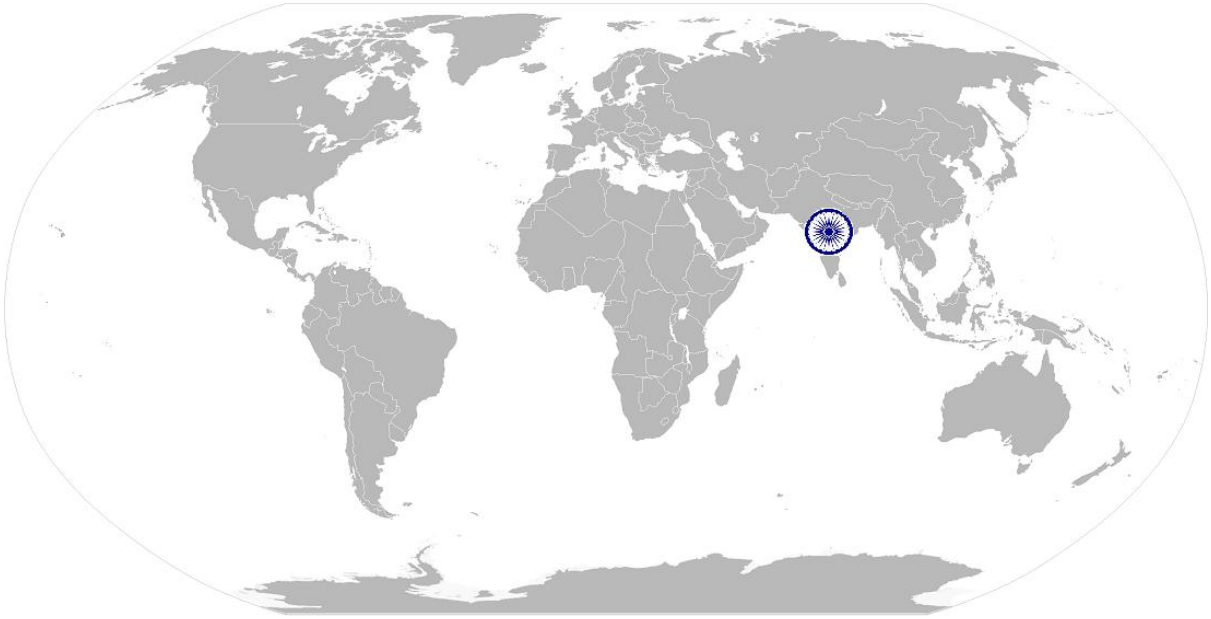


NOS Version Control

NOS Code	ISC/N1002		
Credits(NSQF)	TBD	Version number	1.0
Industry	Iron and steel	Drafted on	23/07/2014
Industry Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory	Last reviewed on	30/12/2014
Occupation	Electrical Maintenance	Next review date	30/12/2015



National Occupational Standards



Overview

This unit is about performing post - assembly activities

National Occupational Standard

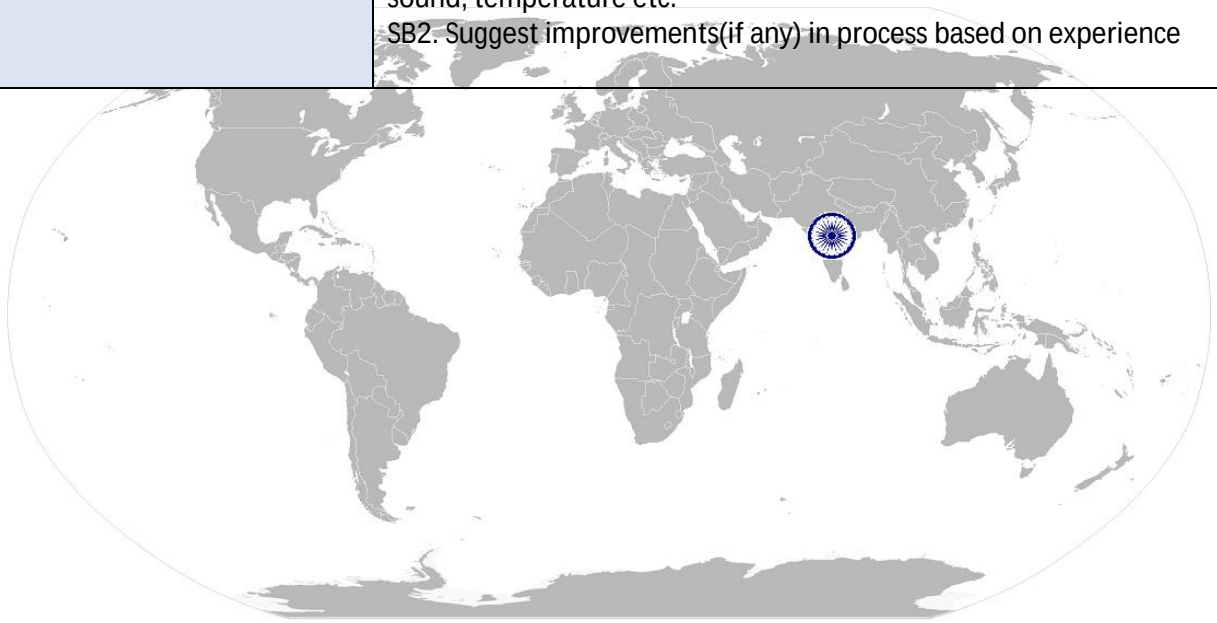
Unit Code	ISC/N1003
Unit Title (Task)	**Perform post - assembly activities**
Description	This unit is about performing post - assembly activities
Scope	This unit/task covers the following: • Testing of assembled machine/equipment/electrical panels • Disposal of waste • Ensuring housekeeping and safety on the shop-floor

Performance Criteria (PC) w.r.t. the Scope	
Element	**Performance Criteria**
Test the assembled machine/equipment/electrical panels	To be competent, the user/individual on the job must be able to: PC1. Connect the hydraulic, electrical and other components of the machine/electrical panels PC2. Add lubricants and coolants into moving parts as per specifications PC3. Carry out functional test of assembled machine/electrical panels to ensure it performs as per desired performance criteria PC4. Identify and rectify the problem areas during the functional tests PC5. Check the panel interlock and protection logic
Disposal of waste	To be competent, the user/individual on the job must be able to: PC6. Dispose-off waste material as per waste disposal procedures laid down by the company PC7. Carry out disposal of waste material safely
Ensuring housekeeping and safety on the shop-floor	To be competent, the user/individual on the job must be able to: PC8. Ensure housekeeping and safety in work area PC9. Ensure that the exhaust systems are used to maintain the concentration levels of various particulate matters remain within limits PC10. Ensure that the loose and torn clothes are not worn during working hours PC11. Ensure using hoist or forklift for lifting heavy materials to avoid physical injury PC12. Adhere to all other safety norms (like wearing electrical shoes, gloves, safety goggles etc.) PC13. Remove unpermitted materials such as fuels, paints etc. from the work area PC14. Comply with health, safety, environment guidelines, regulations etc. in accordance with organizational SOP PC15. Identify any potential health hazards or dangers and escalate to supervisor as per organizational SOP

Element	Knowledge and Understanding (K)
B. Organisational Context (Knowledge of the Company/ Organisation and its processes)	The user/individual on the job needs to know and understand: KA1. Use of instruments to check dimensions etc. KA2. Implications of poorly prepared material, power failure etc. KA3. Material disposal procedure, importance of appropriate disposal of material and implications of not following the material disposal procedure KA4. Quality and damage checks to be done and importance of the same KA5. Risk and impact of not following defined procedures/work instructions KA6. Escalation matrix for reporting identified issues KA7. Types of documentation in organization and importance of the same KA8. Records to be maintained and implications of non-maintenance of the same KA9. Importance of housekeeping & good shop floor practices (e.g. 3S & 5S) KA10. Health, Safety and Environment guidelines, legislation and regulations as applicable KA11. Personal protection(Which protective equipment to be used and how) KA12. Impact of poor practices on health, safety and environment KA13. Potential hazards and actions to minimize the same KA14. Escalation matrix and escalation procedure for reporting hazards
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. Assembling techniques such as aligning, bending, fixing, mechanical jointing, threaded jointing, sealing, torqueing, electrical cable jointing and termination, light fitting KB2. Steps required to assemble/ dis-assemble an equipment with a given design KB3. Checks that need to be made to ensure that equipment is safe and ready to use (electrical connections, power return and earthing arrangements; equipment calibration, setting parameters) KB4. Limits, fits and tolerances KB5. Procedures to check adherence to specifications and quality standards using equipment like vernier calliper, screw gauge, etc. KB6. Normal running characteristics of machines KB7. Engineering drawings and machine drawings / control circuits KB8. Possible causes of common problems during assembly & their remedies KB9. Implications of not adhering to sequence of activities and operations KB10. Units of measurement KB11. Response to emergencies e.g. Power failures ,fire and system failures KB12. Compilation of test results in prescribed format
Skills (S) w.r.t. the scope	
Element	Skills
C. Core Skills/ Generic Skills	Writing Skills

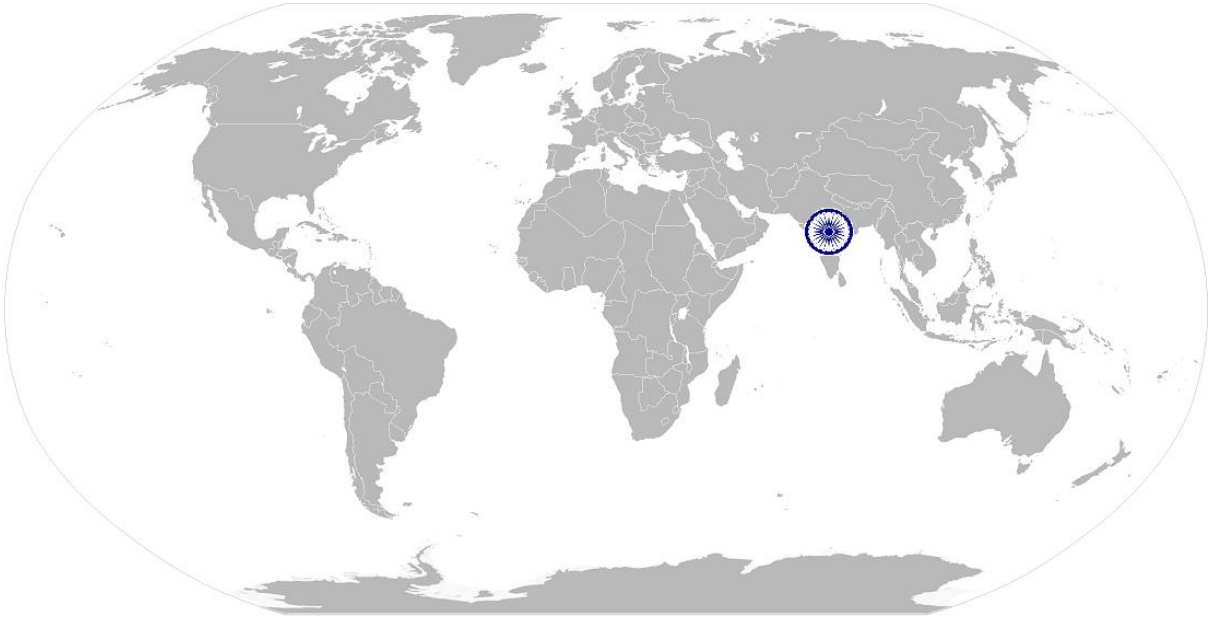
	The user/ individual on the job needs to know and understand how to: SA1. Construct simple sentences and express ideas clearly through written communication SA2. Fill up appropriate technical forms, process charts, activity logs in required format of the company SA3. Write simple letters, mails, etc.
	Reading and Understanding Skills
	The user/individual on the job needs to know and understand how to: SA4. Read and interpret engineering/ machine drawings SA5. Read and understand manuals, health and safety instructions, memos, reports, job cards etc.
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA6. Express statements, opinions or information clearly so that others can hear and understand SA7. Respond appropriately to any queries SA8. Communicate with supervisor SA9. Communicate with upstream and downstream teams SA10. Work in a team and other behavioural skills required to support the small group activities (Quality Circle, Cross Functional Team, Suggestion Scheme)
	Integrity
	The user/individual on the job needs to know and understand how to: SA11. Practice honesty with respect to company property and time SA12. Communicate with people in a form and manner and using language that is open and respectful SA13. Resolve any difficulties in relationships with colleagues , or get help from an appropriate person, in a way that preserves goodwill and trust
	Motivation
	The user/individual on the job needs to know and understand how to: SA14. Take responsibility for completing one's own work assignment SA15. Take initiative to enhance/learn skills in other areas of work SA16. The capacity to learn from experience in a range of settings and scenarios and the capacity to reflect on and analyse one's learning SA17. Is open to new ways of doing things SA18. The capacity to envisage and articulate personal goals; to develop strategies and take action to achieve them

	Reliability
	The user/individual on the job needs to know and understand how to: SA19. Avoid absenteeism SA20. Act objectively , rather than impulsively or emotionally when faced with difficult/stressful or emotional situations SA21. Work in disciplined factory environment SA22. Be punctual
D. Professional Skills	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB1. Diagnose common problems in the tools based on visual inspection, sound, temperature etc. SB2. Suggest improvements(if any) in process based on experience



NOS Version Control

NOS Code	ISC/N1003		
Credits(NSQF)	TBD	Version number	1.0
Industry	Iron and steel	Drafted on	23/07/2014
Industry Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory	Last reviewed on	30/12/2014
Occupation	Electrical Maintenance	Next review date	30/12/2015



ISC/N1004: Carry out housekeeping

National Occupational Standards

Overview

This unit is about carrying out housekeeping

National Occupational Standard

Unit Code	ISC/N1004
Unit Title (Task)	Carry out housekeeping
Description	This unit is about carrying out housekeeping activities
Scope	This unit/task covers the following: • Preparing for housekeeping activities • Carry out housekeeping activities • Post housekeeping activities

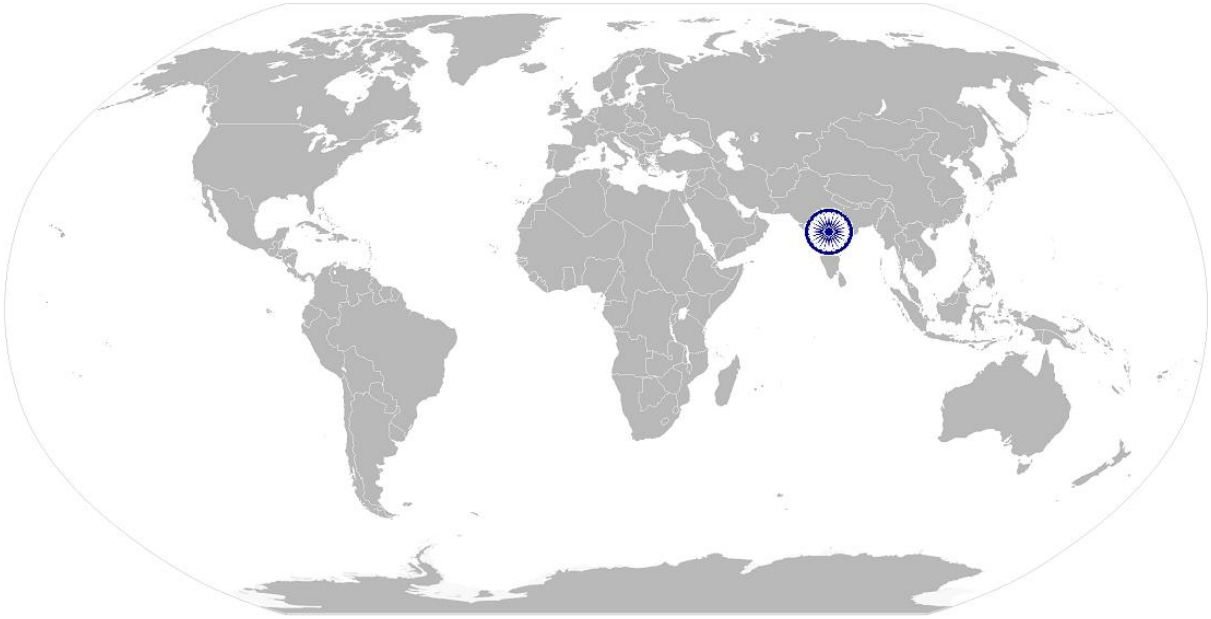
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Preparing for housekeeping activities	To be competent, the user/individual on the job must be able to: PC1. Inspect the area while taking into account various surfaces PC2. Identify the material requirements for cleaning the areas inspected, by considering risk, time, efficiency and type of stain PC3. Ensure that the cleaning equipment is in proper working condition PC4. Select the suitable alternatives for cleaning the areas in case the appropriate equipment and materials are not available and inform the appropriate person PC5. Plan the sequence for cleaning the area to avoid re-soiling clean areas and surfaces PC6. Inform the affected people about the cleaning activity PC7. Display the appropriate signage for the work being conducted PC8. Ensure that there is adequate ventilation for the work being carried out PC9. Wear the personal protective equipment required for the cleaning method and materials being used
Carry out housekeeping activities	To be competent, the user/individual on the job must be able to: PC10. Use the correct cleaning method for the work area, type of soiling and surface PC11. Carry out cleaning activity without disturbing others PC12. Deal with accidental damage, if any, caused while carrying out the work PC13. Report to the appropriate person any difficulties in carrying out your work PC14. Identify and report to the appropriate person any additional cleaning required that is outside one's responsibility or skill
Post housekeeping activities	To be competent, the user/individual on the job must be able to: PC15. Ensure that there is no oily substance on the floor to avoid slippage PC16. Ensure that no scrap material is lying around PC17. Maintain and store housekeeping equipment and supplies PC18. Follow workplace procedures to deal with any accidental damage caused during the cleaning process PC19. Ensure that, on completion of the work, the area is left clean and dry and meets requirements

	PC20. Return the equipment, materials and personal protective equipment that were used to the right places making sure they are clean, safe and securely stored PC21. Dispose the waste garnered from the activity in an appropriate manner PC22. Dispose of used and un-used solutions according to manufacturer's instructions, and clean the equipment thoroughly
Element	**Knowledge and Understanding**
A. Technical Knowledge	The user/individual on the job needs to know and understand: KA1. The levels of hygiene required by workplace and why it is important to maintain them during your work KA2. How to inspect a work area to decide what cleaning it needs KA3. Methods and materials that used for cleaning variety of surfaces KA4. The types of cleansing agents that are not to be mixed together KA5. The correct method for cleaning equipment and/or machinery used during your work KA6. The importance of personal protective equipment KA7. Appropriate personal protective equipment for the work area, cleaning equipment, tools, materials and chemicals used KA8. The correct sequence for cleaning the work area KA9. The time taken by the treatment to work KA10. The importance of following manufacturer's instructions on cleaning agents KA11. The most appropriate place to carry out test cleans and why this should be done before applying treatments KA12. The importance of applying treatments evenly and the effect of not doing this KA13. Process of cleaning the surfaces without causing injury or damage KA14. The method to check the treated surface and equipment on completion of cleaning KA15. Procedures for reporting any unidentified soiling KA16. Procedures for disposing off waste KA17. Procedures for disposing off or storing personal protective equipment KA18. Escalation procedures for soils or stains that could not be removed
Skills (S) w.r.t. the scope	
Element	**Skills**
A. Core Skills/ Generic Skills	**Writing Skills**
	The user/ individual on the job needs to know and understand how to: SA1. Construct simple sentences and express ideas clearly through written communication SA2. Fill up appropriate technical forms, process charts, activity logs in required format of the company SA3. Write simple letters, mails, etc. SA4. Perform functional mathematical operations, including apply basic mathematical principles, such as numbers and space, and techniques such as estimation and approximation, for practical purposes
	Reading and Understanding Skills
	The user/individual on the job needs to know and understand how to:

	SA5. Read and understand manuals, health and safety instructions, memos, reports, job cards etc. SA6. Read and interpret engineering and tool drawings
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA7. Express statements, opinions or information clearly so that others can hear and understand SA8. Respond appropriately to any queries SA9. Communicate with supervisor SA10. Communicate with upstream and downstream teams SA11. Work in a team and other behavioural skills required to support the small group activities (Quality Circle, Cross Functional Team, Suggestion Scheme)
	Integrity
	The user/individual on the job needs to know and understand how to: SA12. Practice honesty with respect to company property and time SA13. Communicate with people in a form and manner and using language that is open and respectful SA14. Resolve any difficulties in relationships with colleagues , or get help from an appropriate person, in a way that preserves goodwill and trust
	Motivation
	The user/individual on the job needs to know and understand how to: SA15. Take responsibility for completing one's own work assignment SA16. Take initiative to enhance/learn skills in one's area of work SA17. The capacity to learn from experience in a range of settings and scenarios and the capacity to reflect on and analyse one's learning SA18. Is open to new ways of doing things SA19. The capacity to envisage and articulate personal goals; to develop strategies and take action to achieve them
	Reliability
	The user/individual on the job needs to know and understand how to: SA20. Avoid absenteeism SA21. Act objectively , rather than impulsively or emotionally when faced with difficult/stressful or emotional situations SA22. Work in disciplined factory environment SA23. Be punctual

NOS Version Control

NOS Code	ISC/N1004		
Credits(NSQF)	TBD	Version number	1.0
Industry	Iron and steel	Drafted on	23/07/2014
Industry Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory	Last reviewed on	30/12/2014
Occupation	Electrical Maintenance	Next review date	30/12/2015



National Occupational Standards

Overview

This unit is about reporting and documentation.

National Occupational Standard

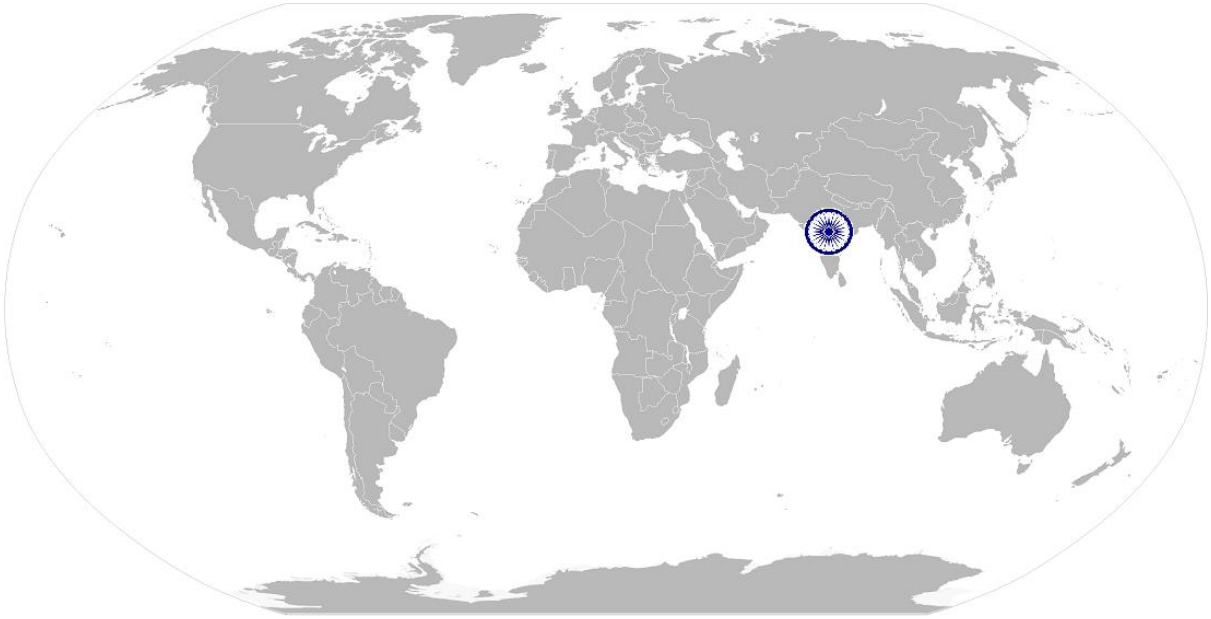
Unit Code	ISC/N1005
Unit Title (Task)	Carry out reporting and documentation
Description	This unit is about carrying out reporting and documentation
Scope	This unit/task covers the following: • Reporting of data/problem/incidents etc. • Documentation • Information Security

Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Reporting	To be competent, the user/individual on the job must be able to: PC1. Report data/problems/incidents as applicable in a timely manner PC2. Report to the appropriate authority as laid down by the company PC3. Follow reporting procedures as prescribed by the company
Recording and Documentation	To be competent, the user/individual on the job must be able to: PC4. Identify documentation to be completed relating to one's role PC5. Record details accurately an appropriate format PC6. Complete all documentation within stipulated time according to company procedure PC7. Ensure that the final document meets with the requirements of the persons who requested it or make any amendments accordingly PC8. Make sure documents are available to all appropriate authorities to inspect
Information Security	To be competent, the user/individual on the job must be able to: PC9. Respond to requests for information in an appropriate manner whilst following organizational procedures PC10. Inform the appropriate authority of requests for information received

Element	Knowledge and Understanding
A. Technical Knowledge	The user/individual on the job needs to know and understand: KA1. Different methods of recording information KA2. Various documents that need to be maintained KA3. Company procedure for filling/maintaining up the documents KA4. Procedures for reporting to the appropriate authority KA5. Procedures for recording damage, breakages etc. KA6. Reporting incidents where standard operating procedures are not followed KA7. The importance of complete and accurate documentation KA8. How to maintain complete documentation accurately and within agreed timescales KA9. The importance of ensuring that the documents are correct

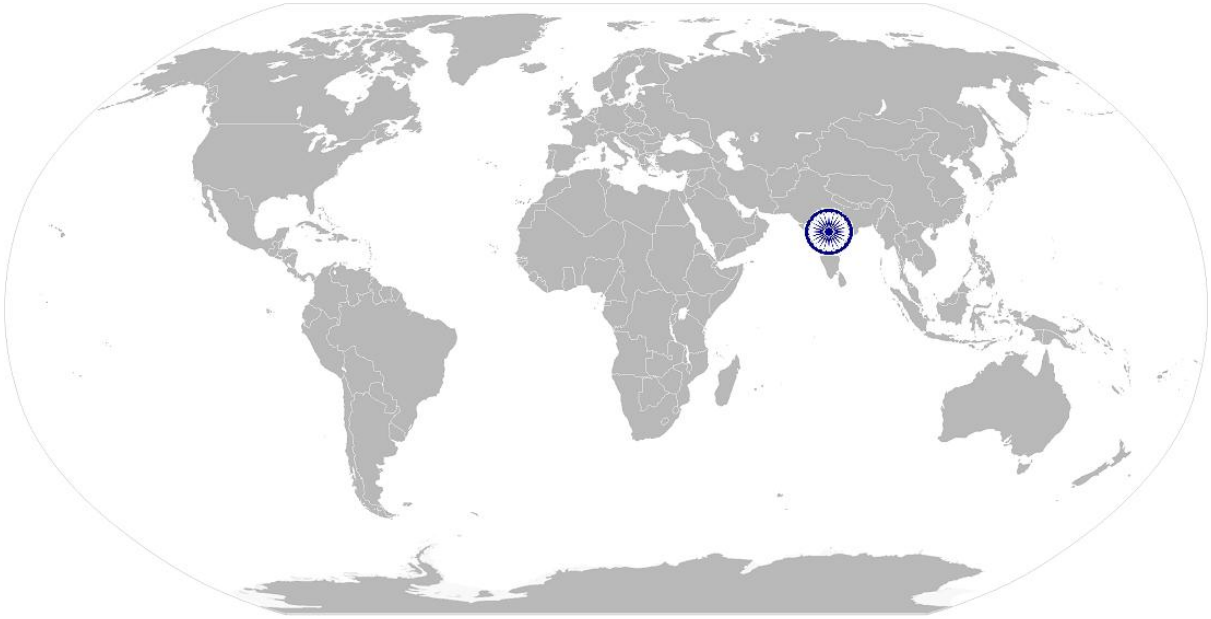
	KA10. The actions to be taken if the documents are not correct KA11. The importance of maintaining the security and confidentiality of recorded information KA12. Procedures to maintain confidentiality of information KA13. The appropriate method for responding to requests for information KA14. The reporting procedures to followed before disclosing information to any outside party
Skills (S) w.r.t. the scope	
Element	Skills
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. Construct simple sentences and express ideas clearly through written communication SA2. Fill up appropriate technical forms, process charts, activity logs in required format of the company SA3. Write simple letters, mails, etc. SA4. Perform functional mathematical operations, including apply basic mathematical principles, such as numbers and space, and techniques such as estimation and approximation, for practical purposes
	Reading and Understanding Skills
	The user/individual on the job needs to know and understand how to: SA5. Read and understand manuals, health and safety instructions, memos, reports, job cards etc. SA6. Read and interpret engineering and tool drawings
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA7. Express statements, opinions or information clearly so that others can hear and understand SA8. Respond appropriately to any queries SA9. Communicate with supervisor SA10. Communicate with upstream and downstream teams SA11. Work in a team and other behavioural skills required to support the small group activities (Quality Circle, Cross Functional Team, Suggestion Scheme)
	Integrity
	The user/individual on the job needs to know and understand how to: SA12. Practice honesty with respect to company property and time SA13. Communicate with people in a form and manner and using language that is open and respectful SA14. Resolve any difficulties in relationships with colleagues , or get help from an appropriate person, in a way that preserves goodwill and trust
	Motivation
	The user/individual on the job needs to know and understand how to:

	SA15. Take responsibility for completing one's own work assignment SA16. Take initiative to enhance/learn skills in others area of work SA17. The capacity to learn from experience in a range of settings and scenarios and the capacity to reflect on and analyse one's learning SA18. Is open to new ways of doing things SA19. The capacity to envisage and articulate personal goals; to develop strategies and take action to achieve them.
	Reliability
	The user/individual on the job needs to know and understand how to: SA20. Avoid absenteeism SA21. Act objectively , rather than impulsively or emotionally when faced with difficult/stressful or emotional situations SA22. Work in disciplined factory environment SA23. Be punctual



NOS Version Control

NOS Code	ISC/N1005		
Credits(NSQF)	TBD	Version number	1.0
Industry	Iron and steel	Drafted on	23/07/2014
Industry Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory	Last reviewed on	30/12/2014
Occupation	Electrical Maintenance	Next review date	30/12/2015



ISC/N1006: Carry out quality checks

National Occupational Standards

Overview

This unit is about carrying out quality checks

National Occupational Standard

Unit Code	ISC/N1006
Unit Title (Task)	Carry out quality checks
Description	This unit is about carrying out quality control activities
Scope	This unit/task covers the following: • Carrying out quality checks to identify problems • Take corrective actions • Reporting the results

Performance Criteria (PC) w.r.t. the Scope	
Element	**Performance Criteria**
Carrying out quality checks to identify problems	To be competent, the user/individual on the job must be able to: PC1. Ensure that total range of checks are regularly and consistently performed PC2. Use appropriate measuring instruments, equipment, tools, accessories etc. ,as required
Take corrective actions	To be competent, the user/individual on the job must be able to: PC3. Identify non-conformities to quality assurance standards PC4. Identify potential causes of non-conformities to quality assurance standards PC5. Identify impact on final product due to non-conformance to company standards PC6. Evaluating the need for action to ensure that problems do not recur PC7. Suggest corrective action to address problem PC8. Review effectiveness of corrective action
Reporting the results	To be competent, the user/individual on the job must be able to: PC9. Interpret the results of the operator level quality check correctly PC10. Inform any non-conformity to the appropriate authority within the stipulated time. PC11. Record of results of action taken PC12. Record adjustments not covered by established procedures for future reference PC13. Review effectiveness of action taken PC14. Follow reporting procedures where the cause of defect cannot be identified

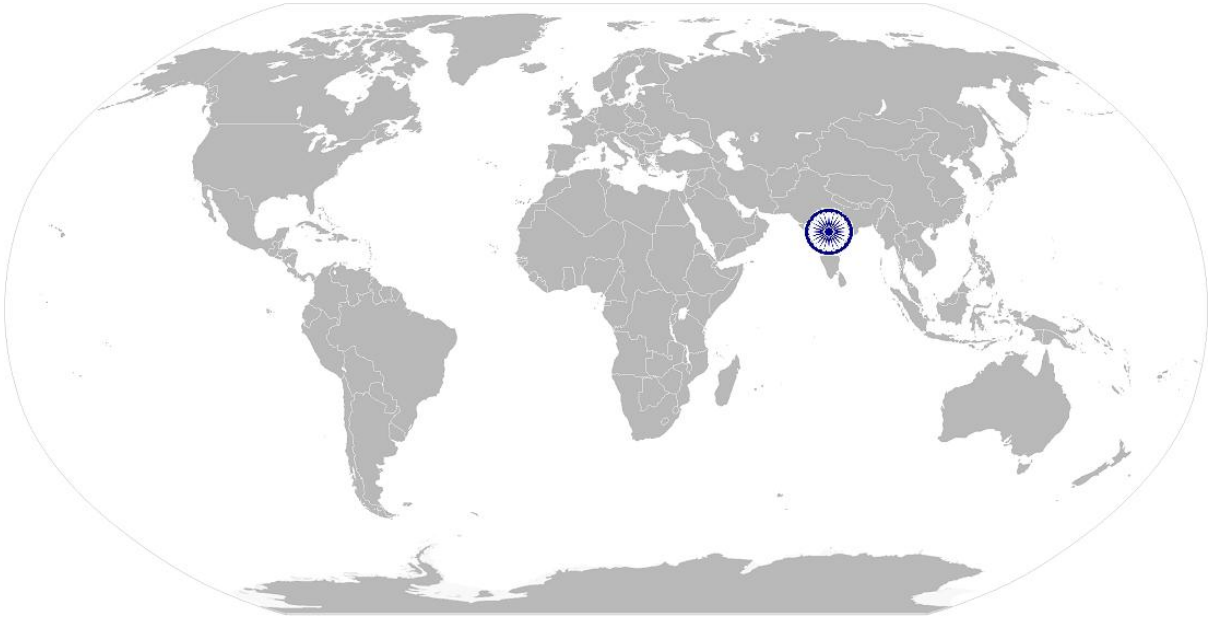
Element	Knowledge and Understanding
A. Technical Knowledge	The user/individual on the job needs to know and understand: KA1. The importance of quality control procedures KA2. Relevance and importance of activities and how they contribute to the achievement of the quality objectives, KA3. Proper procedure for selecting the material/product and performing quality

	checks without affecting the material KA4. Availability of work instructions, as necessary, KA5. Characteristics of the product/material KA6. Use of suitable equipment KA7. Availability and use of monitoring and measuring devices, KA8. Requirements of records KA9. Importance of maintaining accurate up-to-date records KA10. The need to report within the stipulated time KA11. Implications of inaccurate measuring and testing instruments and equipment KA12. The cost of non-conformance to quality standards KA13. Implications (impact on internal/external customers) of defective products, materials or components
Skills (S) w.r.t. the scope	
Element	Skills
A. ore Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. Construct simple sentences and express ideas clearly through written communication SA2. Fill up appropriate technical forms, process charts, activity logs in required format of the company SA3. Write simple letters, mails, etc. SA4. Perform functional mathematical operations, including apply basic mathematical principles, such as numbers and space, and techniques such as estimation and approximation, for practical purposes
	Reading and Understanding Skills
	The user/individual on the job needs to know and understand how to: SA5. Read and understand manuals, health and safety instructions, memos, reports, job cards etc. SA6. Read and interpret engineering and tool drawings
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA7. Express statements, opinions or information clearly so that others can hear and understand SA8. Respond appropriately to any queries SA9. Communicate with supervisor SA10. Communicate with upstream and downstream teams SA11. Work in a team and other behavioural skills required to support the small group activities (Quality Circle, Cross Functional Team, Suggestion Scheme)
	Integrity
	The user/individual on the job needs to know and understand how to: SA12. Practice honesty with respect to company property and time SA13. Communicate with people in a form and manner and using language hat is open

	and respectful SA14. Resolve any difficulties in relationships with colleagues , or get help from an appropriate person, in a way that preserves goodwill and trust
	Motivation
	The user/individual on the job needs to know and understand how to: SA15. Take responsibility for completing one's own work assignment SA16. Take initiative to enhance/learn skills in others area of work SA17. The capacity to learn from experience in a range of settings and scenarios and the capacity to reflect on and analyse one's learning. SA18. Is open to new ways of doing things SA19. The capacity to envisage and articulate personal goals; to develop strategies and take action to achieve them.
	Reliability
	The user/individual on the job needs to know and understand how to: SA20. Avoid absenteeism SA21. Act objectively , rather than impulsively or emotionally when faced with difficult/stressful or emotional situations SA22. Work in disciplined factory environment SA23. Be punctual

NOS Version Control

NOS Code	ISC/N1006		
Credits(NSQF)	TBD	Version number	1.0
Industry	Iron and steel	Drafted on	23/07/2014
Industry Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory	Last reviewed on	30/12/2014
Occupation	Electrical Maintenance	Next review date	30/12/2015



National Occupational Standards

Overview

This unit is about problem identification and escalation

National Occupational Standard

Unit Code	ISC/N1007
Unit Title (Task)	Carry out problem identification and escalation
Description	This unit is about problem identification and escalation

Scope	This unit/task covers the following:
	• Identify problems across:
	  • Materials
	  • Products
	  • Equipment
	  • Others
	• Take corrective action
	• Escalation of unresolved identified problems

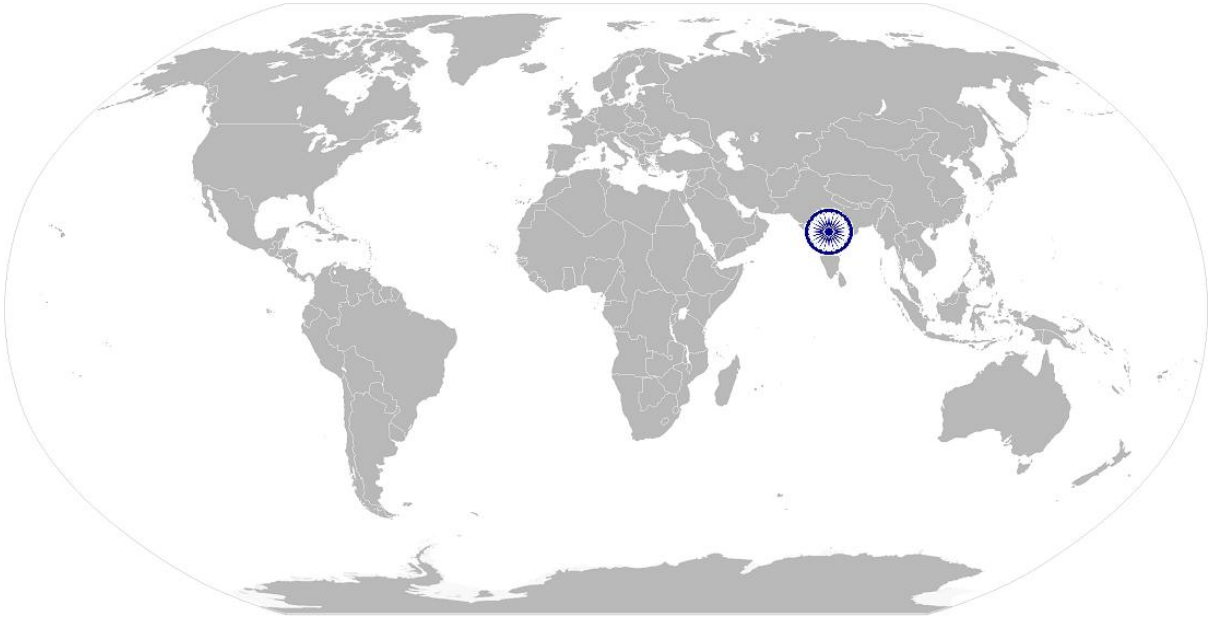
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Problem Identification	To be competent, the user/individual on the job must be able to: PC1. Identify defects/indicators of problems PC2. Identify any wrong practices that may lead to problems PC3. Identify practices that may impact the final product quality PC4. Identify if the problem has occurred before PC5. Identify other operations that might be impacted by the problem PC6. Ensure that no delays are caused as a result of failure to escalate problems
Necessary Action	To be competent, the user/individual on the job must be able to: PC7. Take appropriate materials and sample to conduct tests PC8. Evaluate results to confirm suspected reasons for non-conformance (where required) PC9. Consider possible reasons for identification of problems PC10. Consider applicable corrections and formulate corrective action PC11. Formulate action in a timely manner PC12. Communicate problem/remedial action to appropriate parties PC13. Take corrective action in a timely manner PC14. Report/document problem and corrective action in an appropriate manner PC15. Monitor corrective action PC16. Evaluate implementation of corrective action taken to determine if the problem has been resolved PC17. Ensure that corrective action selected is viable and practical PC18. Ensure that correct solution is identified to an identified problem PC19. Take corrective action for problems identified according to the company procedures PC20. Ensure that no delays are caused as a result of failure to take necessary action

Problem Escalation	To be competent, the user/individual on the job must be able to: PC21. Escalate problem as per laid down escalation matrix PC22. Escalate the problem within stipulated time PC23. Escalate the problem in an appropriate manner PC24. Ensure that no delays are caused as a result of failure to escalate problems
Element	**Knowledge and Understanding**
A. Technical Knowledge	The user/individual on the job needs to know and understand: KA1. Indicators of problems KA2. The working of the equipment and accessories(if applicable) KA3. The impact of operations on the user and equipment(if applicable) KA4. The impact of operations on the final product (if applicable) KA5. The effect of not rectifying the problems identified KA6. The reason for the occurrence of previous problems KA7. Measures and steps that have been taken to address the previous problems KA8. Possible solutions for various problems KA9. The correct method for carrying out corrective actions outlined for each problem KA10. The impact of not carrying out the corrective actions KA11. The documentation procedure for recording such problems, as per company norms KA12. The escalation matrix for reporting problems KA13. Escalation matrix for reporting unresolved problems KA14. The time frame within which in which each problem needs to be escalated KA15. Manner in which each problem needs to be escalated
Skills (S) w.r.t. the scope	
Element	**Skills**
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. Construct simple sentences and express ideas clearly through written communication SA2. Fill up appropriate technical forms, process charts, activity logs in required format of the company SA3. Write simple letters, mails, etc. SA4. Perform functional mathematical operations, including apply basic mathematical principles, such as numbers and space, and techniques such as estimation and approximation, for practical purposes
	Reading and Understanding Skills
	The user/individual on the job needs to know and understand how to: SA5. Read and understand manuals, health and safety instructions, memos, reports,

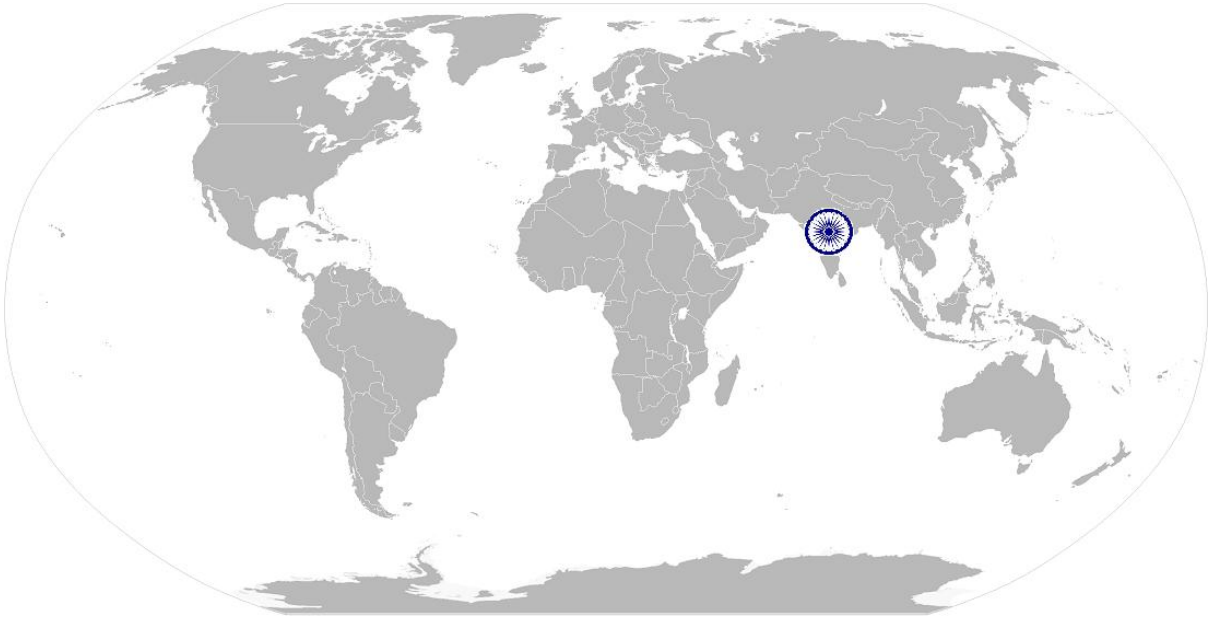
	job cards etc. SA6. Read and interpret engineering and tool drawings
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA7. Express statements, opinions or information clearly so that others can hear and understand SA8. Respond appropriately to any queries SA9. Communicate with supervisor SA10. Communicate with upstream and downstream teams SA11. Work in a team and other behavioural skills required to support the small group activities (Quality Circle, Cross Functional Team, Suggestion Scheme)
	Integrity
	The user/individual on the job needs to know and understand how to: SA12. Practice honesty with respect to company property and time SA13. Communicate with people in a form and manner and using language that is open and respectful SA14. Resolve any difficulties in relationships with colleagues , or get help from an appropriate person, in a way that preserves goodwill and trust
	Motivation
	The user/individual on the job needs to know and understand how to: SA15. Take responsibility for completing one's own work assignment SA16. Take initiative to enhance/learn skills in others area of work SA17. The capacity to learn from experience in a range of settings and scenarios and the capacity to reflect on and analyse one's learning. SA18. Is open to new ways of doing things SA19. The capacity to envisage and articulate personal goals; to develop strategies and take action to achieve them.
	Reliability
	The user/individual on the job needs to know and understand how to: SA20. Avoid absenteeism SA21. Act objectively , rather than impulsively or emotionally when faced with difficult/stressful or emotional situations SA22. Work in disciplined factory environment SA23. Be punctual

NOS Version Control

NOS Code	ISC/N1007		
Credits(NSQF)	TBD	Version number	1.0
Industry	Iron and steel	Drafted on	23/07/2014
Industry Sub-sector	Steel, Sponge Iron, Ferro Alloys, Re-Rollers, Refractory	Last reviewed on	30/12/2014
Occupation	Electrical Maintenance	Next review date	30/12/2015



National Occupational Standards



Overview

This unit covers health, safety and security at the workplace. This includes procedures and practices that candidates need to follow to help maintain a healthy, safe and secure work environment.

National Occupational Standard

Unit Code	ISC/N0008
Unit Title (Task)	Use basic health and safety practices at the workplace
Description	This OS unit is about knowledge and practices relating to health, safety and security that candidates need to use in the workplace. It covers responsibilities towards self, others, assets and the environment. It includes understanding of risks and hazards in the workplace, along with common techniques to minimize risk, deal with accidents, emergencies, etc.
Scope	This unit/task covers the following: • Health and safety procedures • Fire safety procedures • Emergencies, rescue and first aid procedures

Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Health and safety procedures	The user/individual on the job should be able to: PC1. Use protective clothing/equipment for specific tasks and work conditions Protective clothing includes: • Leather or asbestos gloves • Flame proof aprons • Flame proof overalls buttoned to neck • Cuff less (without folds) trousers • Reinforced footwear • Helmets/hard hats • Cap and shoulder covers • Ear defenders/plugs • Safety boots • Knee pads • Particle masks • Glasses/gloves/visors Equipment includes: • Hand shields • Machine guards • Residual current devices • Shields • Dust sheets • Respirator PC2. State the name and location of people responsible for health and safety in the workplace

Various areas are listed below:

- On chemical containers
- Equipment
- Packages
- Inside buildings
- Open areas and public spaces, etc.

PC3. State the names and location of documents that refer to health and safety in the workplace

PC4. Identify job-site hazardous work and state possible causes of risk or accident in the workplace

Hazards include:

- Working with electrical and thermal tools and equipment
- Sharp edged and heavy tools
- Heated metals
- Oxyfuel and gas cylinders
- Welding radiation
- Surfaces: sharp, slippery, uneven, chipped, broken, etc.
- Substances: chemicals, gas, oxy-fuel, fumes, dust, etc.
- Physical: working at heights, large and heavy objects and machines, sharp and piercing objects, tolls and machines, intense light, load noise, obstructions in corridors, by doors, blind turns, noise, over stacked shelves and packages, etc.
- Electrical: power supply and points, loose and naked cables and wires, electrical machines and appliances, etc.

PC5. Carry out safe working practices while dealing with hazards to ensure the safety of self and others state methods of accident prevention in the work environment of the job role

Safe working practices include:

- Using protective clothing and equipment
- Putting up and reading safety signs
- Handle tools in the correct manner and store and maintain them properly
- Keep work area clear of clutter, spillage and unsafe object lying casually
- While working with electricity take all electrical precautions like insulated clothing, adequate equipment insulation, use of control equipment, dry work area, switch off the power supply when not required, etc.
- Safe lifting and carrying practices
- Use equipment that is working properly and is well maintained
- Take due measures for safety while working in confined places, trenches or at heights, etc. Including safety harness, fall arrestors, etc.

Methods are:

- Training in health and safety procedures
- Using health and safety procedures
- Use of equipment and working practices (such as safe carrying procedures)
- Safety notices, advice
- Instruction from colleagues and supervisors

	PC6. State location of general health and safety equipment in the workplace PC7. Inspect for faults, set up and safely use steps and ladders in general use Faults : • Corrosion of metal components • Deterioration • Splits and cracks timber components • Imbalance • Loose rungs • Nuts or bolts, etc. Set up: • Firm/level base • Clip/lash down • Leaning at the correct angle, etc. PC8. Work safely in and around trenches, elevated places and confined areas PC9. Lift heavy objects safely using correct procedures PC10. Apply good housekeeping practices at all times. Good housekeeping practices: • Clean/tidy work areas • Removal/disposal of waste products • Protect surfaces PC11. Identify common hazard signs displayed in various areas PC12. Retrieve and/or point out documents that refer to health and safety in the workplace
Fire safety procedures	The user/individual on the job should be able to: PC13. Use the various appropriate fire extinguishers on different types of fires correctly. Fire extinguishers: • Sand • Water • Foam • Co2 • Dry powder Fires: • Class A: Ordinary solid combustibles, e.g. wood, paper, cloth, plastic, charcoal etc. • Class B: Flammable liquids and gases, e.g. gasoline, propane, diesel fuel, tar, cooking oil and similar substances • Class C: Electrical equipment e.g. appliances, wiring, breaker panels etc. (these categories of fires become Class A, B, and D fires when the electrical equipment that initiated the fire is no longer receiving electricity) • Class D: Combustible metals such as magnesium, titanium, and sodium (these fires burn at extremely high temperatures and require special suppression agents) Causes of fires: • Heating of metal

	• Spontaneous ignition • Sparking, • Electrical heating • Loose fires (e.g. Smoking, welding, etc.) • Chemical fires, etc. PC14. Demonstrate rescue techniques applied during fire hazard PC15. Demonstrate good housekeeping in order to prevent fire hazards PC16. Demonstrate the correct use of a fire extinguisher
Emergencies, rescue and first-aid procedures	The user/individual on the job should be able to: PC17. Demonstrate how to free a person from electrocution PC18. Administer appropriate first aid to victims as required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc. PC19. Demonstrate basic techniques of bandaging PC20. Respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments. few General health and safety equipment are mentioned below : • Fire extinguishers • First aid equipment • Safety instruments and clothing • Safety installations, e.g. Fire exits, exhaust fans etc. PC21. Perform and organize loss minimization or rescue activity during an accident in real or simulated environments PC22. Administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases PC23. Demonstrate the artificial respiration and the CPR Process PC24. Participate in emergency procedures. Emergency procedures are: • Raising alarm • Safe/efficient evacuation • Correct means of escape • Correct assembly point • Roll call • Correct return to work PC25. Complete a written accident/incident report or dictate a report to another person, and send report to person responsible Incident Report should capture: • Name • Date/time of incident • Date/time of report, • Location • Environment conditions • Persons involved • Sequence of events • Injuries sustained • Damage sustained • Actions taken • Witnesses

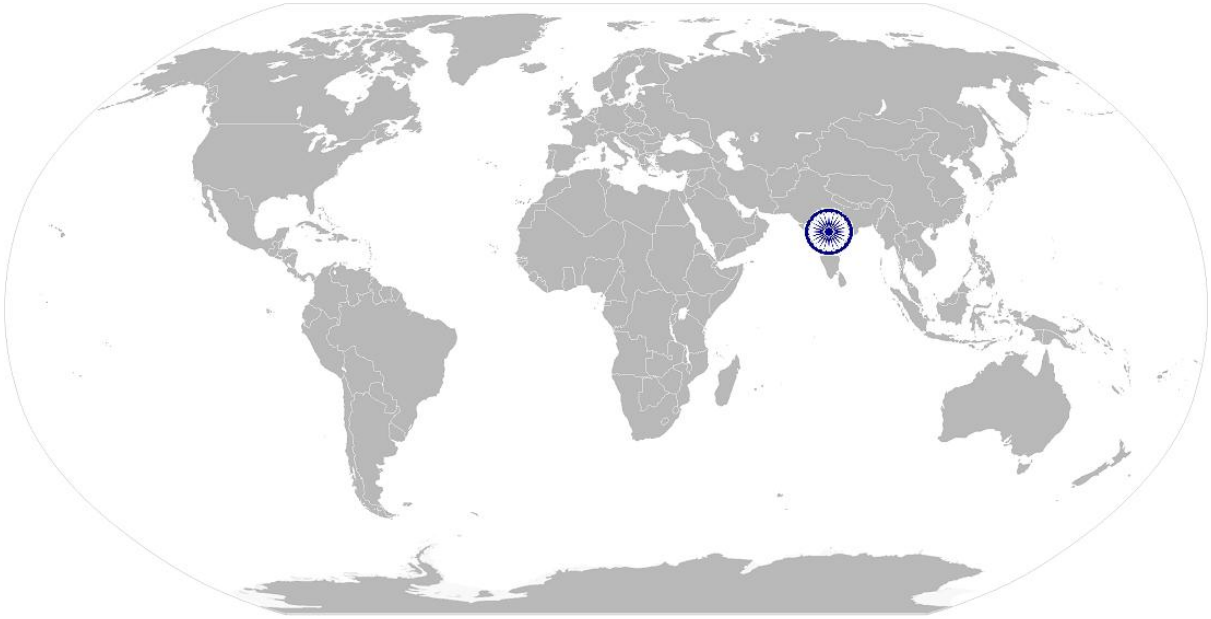
	• Supervisor/manager notified Documents: • Fire notices • Accident reports • Safety instructions for equipment and procedures • Company notices and documents • Legal documents (e.g. Government notices) Job titles: • Health and safety officer • First aid officer • Fire officer PC26. Demonstrate correct method to move injured people and others during an emergency
Element	**Knowledge and Understanding**
A. Organisational Context (Knowledge of the Company/ Organisation and its processes)	The user/individual on the job needs to know and understand: KA1. State the names (and job titles if applicable), and describe where to find, all the people responsible for health and safety in a workplace KA2. State the names and location of documents that refer to health and safety in the workplace
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB3. Meaning of "hazards" and "risks" KB4. Health and safety hazards commonly present in the work environment and related precautions KB5. Possible causes of risk, hazard or accident in the workplace and why risk and/or accidents are possible KB6. Activities and causes of risk and accident KB7. Methods of accident prevention KB8. Safe working practices when working with tools and machines KB9. Safe working practices while working at various hazardous sites KB10. Where to find all the general health and safety equipment in the workplace KB11. Various dangers associated with the use of electrical equipment KB12. Preventative and remedial actions to be taken in the case of exposure to toxic materials. • Exposure: ingested, contact with skin, inhaled • Preventative action: ventilation, masks, protective clothing/equipment • Remedial action: immediate first aid, report to supervisor • Materials: solvents, flux, lead KB13. Importance of using protective clothing/equipment while working KB14. Precautionary activities to prevent the fire accident Activities and causes: • Physical actions • Reading • Listening to and giving instructions

	• Inattention • Sickness and incapacity (e.g. Drunkenness) • Health hazards (e.g. Untreated injuries and contagious illness) KB15. Various causes of fire KB16. Techniques of using the different fire extinguishers KB17. Different methods of extinguishing fire KB18. Rescue techniques applied during a fire hazard KB19. Various types of safety signs and what they mean KB20. Appropriate basic first aid treatment relevant to the condition e.g. Shock, electrical shock, bleeding, breaks to bones, minor burns, resuscitation, poisoning, eye injuries KB21. Content of written accident report KB22. Potential injuries and ill health associated with incorrect manual handing KB23. Safe lifting and carrying practices KB24. Personal safety, health and dignity issues relating to the movement of a person by others KB25. Potential impact to a person who is moved incorrectly
Skills (S) w.r.t. the scope	
Element	Skills
A. Core Skills/ Generic Skills	Reading and Writing Skills
	The user/individual on the job needs to know and understand how to: SA1. Read and comprehend basic content to read labels, charts, signage's SA2. Read and comprehend basic English to read manuals of operations SA3. Read and write an accident/incident report in local language or English
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA4. Question co-workers appropriately in order to clarify instructions and other issues SA5. Give clear instructions to co-workers, subordinates others
	Decision Making
	The user/individual on the job needs to know and understand how to: SA6. Make appropriate decisions pertaining to the concerned area of work with respect to intended work objective, span of authority, responsibility, laid down procedure and guidelines
B. Professional Skills	Plan and Organize
	The user/individual on the job needs to know and understand: SB1. Plan and organize their own work schedule, work area, tools, equipment and materials to maintain decorum and for improved productivity

	Working with others
	The user/individual on the job needs to know and understand how to: SB2. Remain congenial while discussing and debating issues with co-workers SB3. Follow appropriate protocols for communication based on situation, hierarchy, organizational culture and practice SB4. Ask for, provide and receive required assistance where possible to ensure achievement of work related objectives SB5. Thank co-workers for any assistance received SB6. Offer appropriate respect based on mutuality and respect for fellow workmanship and authority
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB7. Think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s) SB8. Identify immediate or temporary solutions to resolve delays SB9. Identify sources of support that can be availed of for problem solving for various kind of problems SB10. Seek appropriate assistance from other sources to resolve problems SB11. Report problems that you cannot resolve to appropriate authority
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB12. Identify cause and effect relations in their area of work SB13. Use cause and effect relations to anticipate potential problems and their solution

NOS Version Control

NOS Code	ISC/N0008		
Credits(NSQF)	TBD	Version number	1.0
Industry	Iron and steel	Drafted on	23/07/2014
Industry Sub-sector	All Departments	Last reviewed on	30/12/2014
Occupation	Electrical Maintenance	Next review date	30/12/2015



National Occupational Standards

Overview

This unit covers basic practices that improve effectiveness of working with others in an organisational set-up.

National Occupational Standard

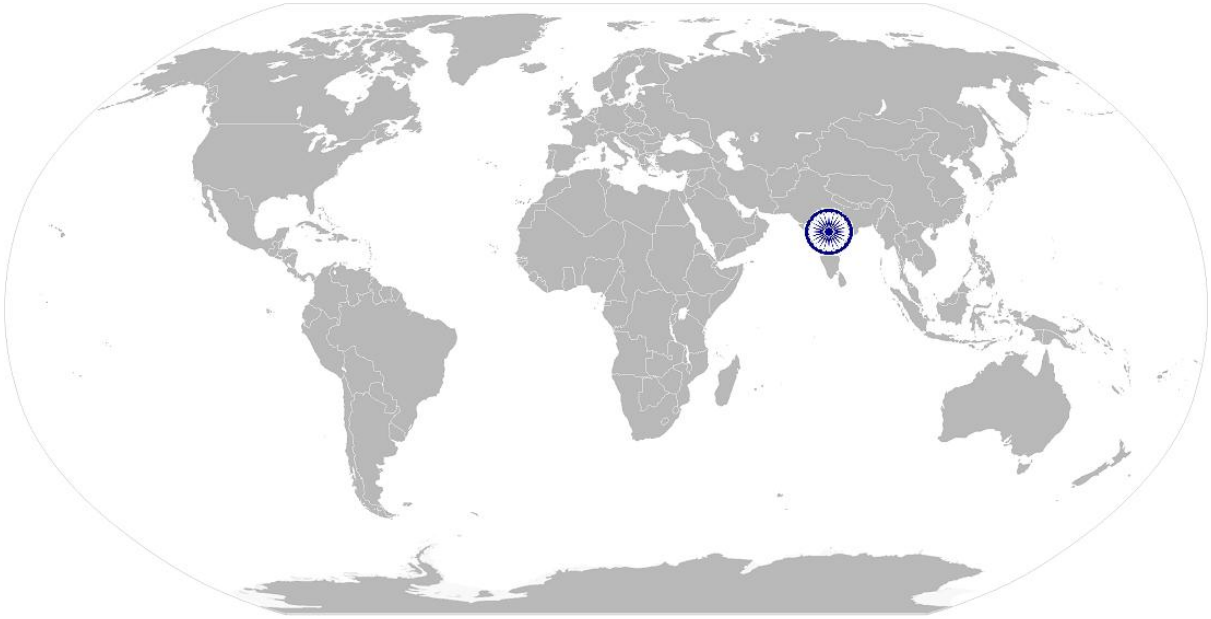
Unit Code	ISC/N0009
Unit Title (Task)	Works effectively with others
Description	This unit covers basic etiquette and competencies that a candidate is required to possess and demonstrate in their behaviour and interactions with others at the workplace.
Scope	This unit/task covers the following: • Ensure appropriate communication with superiors, peers and others as applicable at work place • Demonstrate appropriate behaviour and etiquette at work place
Performance Criteria (PC) w.r.t. the Scope	
Element	**Performance Criteria**
Ensure appropriate communication with superiors, peers and others as applicable at work place	The user/individual on the job should be able to: PC1. Accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required PC2. Accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt PC3. Provide information to others clearly, at a pace and in a manner that helps them to understand
Demonstrate appropriate behaviour and etiquette at work place	The user/individual on the job should be able to: PC4. Display helpful behaviour by assisting others in performing tasks in a positive manner, where required and possible PC5. Consult with and assist others to maximize effectiveness and efficiency in carrying out tasks PC6. Display appropriate communication etiquette while working PC7. Display active listening skills while interacting with others at work PC8. Use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism PC9. Demonstrate responsible and disciplined behaviours at the workplace PC10. Escalate grievances and problems to
Element	**Knowledge and Understanding**
A. Organisational Context (Knowledge of the Company/ Organisation and its processes)	The user/individual on the job needs to know and understand: KA1. Legislation, standards, policies, and procedures followed in the company relevant to own employment and performance conditions KA2. Reporting structure, inter-dependent functions, lines and procedures in the work area KA3. Relevant people and their responsibilities within the work area KA4. Escalation matrix and procedures for reporting work and employment related issues

B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. Various categories of people that one is required to communicate and co-ordinate with in the organization KB2. Importance of effective communication in the workplace KB3. Importance of teamwork in organizational and individual success KB4. Various components of effective communication KB5. Key elements of active listening KB6. Value and importance of active listening and assertive communication KB7. Barriers to effective communication KB8. Importance of tone and pitch in effective communication KB9. Importance of avoiding casual expletives and unpleasant terms while communicating professional circles KB10. How poor communication practices can disturb people, environment and cause problems for the employee, the employer and the customer KB11. Importance of ethics for professional success KB12. Importance of discipline for professional success KB13. What constitutes disciplined behaviour for a working professional KB14. Common reasons for interpersonal conflict KB15. Importance of developing effective working relationships for professional success KB16. Expressing and addressing grievances appropriately and effectively KB17. Importance and ways of managing interpersonal conflict effectively
Skills (S) w.r.t. the scope	
Element	Skills
A. Core Skills/ Generic Skills	Reading and Writing Skills
	The user/individual on the job needs to know and understand how to: SA1. Read and comprehend basic content to read labels, charts, signage's SA2. Read and comprehend basic English to read manuals of operations SA3. Read and write an accident/incident report in local language or English
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA4. Question co-workers appropriately in order to clarify instructions and other issues SA5. Provide clear instructions to co-workers, subordinates others
	Decision Making
	The user/individual on the job needs to know and understand how to: SA6. Make appropriate decisions pertaining to the concerned area of work with respect to intended work objective, span of authority, responsibility, laid down

	procedure and guidelines
B. Professional Skills	Plan and Organize
	The user/individual on the job needs to know and understand: SB1. Plan and organize their own work schedule, work area, tools, equipment and materials to maintain decorum and for improved productivity
	Working with others
	The user/individual on the job needs to know and understand how to: SB2. Remain congenial while discussing and debating issues with co-workers SB3. Follow appropriate protocols for communication based on situation, hierarchy, organizational culture and practice SB4. Ask for, provide and receive required assistance where possible to ensure achievement of work related objectives SB5. Thank co-workers for any assistance received SB6. Offer appropriate respect based on mutuality and respect for fellow workmanship and authority
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB7. Think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s) SB8. Identify immediate or temporary solutions to resolve delays SB9. Identify sources of support that can be availed of for problem solving for various kind of problems SB10. Seek appropriate assistance from other sources to resolve problems SB11. Report problems that you cannot resolve to appropriate authority
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB12. Identify cause and effect relations in their area of work SB13. Use cause and effect relations to anticipate potential problems and their solution

NOS Version Control

NOS Code	ISC/N0009		
Credits(NSQF)	TBD	Version number	1.0
Industry	Iron and steel	Drafted on	23/07/2014
Industry Sub-sector	All Departments	Last reviewed on	30/12/2014
Occupation	Electrical Maintenance	Next review date	30/12/2015



CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role: Iron & Steel – Fitter: Electrical Assembly
Qualification Pack: ISC/Q1001
Sector Skill Council: Indian Iron & Steel Sector Skill Council

Guidelines for Assessment:

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
4. Individual assessment agencies will create unique evaulations for skill practical for every student at each examination/training center based on this criteria.
5. To pass the Qualification Pack , every trainee should score a minimum of 60% in every NOS.
6. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.

				Marks Allocated	
NOSs	PCs	Total Marks 1000	Out Of	Theory	Practical
ISC/N1001: Prepare for assembling operations	PC1. Understand assembly blueprints, engineering drawings and other specifications to identify the sequence of activities required to assemble the machine	150	10	5	5
	PC2. Read and interpret engineering drawings to ensure correct limits, tolerance and fits of equipment components		10	5	5
	PC3. Report and rectify cases of inappropriate information in design documents as per organizational procedures		7	3	4

PC4. Identify tools and equipment required to perform the assembling of Components		5	2	3
PC5. Collect tools required during the assembling process		4	0	4
PC6. Ensure that tools match the desired specifications		5	2	3
PC7. Ensure tools and equipment required for assembly are free from physical damage and ready for operation		5	2	3
PC8. Report damaged / defective components of equipment as per the escalation matrix		8	2	6
PC9. Ensure the calibration status of all measuring equipment and instruments		8	2	6
PC10. Prepare the foundation base as per the job requirements i.e. cleaning using hand files, scraper etc.		10	4	6
PC11. Use braces, jacks, clamps, ropes or bolt straps to hold parts in position		5	2	3
PC12. Collect work pieces/ components to be assembled		4	2	2
PC13. Ensure that each material is in the correct quantity		4	2	2
PC14. Ensure, by visual inspection, that work pieces are of desired quality (free of rust, type of metal, etc.)		8	2	6
PC15. Ensure that paint, grease, rust, or other contaminants are removed from work pieces		4	2	2
PC16. Smoothen out the metal work piece prior to assembling		8	2	6
PC17. Ensure that no delays are caused as a result of improper preparation and failure to identify problems		4	2	2
PC18. Ensure housekeeping and safety in work area		4	0	4
PC19. Ensure that the exhaust systems are used to maintain the concentration levels of various particulate matters remain within limits		4	0	4

	PC20. Ensure use of mask during grinding to avoid inhaling the dust		4	0	4
	PC21. Ensure that the loose and torn clothes are not worn during working hours		4	0	4
	PC22. Ensure using hoist or forklift for lifting heavy materials to avoid physical injury		5	2	3
	PC23. Adhere to all other safety norms (like wearing shoes, gloves, safety goggles etc)		5	2	3
	PC24. Ensure that unpermitted materials such as fuels, paints etc are removed from the work area		5	2	3
	PC25. Comply with health, safety, environment guidelines, regulations etc in accordance with organizational SOP		5	2	3
	PC26. Identify any potential health hazards or dangers and escalate to supervisor as per organizational SOP		5	2	3
		Total	150	51	99
ISC/N1002: Assemble the electrical components	PC1. Ensure all tools and equipment required during assembly are ready for operation	150	8	2	6
	PC2. Ensure the calibration status of all measuring equipment and instruments		8	4	4
	PC3. Prepare control cables, electrical components like MCB's, Contactors, Relays etc. as per drawing requirement		20	5	15
	PC4. Lift and move components using handling equipment such as hoist or crane or manual methods		8	2	6
	PC5. Use file, chisel and grind parts to align or level the components to be assembled as per the design/ manufacturers' specifications		10	0	10
	PC6. Demonstrate use of machinery such as insulation testers, multimeters, etc knife to cut or bore holes in the structure		10	0	10

	PC7. Demonstrate use of tools such as saws, cutting torches, pipe threaders or benders to cut, thread or bend parts as per the specifications		14	4	10
	PC8. Fasten mechanical components/ subassemblies together using screws, bolts, and collars using hand/ power tools		11	4	7
	PC9. Set and adjust linkages, tensions and clearances of assembled components to specifications using fixed gauges and hand tools		11	4	7
	PC10. Use of wires, stripers, cripping tools and other insulated tools		5	2	3
	PC11. Ensure housekeeping and safety in work area		5	2	3
	PC12. Ensure that the exhaust systems are used to maintain the concentration levels of various particulate matters remain within limits		5	2	3
	PC13. Ensure use of mask during grinding to avoid inhaling the dust		5	2	3
	PC14. Ensure that the loose and torn clothes are not worn during working hours		5	2	3
	PC15. Ensure using hoist or forklift for lifting heavy materials to avoid physical injury		5	2	3
	PC16. Adhere to all other safety norms (like wearing electrical safety shoes, gloves, safety goggles etc.)		5	2	3
	PC17. Comply with health, safety, environment guidelines, regulations etc in accordance with organizational SOP		5	2	3
	PC18. Identify any potential health hazards or dangers and escalate to supervisor as per organizational SOP		5	2	3
	PC 19. Ensure use of insulated hand gloves and electrical safety shoes		5	2	3
		Total	150	45	105

ISC/N1003: Perform post - assembly activities	PC1. Connect the hydraulic, electrical and other components of the machine/electrical panels	100	10	3	7
	PC2. Add lubricants and coolants into moving parts as per specifications		10	3	7
	PC3. Carry out functional test of assembled machine/electrical panels to ensure it performs as per desired performance criteria		10	3	7
	PC4. Identify and rectify the problem areas during the functional tests		10	3	7
	PC5. Check the panel interlock and protection logic		10	3	7
	PC6. Dispose-off waste material as per waste disposal procedures laid down by the company		5	2	3
	PC7. Carry out disposal of waste material safely		4	2	2
	PC8. Ensure housekeeping and safety in work area		4	0	4
	PC9. Ensure that the exhaust systems are used to maintain the concentration levels of various particulate matters remain within limits		4	0	4
	PC10. Ensure that the loose and torn clothes are not worn during working hours		4	0	4
	PC11. Ensure using hoist or forklift for lifting heavy materials to avoid physical injury		4	0	4
	PC12. Adhere to all other safety norms (like wearing electrical shoes, gloves, safety goggles etc)		4	0	4
	PC13. Remove unpermitted materials such as fuels, paints etc from the work area		6	2	4
	PC14. Comply with health, safety, environment guidelines, regulations etc in		5	2	3
	accordance with organizational SOP		5	2	3

	PC15. Identify any potential health hazards or dangers and escalate to supervisor as per organizational SOP		5	2	3
		Total	100	27	73
ISC/N1004: Carry out housekeeping	PC1. Inspect the area while taking into account various surfaces	50	2	1	1
	PC2. Identify the material requirements for cleaning the areas inspected, by considering risk, time, efficiency and type of stain		2	1	1
	PC3. Ensure that the cleaning equipment is in proper working condition		2	1	1
	PC4. Select the suitable alternatives for cleaning the areas in case the appropriate equipment and materials are not available and inform the appropriate person		2	1	1
	PC5. Plan the sequence for cleaning the area to avoid re-soiling clean areas and surfaces		2	1	1
	PC6. Inform the affected people about the cleaning activity		2	1	1
	PC7. Display the appropriate signage for the work being conducted		2	1	1
	PC8. Ensure that there is adequate ventilation for the work being carried out		3	1	2
	PC9. Wear the personal protective equipment required for the cleaning method and materials being used		3	1	2
	PC10. Use the correct cleaning method for the work area, type of soiling and surface		2	1	1
	PC11. Carry out cleaning activity without disturbing others		2	1	1
	PC12. Deal with accidental damage, if any, caused while carrying out the work		2	1	1
	PC13. Report to the appropriate person any difficulties in carrying out your work		2	1	1

	PC14. Identify and report to the appropriate person any additional cleaning required that is outside one's responsibility or skill		2	1	1
	PC15. Ensure that there is no oily substance on the floor to avoid slippage		2	1	1
	PC16. Ensure that no scrap material is lying around		2	1	1
	PC17. Maintain and store housekeeping equipment and supplies		4	1	3
	PC18. Follow workplace procedures to deal with any accidental damage caused during the cleaning process		4	1	3
	PC19. Ensure that, on completion of the work, the area is left clean and dry and meets requirements		2	1	1
	PC20. Return the equipment, materials and personal protective equipment that were used to the right places making sure they are clean, safe and securely stored		2	1	1
	PC21. Dispose the waste garnered from the activity in an appropriate manner		2	1	1
	PC22. Dispose of used and un-used solutions according to manufacturer's instructions, and clean the equipment thoroughly		2	1	1
		Total	**50**	**22**	**28**
ISC/N1005: Carry out reporting and documentation	PC1. Report data/problems/incidents as applicable in a timely manner	50	5	2	3
	PC2. Report to the appropriate authority as laid down by the company		5	2	3
	PC3. Follow reporting procedures as prescribed by the company		5	2	3
	PC4. Identify documentation to be completed relating to one's role		5	2	3
	PC5. Record details accurately an appropriate format		5	2	3
	PC6. Complete all documentation within stipulated time according to company procedure		5	2	3

	PC7. Ensure that the final document meets with the requirements of the persons who requested it or make any amendments accordingly		5	2	3
	PC8. Make sure documents are available to all appropriate authorities to inspect		5	2	3
	PC9. Respond to requests for information in an appropriate manner whilst following organizational procedures		5	2	3
	PC10. Inform the appropriate authority of requests for information received		5	2	3
		Total	50	20	30
ISC/N1006: Carry out quality checks	PC1. Ensure that total range of checks are regularly and consistently performed	150	8	3	5
	PC2. Use appropriate measuring instruments, equipment, tools, accessories etc ,as required		8	3	5
	PC3. Identify non-conformities to quality assurance standards		10	5	5
	PC4. Identify potential causes of non-conformities to quality assurance standards		16	6	10
	PC5. Identify impact on final product due to non-conformance to company standards		16	6	10
	PC6. Evaluating the need for action to ensure that problems do not recur		14	6	8
	PC7. Suggest corrective action to address problem		14	6	8
	PC8. Review effectiveness of corrective action		10	5	5
	PC9. Interpret the results of the operator level quality check correctly		10	5	5
	PC10. Inform any non-conformity to the appropriate authority within the stipulated time		5	2	3
	PC11. Record of results of action taken		10	5	5
	PC12. Record adjustments not covered by established procedures for future reference		10	5	5

	PC13. Review effectiveness of action taken		10	5	5
	PC14. Follow reporting procedures where the cause of defect cannot be identified		9	6	3
		Total	150	68	82
ISC/N1007: Carry out problem identification and escalation	PC1. Identify defects/indicators of problems	100	3	0	3
	PC2. Identify any wrong practices that may lead to problems		3	0	3
	PC3. Identify practices that may impact the final product quality		3	0	3
	PC4. Identify if the problem has occurred before		2	0	2
	PC5. Identify other operations that might be impacted by the problem		2	0	2
	PC6. Ensure that no delays are caused as a result of failure to escalate problems		3	0	3
	PC7. Take appropriate materials and sample to conduct tests		7	2	5
	PC8. Evaluate results to confirm suspected reasons for non-conformance (where required)		5	2	3
	PC9. Consider possible reasons for identification of problems		4	2	2
	PC10. Consider applicable corrections and formulate corrective action		5	2	3
	PC11. Formulate action in a timely manner		5	2	3
	PC12. Communicate problem/remedial action to appropriate parties		4	2	2
	PC13. Take corrective action in a timely manner		4	2	2
	PC14. Report/document problem and corrective action in an appropriate manner		4	2	2
	PC15. Monitor corrective action		5	2	3
	PC16. Evaluate implementation of corrective action taken to determine if the problem has been resolved		4	2	2
	PC17. Ensure that corrective action selected is viable and practical		5	2	3

	PC18. Ensure that correct solution is identified to an identified problem		4	2	2
	PC19. Take corrective action for problems identified according to the company procedures		5	2	3
	PC20. Ensure that no delays are caused as a result of failure to take necessary action		5	2	3
	PC21. Escalate problem as per laid down escalation matrix		4	2	2
	PC22. Escalate the problem within stipulated time		4	2	2
	PC23. Escalate the problem in an appropriate manner		5	2	3
	PC24. Ensure that no delays are caused as a result of failure to escalate problems		5	2	3
		Total	100	36	64
ISC/N0008: Use basic health and safety practices at the workplace	PC1. Use protective clothing/equipment for specific tasks and work conditions	150	9	4	5
	PC2. State the name and location of people responsible for health and safety in the workplace		6	1	5
	PC3. State the names and location of documents that refer to health and safety in the workplace		2	1	1
	PC4. Identify job-site hazardous work and state possible causes of risk or accident in the workplace		8	4	4
	PC5. Carry out safe working practices while dealing with hazards to ensure the safety of self and others state methods of accident prevention in the work environment of the job role		6	1	5
	PC6. State location of general health and safety equipment in the workplace		6	1	5
	PC7. Inspect for faults, set up and safely use steps and ladders in general use		6	1	5
	PC8. Work safely in and around trenches, elevated places and confined areas		6	1	5
	PC9. Lift heavy objects safely using correct procedures		6	1	5

	PC10. Apply good housekeeping practices at all times		2	1	1
	PC11. Identify common hazard signs displayed in various areas		6	5	1
	PC12. Retrieve and/or point out documents that refer to health and safety in the workplace		5	1	4
	PC13. Use the various appropriate fire extinguishers on different types of fires correctly		9	4	5
	PC14. Demonstrate rescue techniques applied during fire hazard		8	4	4
	PC15. Demonstrate good housekeeping in order to prevent fire hazards		2	1	1
	PC16. Demonstrate the correct use of a fire extinguisher		6	1	5
	PC17. Demonstrate how to free a person from electrocution		6	1	5
	PC18. Administer appropriate first aid to victims as required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc.		8	3	5
	PC19. Demonstrate basic techniques of bandaging		6	1	5
	PC20. Respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments		7	2	5
	PC21. Perform and organize loss minimization or rescue activity during an accident in real or simulated environments		6	1	5
	PC22. Administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases		6	1	5
	PC23. Demonstrate the artificial respiration and the CPR Process		6	1	5
	PC24. Participate in emergency procedures		6	1	5

	PC25. Complete a written accident/incident report or dictate a report to another person, and send report to person responsible		4	1	3
	PC26. Demonstrate correct method to move injured people and others during an emergency		2	1	1
		Total	150	45	105
ISC/N0009: Works effectively with others	PC1. Accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required	100	10	5	5
	PC2. Accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt		10	5	5
	PC3. Provide information to others clearly, at a pace and in a manner that helps them to understand		10	0	10
	PC4. Display helpful behaviour by assisting others in performing tasks in a positive manner, where required and possible		10	5	5
	PC5. Consult with and assist others to maximize effectiveness and efficiency in carrying out tasks		10	5	5
	PC6. Display appropriate communication etiquette while working		10	0	10
	PC7. Display active listening skills while interacting with others at work		10	0	10
	PC8. Use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism		10	5	5
	PC9. Demonstrate responsible and disciplined behaviours at the workplace		15	5	10
	PC10. Escalate grievances and problems to		5	0	5
		Total	100	30	70

SSC	QP Code	Name of the QP	NSQF Level	Equipment Name	Minimum number of Equipment required (per batch of 30 trainees)	Unit Type	Is this a mandatory Equipment to be available at the Training Center (Yes/No)	Dimension/Specification/Description of the Equipment/ ANY OTHER REMARK
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Steel Tape, 15 m length	17	nos	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Plier Insulated, 150 mm	17	nos	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Plier Side Cutting, 150 mm	17	nos	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Screw Driver, 100 mm	17	nos	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Electrician Connector, screw driver insulated handle thin stem, 100 mm	17	nos	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Electrician Screw Driver thin stem insulated handle, 250 mm	17	nos	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Punch Centre , 150 mm X 9 mm	17	nos	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Knife Double Bladed Electrician	17	nos	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Neon Tester	17	nos	Yes	

Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Steel Rule 300 mm	17	nos	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Hammer, cross peen with handle	17	nos	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Hammer, ball peen With handle	17	nos	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Scriber (Knurled centre position)	17	nos	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Pincer 150 mm	17	nos	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	C- Clamp 200 mm, 150 mm and 100 mm	2	nos each	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Spanner Adjustable 150 mm,300mm	2	nos each	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Chisel Cold firmer 25 mm X 200 mm	2	nos	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Chisel 25 mm and 6 mm	2	nos each	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Hand Drill Machine	1	nos	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Portable Electric Drill Machine 6 mm capacity	1	nos	NO	

Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Pillar Electric Drill Machine 12 mm capacity	1	nos	No	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Allen Key	1	set	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Grease Gun	1	nos	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Out Side Micrometer	2	nos	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Motorised Bench Grinder	1	nos	NO	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Rawl plug tool and bit	2	set	Yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Thermometer 0 to 100 deg Centigrade	1	nos	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Crimping Tool	2	set	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Wire stripper 20 cm	2	nos	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Chisel Cold flat 12 mm	2	nos	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Hammer Extractor type 0.40 kg	4	nos	yes	

Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Hacksaw frame 200 mm 300 mm adjustable	2	nos each	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Try Square 150 mm blade	4	nos	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Outside and Inside Divider Calliper	2	nos each	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Pliers flat nose 150 mm	4	nos	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Pliers round nose 100 mm	4	nos	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Tweezers 100 mm	4	nos	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Snip Straight and Bent 150 mm	2	nos each	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	D.E. metric Spanner	2	nos	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Drill hand brace	4	nos	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Plane, smoothing cutters 50 mm	2	nos each	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Gauge, wire imperial	2	nos	yes	

Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	file set	5	nos	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Soldering Iron 25 watt, 65 watt, 125 watt	2	nos each	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Ohm Meter; Series Type & Shunt Type	2	nos each	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Multi Meter (analog) 0 to 1000 M Ohms,2.5 to 500 V	2	nos	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Digital Multi Meter	6	nos	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	A.C. Voltmeter M.I. 0 –500V A.C	1	nos	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Ammeter MC 0-5 A, 0- 25 A	1	nos each	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	A.C. Ammeter M.I. 0-5A, 0-25 A	1	nos each	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Kilo Wattmeter 0-1-3 kw	1	nos	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	DC Power Supply 0-30V, 2 amp	1	nos	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Current Transformer 415 Volt,50 Hz, CT Ratio 150 / 5 Amp, 5VA	1	nos	yes	

Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Potential Transformer 415 Volt,50Hz, PT Ratio 11KV/ 110V, 10VA	1	nos	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Contactor & auxiliary contacts 3 phase, 440volt, 16amp (Raw Material)	1	nos each	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Rotary Switch 16 A (Raw Material)	1	nos	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Used Motor-Generator in working condition (AC to DC) consisting of : Squirrel Cage Induction Motor with star delta starter and directly coupled to DC shunt generator	1	nos	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Used DC Generators-series in working condition, shunt and compound type for overhauling practice	1	nos each	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Used Diesel Generator Set with change over switch, over current breaker and water-cooled with armature, star-delta connections AC 3 phase, 5 KVA and above, 240 volt	1	nos	NO	

Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Used DC Series Motor coupled with mechanical load 0.5 to 2 KW, 220 Volts	1	nos	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	DC Shunt Motor 2 to 2.5 KW, 220 volts	1	nos	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	DC compound Motor with starter and switch 2 to 2.5 KW ,220 volts	1	nos	yes	
Iron & Steel	ISC/Q 1001	Fitter Electrical Assembly	3	Three phase transformer, shell type oil cooled with all mounting 3 KVA , 415/240 V, 50 Hz , (Delta/Star)	1	nos	yes	