



## QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR STRATEGIC MANUFACTURING INDUSTRY



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### 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

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### Introduction

## Qualifications Pack- Ship Safety Inspector – Radiation and Hazardous Material

**SECTOR:** STRATEGIC MANUFACTURING

**SUB-SECTOR:** Ship Building, Ship Repair & Ship Breaking

**OCCUPATION:** Ship Breaking

**REFERENCE ID:** SMC/Q 4901

**ALIGNED TO:** NCO-2015/ ISCO NIL

**Brief Job Description:** Ship Safety Inspector - Radiation and Hazardous Material inspects the vessel for assessing its condition including identification of hazardous material and plan for its cleaning using appropriate methodology.

**Personal Attributes:** The individual must be able to take responsibility and make decisions for own work and should be able to guide others in the same area of work. He should have mathematic skills. Also, understanding the need to take initiative and manage self and work to improve efficiency and effectiveness.



Qualifications Pack for Ship Safety Inspector - Radiation and Hazardous Material

Job Details

<b>Qualifications Pack Code</b>	<b>SMC/Q 4901</b>		
<b>Job Role</b>	<b>Ship Safety Inspector - Radiation and Hazardous Material</b>		
<b>Credits (NSQF)</b>	TBD	<b>Version number</b>	<b>1.0</b>
<b>Sector</b>	Strategic Manufacturing	<b>Drafted on</b>	<b>05/11/2016</b>
<b>Sub-sector</b>	Ship Building and Ship Repair and Ship Breaking	<b>Last reviewed on</b>	<b>13/09/2017</b>
<b>Occupation</b>	Ship Breaking	<b>Next review date</b>	<b>12/09/2020</b>
<b>NSQC Clearance on</b>		<b>NA</b>	

<b>Job Role</b>	<b>Ship Safety Inspector - Radiation and Hazardous Material</b>
<b>Role Description</b>	Ship Safety Inspector - Radiation and Hazardous Material inspects the vessel for assessing its condition including identification of hazardous material and plan for its cleaning using appropriate methodology.
<b>NSQF level</b>	5
<b>Minimum Educational Qualifications</b>	Diploma in industrial safety/health and safety environment
<b>Maximum Educational Qualifications</b>	N/A
<b>Prerequisite License or Training</b>	N/A
<b>Minimum Job Entry Age</b>	22 years
<b>Experience</b>	1 year in shipyard/factory environment
<b>Applicable National Occupational Standards (NOS)</b>	<p><b>Compulsory:</b></p> <ol style="list-style-type: none"> <li><a href="#">SMC/N 4901 Conduct check of entire ships with instruments</a></li> <li><a href="#">SMC/N 4902 Plan &amp; Check removal of hazardous materials from ship</a></li> <li><a href="#">SMC/N 9103 Work effectively in a collaborative environment</a></li> <li><a href="#">SMC/N 9104 Maintain safe, hygiene and secure environment</a></li> </ol>
<b>Performance Criteria</b>	As described in the relevant OS units



## Qualifications Pack for Ship Safety Inspector - Radiation and Hazardous Material

### Definitions

Keywords /Terms	Description
Sector	Sector is a conglomeration of different business operations having similar businesses and interest. 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.
Occupation	Occupation is a set of job roles, which perform similar/related set of In an industry.
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 analysis and form the basis of OS.
Job Role	Job role defines a unique set of functions that together form a unique Employment opportunity in an organization.
OS	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
NOS	NOS are Occupational Standards which apply uniquely in the Indian context.
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Qualifications Pack	Qualifications Pack comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification pack code.
Unit Code	Unit Code is a unique identifier for an Occupational Standard , which is denoted by an 'N'
Unit Title	Unit Title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for
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.
Organizational Context	Organizational 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.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills or 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 OS, these include communication related skills that are applicable to most job roles.



Qualifications Pack for Ship Safety Inspector - Radiation and Hazardous Material

Acronyms

Keywords /Terms	Description
SMSSC	Strategic Manufacturing Sector Skill Council
NOS	National Occupational Standards
NSQF	National Skills Qualification Framework
NVEQF	National Vocational Educational Qualification Framework
NVQF	National Vocational Qualification Framework
OS	Occupational Standards
PC	Performance Criteria
QP	Qualification Pack
SSC	Sector Skills Council

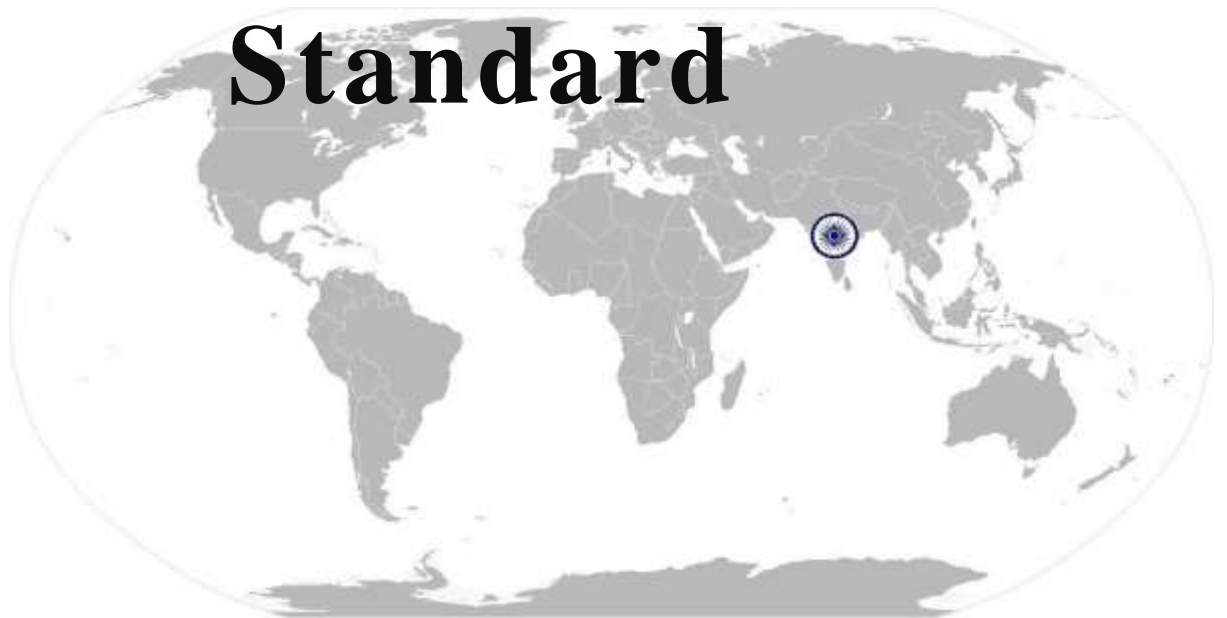


SMC/N 4901

Conduct check of entire ships with instruments

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# National Occupational Standard



## Overview

This unit is about conducting check of entire ships with instruments



SMC/N 4901

Conduct check of entire ships with instruments

National Occupational Standard

<b>Unit Code</b>	<b>SMC/N 4901</b>
<b>Unit Title (Task)</b>	<b>Conduct check of entire ships with instruments</b>
<b>Description</b>	This unit is about checking ship scrapping operation taking into consideration all safety related compliances
<b>Scope</b>	This unit/task covers the following: <ul style="list-style-type: none"> <li>• Check for radiation and hazardous material on the ship</li> </ul>
<b>Performance Criteria(PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Check for radiation and hazardous material on the ship</b>	<p>To be competent, the user/ individual must be able to:</p> <p>PC1. verify that the atmosphere is free from hazardous gas and contains sufficient oxygen</p> <p>PC2. identify the equipment which will be used to identify radiation and hazardous material</p> <p>PC3. check the calibration dates and procedures of radiation measuring instruments</p> <p>PC4. evaluate risk/threat to ship in harbour and sea in case of radiation/hazardous material impact</p> <p>PC5. check presence of hazardous components like freon in refrigerating pipelines, cargo residue, dry tank residue, radioactive material, mercury in gauges, chromates in paints and varnishes, etc</p> <p>PC6. verify if adequate stock of emergency equipment such as neutralising agent, adsorbents, oversized drums and chemical protective gears, are readily available</p> <p>PC7. coordinate with other departments for follow – up of the scrapping requirements and site safety activities as per the plan</p> <p>PC8. check efficiency of dosimeters and their last calibration dates</p> <p>PC9. check that records of stored hazardous substances tallies with approved location and is in compliance with all marine safety requirements</p> <p>PC10. make an action plan for safe and timely removal of hazardous material</p>
<b>Knowledge and Understanding (K)</b>	
<b>A. Organizational Context</b> (Knowledge of the organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. relevant occupational health and safety requirements applicable in the work place</p> <p>KA2. legislation, standards, policies, and procedures followed in the company relevant to own employment and performance conditions</p> <p>KA3. all types of ships such as cargo ships, passengers ships, cruise ships, tankers, ferries, war ships, frigate, crew ships, etc</p> <p>KA4. type of fishing vessels - small, medium and large</p> <p>KA5. importance of working in clean and safe environment</p> <p>KA6. own job role and responsibilities and sources for information pertaining to employment terms, entitlements, job role and responsibilities</p>



SMC/N 4901

**Conduct check of entire ships with instruments**

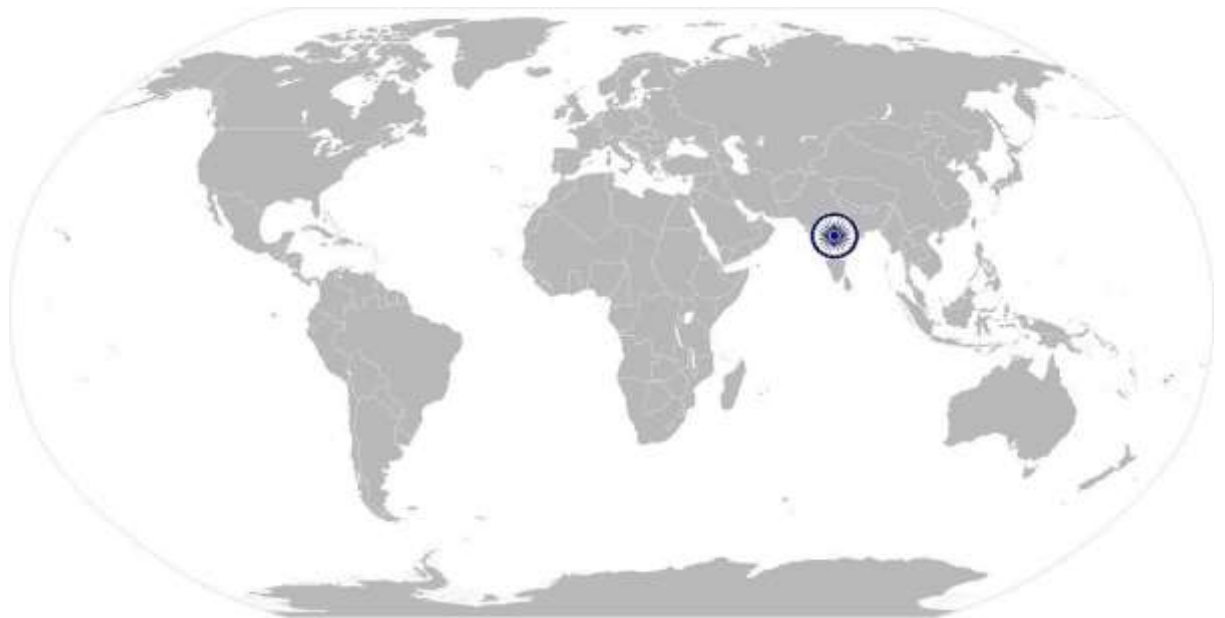
	<p>KA7. reporting structure, inter-dependent functions, lines and procedures in the work area</p> <p>KA8. relevant people and their responsibilities within the work area</p> <p>KA9. importance and purpose of documentation in context of employment and work</p>
<b>B. Technical Knowledge</b>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. knowledge of hazardous material that could be present in the ship</p> <p>KB2. code and interpretation of various hazardous material/radioactive material</p> <p>KB3. safety procedures to be followed while conducting scrapping operations</p> <p>KB4. types of protective clothing and radiation sensors</p> <p>KB5. knowledge of existing standards and guidelines on safe and environmentally sound management in ship dismantling</p> <p>KB6. instructional knowledge to increase radiation safety awareness</p> <p>KB7. the importance of leaving the work area and equipment in a safe and clean condition methods</p> <p>KB8. how to fill up the reports, checklists and complete documentation</p> <p>KB9. able to extract relevant provisions/knowledge from the regulation related to hazardous waste rules for waste management, factory act act for safety and health related aspects</p> <p>KB10. instructional knowledge to increase radiation safety awareness</p> <p>KB11. tools to test systems for leaks (using air, water or hydraulic testing methods)</p>
<b>Skills (S)</b>	
<b>A. Core Skills/ Generic Skills</b>	<b>Writing Skills</b>
	The user/ individual on the job needs to know and understand how to: SA1. prepare and maintain documentation
	<b>Reading Skills</b>
	The user/individual on the job needs to know and understand how to: SA2. read vernacular/english language SA3. read and understand health and safety instructions SA4. read from different sources- books SA5. read various colour codes, as per standard electrical, mechanical and civil nomenclature
<b>B. Professional Skills</b>	<b>Oral Communication (Listening and Speaking skills)</b>
	The user/individual on the job needs to know and understand how to: SA6. express statements or information clearly so that others can hear and understand SA7. participate in and understand the main points of simple discussions SA8. respond appropriately to any queries SA9. communicate with peers, superiors and sub-ordinates
	<b>Decision making</b>
	The user/individual on the job needs to know and understand how to: SB1. follow organisation rule- based decision making process SB2. take decision with systematic course of actions and/or response



SMC/N 4901

Conduct check of entire ships with instruments

	<b>Organization skills</b>
	The user/individual on the job needs to know and understand how to: SB3. organize work schedule to meet deadlines SB4. follow organization code of conduct
	<b>Analytical thinking</b>
	The user/individual on the job needs to know and understand how to: SB5. apply domain knowledge, observations and data to select course of action to perform tasks







SMC/N 4901

Conduct check of entire ships with instruments

## NOS Version Control

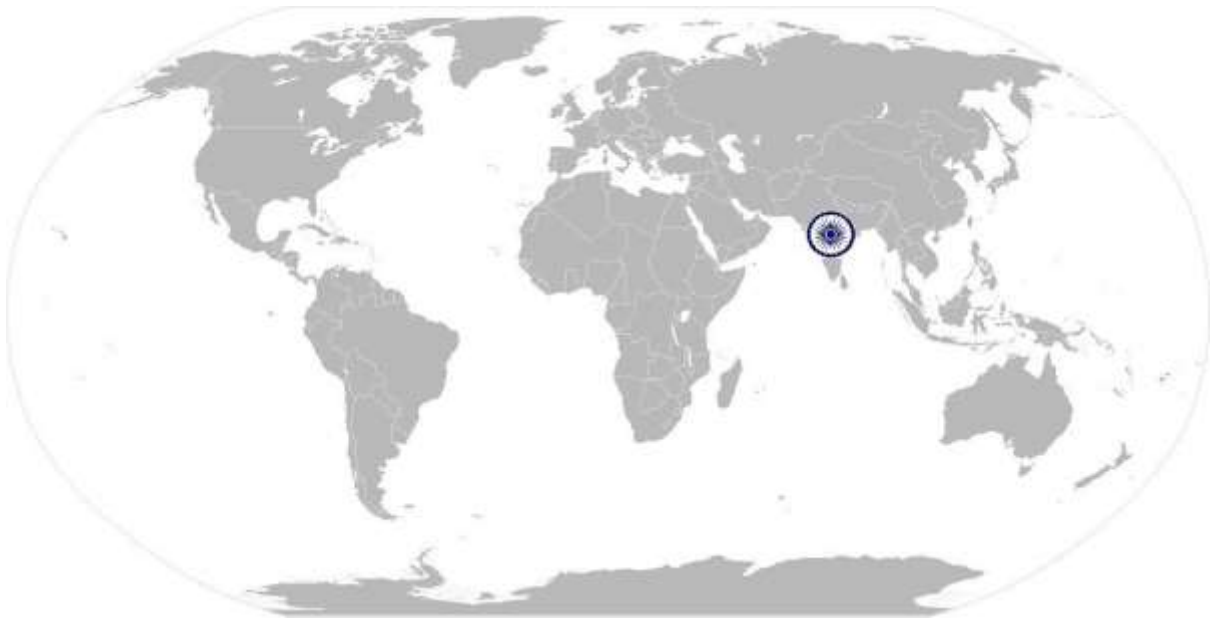
NOS Code	SMC/N 4901		
Credits (NSQF)	TBD	Version number	1.0
Industry	Strategic Manufacturing	Drafted on	05/11/2016
Industry Sub-sector	Ship Building and Ship Repair and Ship Breaking	Last reviewed on	13/09/2017
Occupation	Ship Breaking	Next review date	12/09/2020



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# National Occupational Standard



## Overview

This unit is about planning and checking of removal of hazardous materials/ substances from ships.



SMC/N 4902

Plan & check removal of hazardous materials/ substances from ships

National Occupational Standard

<b>Unit Code</b>	<b>SMC/N 4902</b>
<b>Unit Title (Task)</b>	<b>Plan and Check Removal of hazardous materials/ substances from ships</b>
<b>Description</b>	This unit is about planning and checking removal of hazardous materials/ substances and appropriate cleaning of ship.
<b>Scope</b>	This unit/task covers the following: <ul style="list-style-type: none"> <li>Plan removal of hazardous and radioactive material</li> <li>Check removal of hazardous and radioactive material</li> </ul>
<b>Performance Criteria(PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Plan removal of hazardous and radioactive material</b>	To be competent, the user/ individual must be able to: <ul style="list-style-type: none"> <li>PC1. conduct operation of static radiation gauges</li> <li>PC2. plan stowage of radioactive materials</li> <li>PC3. plan evacuation routes in case of emergency</li> <li>PC4. plan operations for proper use of safety techniques in case of emergency</li> <li>PC5. conduct periodic training for ship hazardous material safety</li> </ul>
<b>Check removal of hazardous and radioactive material</b>	To be competent, the user/ individual must be able to: <ul style="list-style-type: none"> <li>PC6. check for removal of hazardous substances such as kerosene and white spirit, thinners, hydraulic oil, waste oil</li> <li>PC7. check if the vessel has sensors for leak detection, warning devices and emergency scrubbing systems</li> <li>PC8. check that containers and storage tanks for the chemicals are tested in accordance to an internationally – acceptable standards</li> <li>PC9. check removal of hazardous components like cadmium in electronic equipment, tributyltin oxide in underwater hull plates, etc</li> <li>PC10. check for removal of hazardous materials such as asbestos, mercury, radioactive material</li> <li>PC11. check for removal of gases such as hydrogen sulphide, carbon monoxide, CO2</li> <li>PC12. confirm that the intrinsically safe systems and circuits used for measurement, monitoring, control and communication purposes in all hazardous locations are being properly used and maintained</li> <li>PC13. ensure that before commencing work on any scrapping, the platform is safe for such operations</li> </ul>
<b>Knowledge and Understanding (K)</b>	
<b>A. Organizational Context</b> (Knowledge of the organization and its processes)	The user/individual on the job needs to know and understand: <ul style="list-style-type: none"> <li>KA1. legislation, standards, policies, and procedures followed in the company relevant to own employment and performance conditions</li> <li>KA2. relevant occupational health and safety requirements applicable in the work place</li> <li>KA3. importance of working in clean and safe environment</li> </ul>



SMC/N 4902

**Plan & check removal of hazardous materials/ substances from ships**

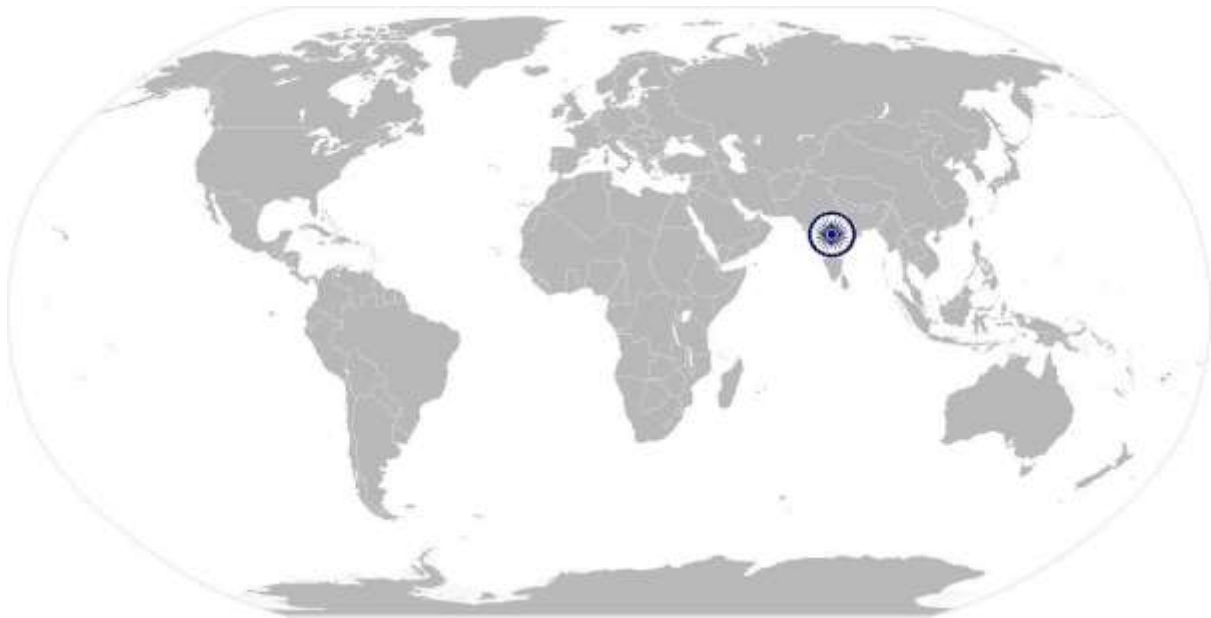
	<p>KA4. own job role and responsibilities and sources for information pertaining to employment terms, entitlements, job role and responsibilities</p> <p>KA5. reporting structure, inter-dependent functions, lines and procedures in the work area</p> <p>KA6. relevant people and their responsibilities within the work area</p> <p>KA7. importance and purpose of documentation in context of employment and work</p>
<p><b>B. Technical Knowledge</b></p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. procedures for conducting a scrapped ship survey/vessel survey for radiation and hazardous material</p> <p>KB2. knowledge on formulation and interpretation of ship hazardous material</p> <p>KB3. knowledge of hazardous material that could be present in the ship at time of ship scrapping</p> <p>KB4. methods of removing the hazardous materials from the ships</p> <p>KB5. how to sample liquids and gases that would be present in a ship compartment</p> <p>KB6. knowledge of existing standards and guidelines on safe and environmentally sound management in ship dismantling</p> <p>KB7. instructional knowledge to increase radiation safety awareness</p> <p>KB8. methods for controlling exposure to radiation</p> <p>KB9. types of static radiation gauges</p> <p>KB10. tools to test systems for leaks</p>
<p><b>Skills (S)</b></p>	
<p><b>A. Core Skills/ Generic Skills</b></p>	<p><b>Writing Skills</b></p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. prepare and maintain documentation</p> <p><b>Reading Skills</b></p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA2. read vernacular/english language</p> <p>SA3. read and understand health and safety instructions</p> <p>SA4. read various colour codes, as per standard electrical, mechanical and civil nomenclature</p> <p><b>Oral Communication (Listening and Speaking skills)</b></p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA5. express statements or information clearly so that others can hear and understand</p> <p>SA6. participate in and understand the main points of simple discussions</p> <p>SA7. respond appropriately to any queries</p> <p>SA8. communicate with peers, superiors and sub-ordinates</p>
<p><b>B. Professional Skills</b></p>	<p><b>Decision making</b></p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. follow organisation rule- based decision making process</p> <p>SB2. take decision with systematic course of actions and/or response</p>



SMC/N 4902

Plan & check removal of hazardous materials/ substances from ships

	<b>Organization skills</b>
	The user/individual on the job needs to know and understand how to: SB3. organize work schedule to meet deadlines SB4. work constructively and collaboratively with others
	<b>Analytical thinking</b>
	The user/individual on the job needs to know and understand how to: SB5. apply domain knowledge, observations and data to select course of action to perform tasks



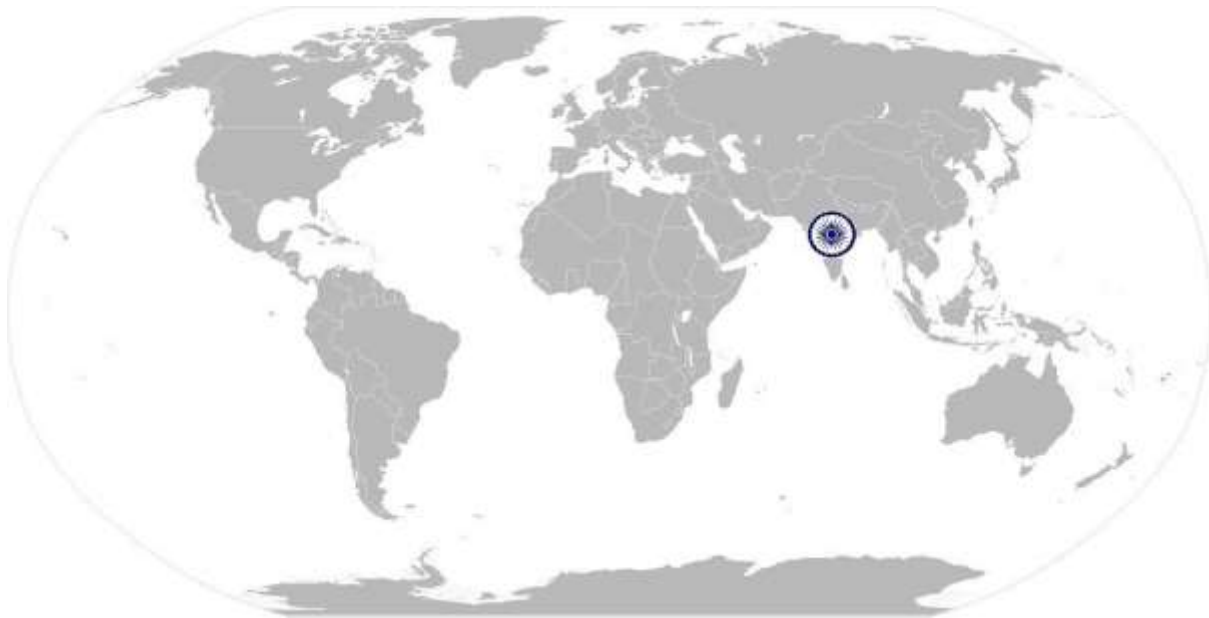


SMC/N 4902

Plan & check removal of hazardous materials/ substances from ships

## NOS Version Control

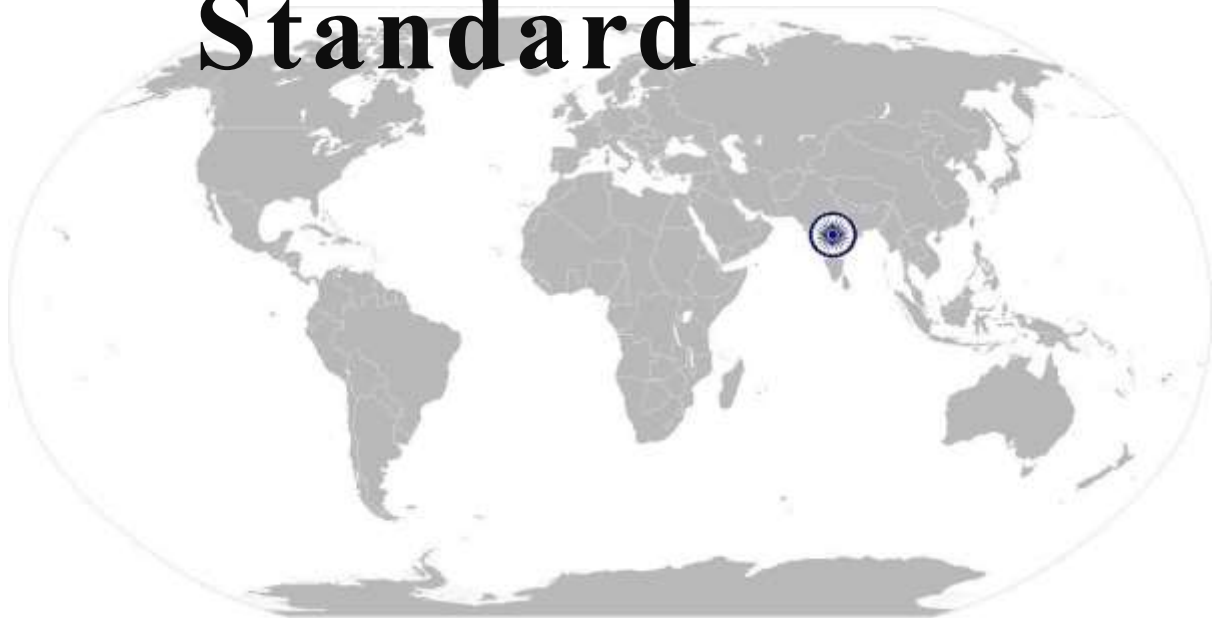
NOS Code	SMC/N 4902		
Credits (NSQF)	TBD	Version number	1.0
Industry	Strategic Manufacturing	Drafted on	05/11/2016
Industry Sub-sector	Ship Building & Ship Repair & Ship Breaking	Last reviewed on	13/09/2017
Occupation	Ship Breaking	Next review date	12/09/2020



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# National Occupational Standard



## Overview

This unit covers basic practices for working effectively with others in a collaborative environment, such as team work and cooperation, awareness of team and organisational goals, sharing of information, communicating effectively using appropriate etiquettes and behaviours, and interpersonal relations.



SMC/N 9103

Work effectively in a collaborative environment

National Occupational Standard	<b>Unit Code</b>	SMC / N 9103
	<b>Unit Title (Task)</b>	Working effectively in a collaborative environment
	<b>Description</b>	This unit covers basic practices for working effectively with others in a collaborative environment, such as team work and cooperation, awareness of team and organisational goals, sharing of information, communicating effectively using appropriate etiquettes and behaviours, and interpersonal relations.
	<b>Scope</b>	<p>This unit/task covers the following:</p> <p>Activities covered:</p> <ul style="list-style-type: none"> <li>• Working effectively in a team</li> <li>• Etiquettes and behaviors for:               <ul style="list-style-type: none"> <li>• understanding &amp; sharing information with others to enable efficient delivery of work</li> <li>• communicating with other members and people internal or external to the organization</li> </ul> </li> <li>• Interpersonal relations</li> </ul>
<b>Performance Criteria(PC) w.r.t. the Scope</b>		
<b>Element</b>	<b>Performance Criteria</b>	
<b>Working effectively in a team</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. define own work and responsibilities</p> <p>PC2. understand organizational goals</p> <p>PC3. understand work requirements and assigned targets</p> <p>PC4. identify team members and other persons responsible for preceding and successive activities</p> <p>PC5. identify any problems with team members and take initiative to solve problems in a positive manner</p> <p>PC6. discuss with the appropriate authority or person, any problems that arise, which may affect the work and remain unresolved</p> <p>PC7. work in a way that shows respect for others</p> <p>PC8. seek ways of improvement of work</p> <p>PC9. learn skills from others that help in performing the work efficiently and share own skills with them, which may benefit their work</p> <p>PC10. work together as a single unit to ensure efficiency in work</p> <p>PC11. ensure proper care is given to a fellow worker in case of an accident</p>	





SMC/N 9103

**Work effectively in a collaborative environment**

<p><b>Etiquette and behaviors for sharing information and communicating effectively</b></p>	<p>To be competent, the user/ individual must be able to:</p> <p>PC12. seek clarifications where required without disruption of own or others work</p> <p>PC13. give feedback of work done and report problems identified in the field</p> <p>PC14. pass on accurate information to authorized persons who require it and within agreed timescale and confirm its receipt</p> <p>PC15. make sure that information being provided is within the purview of own authority and responsibility</p> <p>PC16. communicate with other people clearly and effectively</p> <p>PC17. use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism</p> <p>PC18. display active listening skills while interacting with others at work and receiving feedback</p> <p>PC19. communicate with other employees to ensure that work is organized to protect workers against risks and accidents</p> <p>PC20. demonstrate responsible and disciplined behavior</p>
<p><b>Interpersonal relations</b></p>	<p>To be competent, the user/ individual must be able to:</p> <p>PC21. develop understanding, goodwill and trust</p> <p>PC22. resolve individual disagreements with the concerned person</p> <p>PC23. recognize when a conflict situation exists and try to resolve amicably</p> <p>PC24. follow the organisation's policies and procedures to resolve conflicts</p>
<p><b>Knowledge and Understanding (K)</b></p>	
<p><b>A. Organizational Context</b> (Knowledge of the organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. legislation, standards, policies, and procedures followed in the company relevant to own employment and performance conditions</p> <p>KA2. organisational chart and project schedules</p> <p>KA3. reporting structure, inter-dependent functions, lines and procedures in the work area</p> <p>KA4. work flow in the organization, relevant people and their responsibilities within the work area</p> <p>KA5. effective working relationships with both internal and external the people with which the individual is required to interact</p>
<p><b>B. Technical Knowledge</b></p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. organizational goals and objectives, individual and team performance</p> <p>KB2. importance of team work in organizational and individual success</p> <p>KB3. importance of developing effective working relationships</p> <p>KB4. importance of giving and taking feedback</p> <p>KB5. importance of knowledge sharing for effective working</p> <p>KB6. importance of effective communication in the workplace</p> <p>KB7. importance of tone and pitch in effective communication</p> <p>KB8. value and importance of active listening and assertive communication</p> <p>KB9. importance of avoiding casual expletives and unpleasant terms while communicating in professional circles</p> <p>KB10. importance of communicating clearly and effectively with people face-to-face,</p>



SMC/N 9103

**Work effectively in a collaborative environment**

	by telephone and in writing KB11. importance of discipline for professional success KB12. common reasons for interpersonal conflicts and process of resolving it KB13. expressing and addressing grievances appropriately and effectively
<b>Skills (S)</b>	
<b>A. Core Skills/ Generic Skills</b>	<b>Writing Skills</b>
	The user/ individual on the job needs to know and understand how to: SA1. prepare and maintain documentation
	<b>Reading Skills</b>
	The user/individual on the job needs to know and understand how to: SA2. read vernacular/English language SA3. read various colour codes, as per standard electrical, mechanical and civil nomenclature
	<b>Oral Communication (Listening and Speaking skills)</b>
The user/individual on the job needs to know and understand how to: SA4. express statements or information clearly so that others can hear and understand SA5. participate in and understand the main points of simple discussions SA6. respond appropriately to any queries SA7. communicate with employees	
<b>B. Professional Skills</b>	<b>Team Work</b>
	The user/individual on the job needs to know and understand how to: SB1. work constructively and collaboratively with others SB2. build rapport and cooperative relationships with internal team members and other departments for effective completion of work SB3. resolve conflicts within teams SB4. consider how one's actions will affect the other team members and the team as a whole

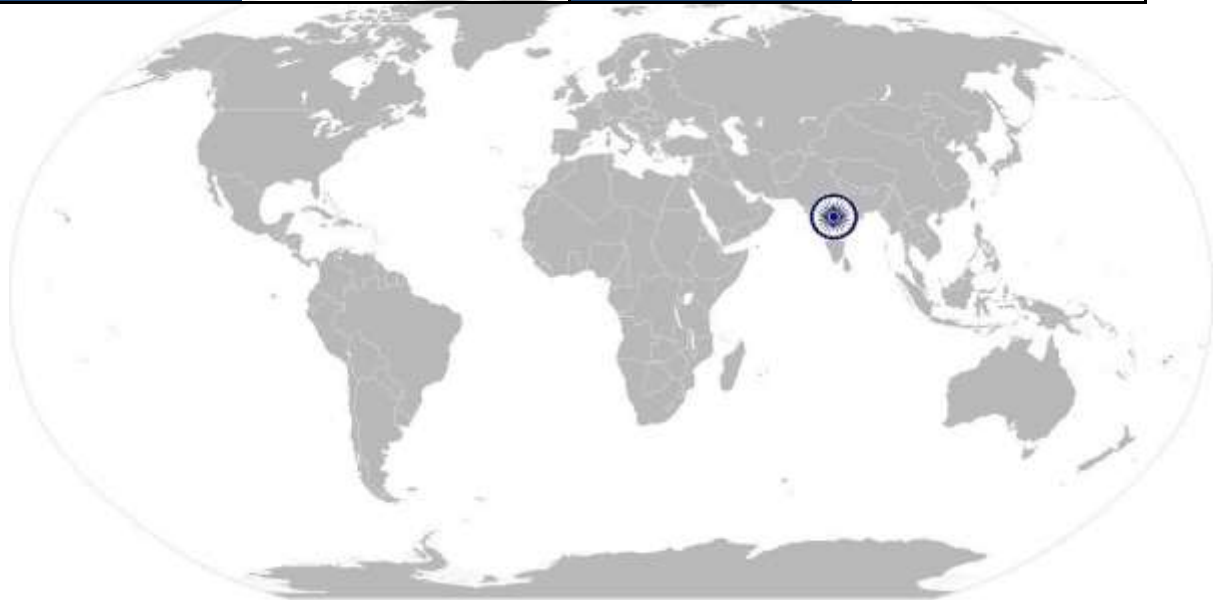


SMC/N 9103

Work effectively in a collaborative environment

## NOS Version Control

NOS Code	SMC/N 9103		
Credits (NSQF)	TBD	Version number	1.0
Industry	Strategic Manufacturing	Drafted on	05/11/2016
Industry Sub-sector	Common	Last reviewed on	13/09/2017
Occupation	Common	Next review date	12/09/2020

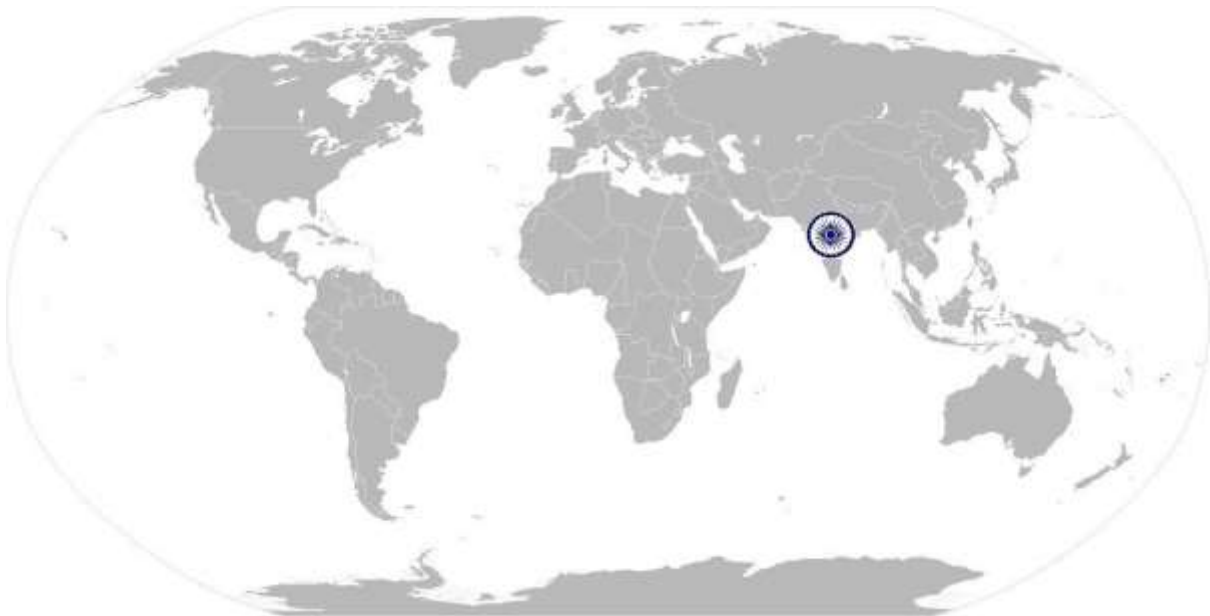


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# National Occupational Standard



## Overview

This unit covers procedures and practices to be followed to maintain a healthy, safe and secure work environment.



SMC/N 9104 Maintain a healthy, safe and secure working environment

National Occupational Standard	<b>Unit Code</b>	<b>SMC/N 9104</b>
	<b>Unit Title (Task)</b>	<b>Maintain a healthy, safe and secure working environment</b>
	<b>Description</b>	This unit is about maintaining a healthy, safe and secure work environment. It covers responsibilities towards self, others, assets and the environment.
	<b>Scope</b>	<p>This unit/task covers the following:</p> <p>Activities covered:</p> <ul style="list-style-type: none"> <li>• maintain healthy workplace environment</li> <li>• maintain safe and secure environment</li> <li>• fire safety</li> <li>• emergencies, rescue and first-aid procedures</li> </ul>
	<b>Performance Criteria(PC) w.r.t. the Scope</b>	
	<b>Element</b>	<b>Performance Criteria</b>
	<b>Maintain healthy workplace</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. maintain cleanliness and hygiene</p> <p>PC2. follow health and hygiene procedures in all the work at all times</p> <p>PC3. identify common health hazards and symptoms for self and other team members related to exposure of H<sub>2</sub>S, paint fumes, asbestos fibres, etc</p>
<b>Maintain safe and secure environment</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC4. keep a look out for hazards in the workplace related to equipment, personal clothing, etc</p> <p>PC5. use protective clothing such as gloves, safety glasses, etc for specific tasks &amp; work conditions</p> <p>PC6. keep a lookout for following accommodation related safety aspects</p> <ul style="list-style-type: none"> <li>• escape routes unobstructed; exits clearly marked</li> <li>• safety signs and placards posted and clearly readable</li> <li>• life jackets and immersion suits correctly stowed &amp; marked</li> </ul> <p>PC7. keep a lookout for the following machinery spaces related safety aspects</p> <ul style="list-style-type: none"> <li>• spare life-jackets marked and in good order, emergency equipment accessible and operational</li> <li>• safety signs and placards posted and clearly readable</li> <li>• all personnel wear correct personal protective gear</li> <li>• protective guards for rotating machinery properly secured in place</li> <li>• shielding of high pressure fuel pipes is in place and steam pipes properly insulated</li> <li>• self-closing device on sounding pipes and glass level gauges are functional &amp; not tied in open position</li> <li>• approved First Aid supplies readily available, accessible and clearly marked</li> </ul>	



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	<p>PC8. keep a lookout for the following deck area related safety aspects</p> <ul style="list-style-type: none"> <li>• “Danger-Enclosed Space” marked outside all such spaces having access other than via manholes</li> <li>• all safety &amp; hazard zone identification signs posted &amp; readable, fire plan wallets updated</li> <li>• all lifebuoys and lifeboats are correctly stowed, life buoy lights and smoke markers valid &amp; in good condition</li> <li>• all weather tight hatches closing properly with packing in good condition</li> <li>• good health of oil pollution clean-up equipment and their storage locations clearly marked</li> <li>• area free of combustible rubbish and tools and equipment which are not in use</li> </ul> <p>PC9. report any accidents or near accidents quickly and accurately to the proper person</p> <p>PC10. practice emergency procedures correctly</p>
<b>Fire safety</b>	<p>To be competent ,the user/individual on the job must be able to:</p> <p>PC11. ensure all portable fire extinguishers &amp; stowage locations numbered, in place &amp; inspection dated and for safety reasons, fire station not locked but only sealed</p>
<b>Emergencies, rescue and first-aid procedures</b>	<p>To be competent ,the user/individual on the job must be able to:</p> <p>PC12. respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments</p> <p>PC13. participate in emergency procedures and move injured people and others in correct method during an emergency</p> <p>PC14. perform emergency procedures including raising alarm, means of escape, etc</p> <p>PC15. perform and organize loss minimization or rescue activity during an accident in real or simulated environments administer basic first aid to victims</p> <p>PC16. administer appropriate first aid to victims where required eg. in case of bleeding, burns, choking, electric shock, poisoning etc.</p> <p>PC17. demonstrate basic techniques of bandaging</p>
<b>Knowledge and Understanding (K)</b>	
<b>A. Organizational Context</b> (Knowledge of the organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. responsibilities under the organization’s health, safety and security standards</p> <p>KA2. where one can get information about health, hygiene and safety at the workplace</p> <p>KA3. names of all the people responsible for health and safety in a workplace</p> <p>KA4. names and location of documents that refer to health and safety in the workplace</p>
<b>B. Technical Knowledge</b>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. general rules on hygiene that one must follow</p> <p>KB2. knowledge of the adverse health effects that may be caused by the exposure to a hazard</p>



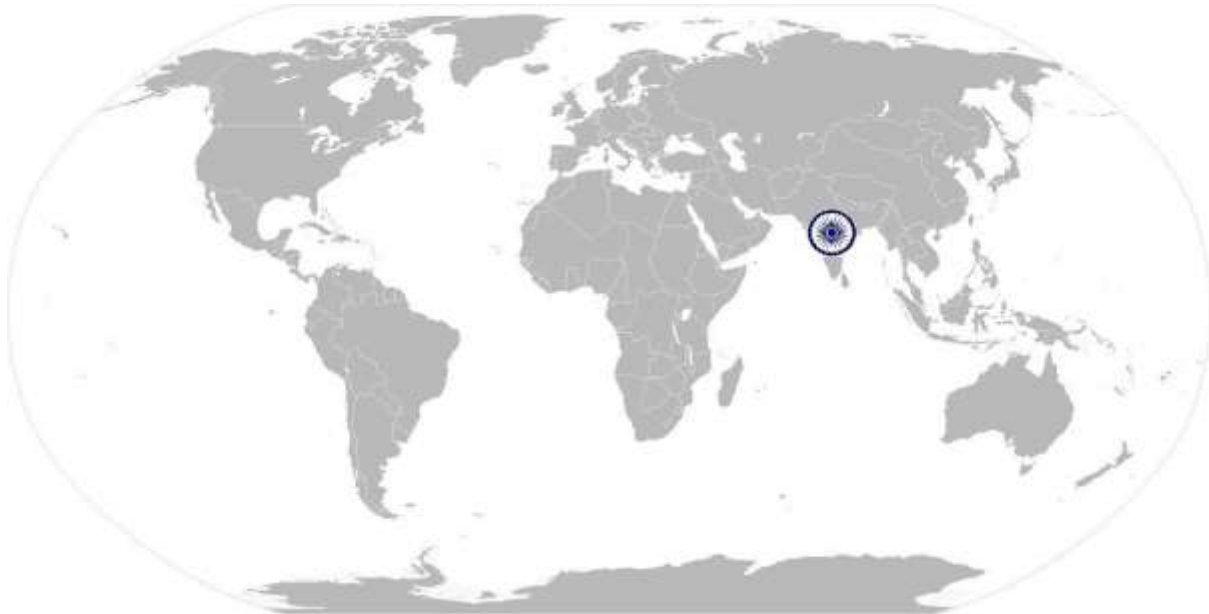
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	<p>KB3. knowledge of proper use of barriers that may be needed to protect an entrant from hazards</p> <p>KB4. knowledge of entry and exit of vessel and evacuation procedures in case of an emergency</p> <p>KB5. knowledge of what personal protective equipment is needed for safe entry into and exit from the space</p> <p>KB6. knowledge of emergency indicators like sirens and what it indicates</p> <p>KB7. knowledge of precautions to be taken in confined spaces</p> <p>KB8. knowledge of precautions to be taken to be taken while working in heights like safety nets, length of rope and other safety practices in marine industry</p> <p>KB9. awareness of work going on in surrounding areas</p> <p>KB10. awareness of gases generated on board of ship</p> <p>KB11. awareness of toxic gases in confined spaces</p> <p>KB12. how to read indicators like oxygen level indicator</p> <p>KB13. health and safety hazards commonly present in the work environment and related precautions</p> <p>KB14. methods of accident prevention</p> <p>KB15. where to find first aid equipment and who the registered first-aider is in the workplace</p> <p>KB16. safe lifting and handling techniques to be followed</p> <p>KB17. rescue techniques applied during a fire hazard</p> <p>KB18. organization's emergency procedures, in particular for fire, and how one should follow these</p> <p>KB19. where to find fire alarms and how to set them off</p> <p>KB20. where to find all the general health and safety equipment in the workplace</p> <p>KB21. importance of using protective clothing/equipment while working</p> <p>KB22. personal safety, health and dignity issues relating to the movement of a person by others</p> <p>KB23. various types of safety signs and what they mean</p> <p>KB24. content of written accident report</p>
<b>Skills (S)</b>	
<b>A. Core Skills/ Generic Skills</b>	<b>Writing Skills</b>
	SA8. The user/ individual on the job needs to know and understand how to: SA9. prepare and maintain documentation
	<b>Reading Skills</b>
	SA10. The user/individual on the job needs to know and understand how to: SA11. read vernacular/english language SA12. read and understand manuals, health and safety instructions SA13. read various colour codes, as per standard electrical, mechanical and civil nomenclature
	<b>Oral Communication (Listening and Speaking skills)</b>
	The user/individual on the job needs to know and understand how to: SA14. respond appropriately to any queries



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	SA15. communicate with employees
<b>B. Professional Skills</b>	<b>Decision making</b>
	The user/individual on the job needs to know and understand how to: SB5. follow organisation rule- based decision making process SB6. take decision with systematic course of actions and/or response
	<b>Organization skills</b>
	The user/individual on the job needs to know and understand how to: SB7. organize work schedule to meet deadlines SB8. work constructively and collaboratively with others
	<b>Analytical thinking</b>
The user/individual on the job needs to know and understand how to: SB9. apply domain knowledge, observations and data to select course of action to perform tasks related to solar photovoltaic power plant	



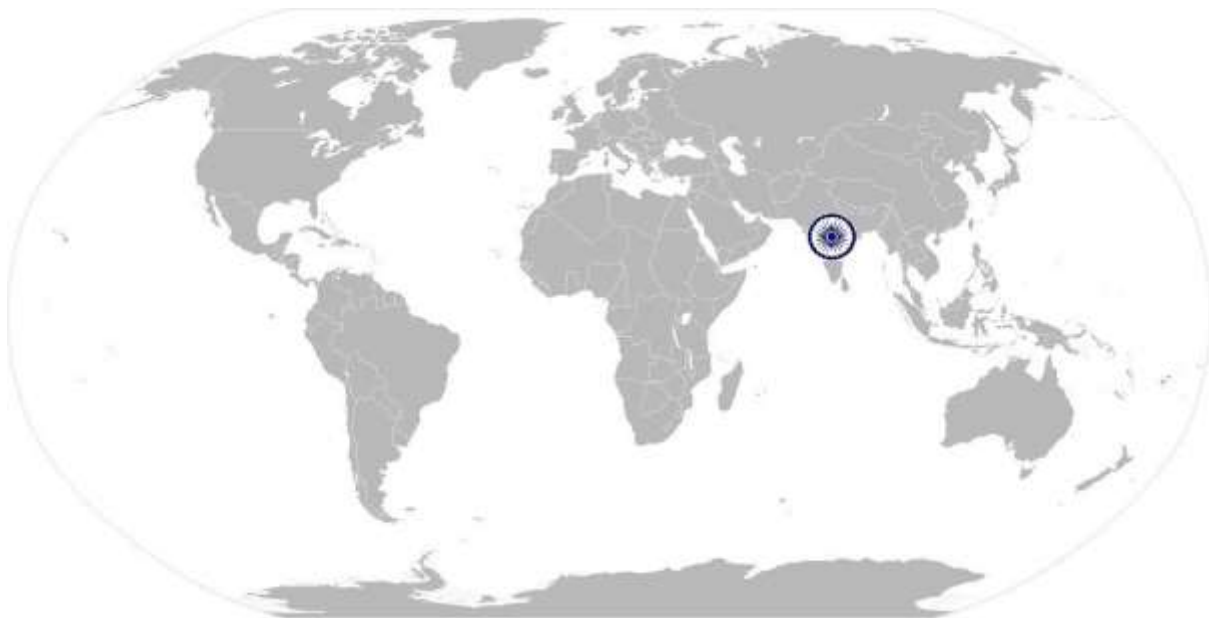




SMC/N 9104      Maintain a healthy, safe and secure working environment

## NOS Version Control

NOS Code	SMC/N 9104		
Credits (NSQF)	TBD	Version number	1.0
Industry	Strategic Manufacturing	Drafted on	05/11/2016
Industry Sub-sector	Common	Last reviewed on	13/09/2017
Occupation	Common	Next review date	12/09/2020



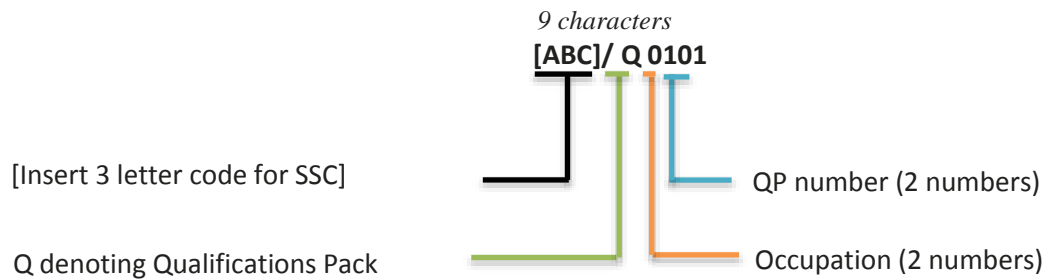
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## Annexure

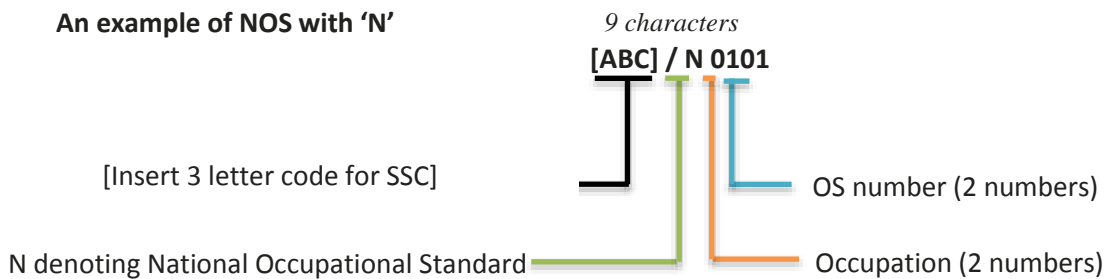
### Nomenclature for QP and NOS

#### Qualifications Pack



#### Occupational Standard

##### An example of NOS with 'N'



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The following acronyms/codes have been used in the nomenclature above:

Sub sectors	Range of occupation numbers
Defence Equipment - Land & Naval Systems	01-30
Ship building & Ship breaking	31-60
Electronic Security Equipment Manufacturing	61-75
Safety & Fire Fighting Equipment	76-90
Common	91-94

Sequence	Description	Example
Three letters	Industry name	SMC
Slash	/	/
Next letter	Whether QP or NOS	Q or N
Next two numbers	Occupation code	1
Next two numbers	OS number	1

Note :

- The range of occupation numbers have been decided based on the number of existing and future occupations in a segment



### CRITERIA FOR ASSESSMENT OF TRAINEES

**Job Role** Ship Safety Inspector – Radiation and Hazardous Material

**Qualification Pack** SMC/Q 4901

**Sector Skill Council** Strategic Manufacturing

#### 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. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion.
6. To pass the Qualification Pack, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
7. In case of *unsuccessful completion*, the trainee may seek reassessment on the Qualification Pack.

Compulsory NOS Total Marks: 400				Marks Allocation	
Assessment outcomes	Assessment criteria for outcomes	Total Marks	Out of	Theory	Skills/ Practical
<b>SMC/Q 4901</b> Conduct check of entire ships with instruments	PC1. verify that the atmosphere is free from hazardous gas and contains sufficient oxygen	100	10	3	7
	PC2. identify the equipments which will be used to identify radiation and hazardous material		10	3	7
	PC3. check the calibration dates and procedures of radiation measuring instruments		10	3	7
	PC4. evaluate risk/threat to ship in harbor and sea in case of radiation/hazardous material impact		10	3	7



### Qualifications Pack for Technician Ship Scrapper

Compulsory NOS Total Marks: 400				Marks Allocation	
Assessment outcomes	Assessment criteria for outcomes	Total Marks	Out of	Theory	Skills/ Practical
	PC5. check presence of hazardous components like freon in refrigerating pipelines, cargo residue, dry tank residue, radioactive material, mercury in gauges, chromates in paints and varnishes, etc		10	3	7
	PC6. verify if adequate stock of emergency equipment such as neutralising agent, adsorbents, oversized drums and chemical protective gears, are readily available		10	3	7
	PC7. coordinate with other departments for follow – up of the scrapping requirements and site safety activities as per the plan		10	3	7
	PC8. check efficiency of dosimeters and their last calibration dates		10	3	7
	PC9. check that records of storage Hazardous substances tallies with approved location and in compliance with all marine safety requirements		10	3	7
	PC10. make an action plan for safe and timely removal of hazardous material		10	3	7
			<b>Total</b>	<b>100</b>	<b>30</b>
<b>SMC/N 4902</b> Plan and check removal of hazardous materials/ substances from ships	PC1. conduct operation of static radiation gauges	<b>100</b>	7	1	6
	PC2. plan stowage of radioactive materials		7	1	6
	PC3. plan evacuation routes in case of emergency		7	1	6



### Qualifications Pack for Technician Ship Scrapper

Compulsory NOS Total Marks: 400				Marks Allocation	
Assessment outcomes	Assessment criteria for outcomes	Total Marks	Out of	Theory	Skills/ Practical
	PC4. plan operations for proper use of safety techniques in case of emergency		7	1	6
	PC5. conduct periodic training for ship hazardous material safety		8	2	6
	PC6. check for removal of hazardous substances such as kerosene and white spirit, thinners, hydraulic oil, waste oil		8	3	5
	PC7. check if the vessel has sensors for leak detection, warning devices and emergency scrubbing systems		8	3	5
	PC8. check that containers and storage tanks for the chemicals are tested in accordance to an internationally – acceptable standards		8	3	5
	PC9. check removal of hazardous components like cadmium in electronic equipment, tributyltin oxide in underwater hull plates, etc		8	3	5
	PC10. check for removal of hazardous materials such as asbestos, mercury, radioactive material		8	3	5
	PC11. check for removal of gases such as hydrogen sulphide, carbon monoxide, CO2		8	3	5



### Qualifications Pack for Technician Ship Scrapper

Compulsory NOS Total Marks: 400				Marks Allocation	
Assessment outcomes	Assessment criteria for outcomes	Total Marks	Out of	Theory	Skills/ Practical
	PC12. confirm that the intrinsically safe systems and circuits used for measurement, monitoring, control and communication purposes in all hazardous locations are being properly used and maintained		8	3	5
	PC13. ensure that before commencing work on any scrapping, the platform is safe for such operations		8	3	5
		<b>Total</b>	<b>100</b>	<b>30</b>	<b>70</b>
<b>SMC/N 9103</b> Work effectively in a collaborative environment	PC1. define own work and responsibilities	<b>100</b>	5	2	3
	PC2. understand organisational, individual and team goals		5	2	3
	PC3. understand work requirements and assigned targets		5	2	3
	PC4. identify team members and other persons responsible for preceding and successive activities		5	2	3
	PC5. identify any problems with team members and take initiative to solve problems in a positive manner		4	2	2
	PC6. discuss with the appropriate authority or person, any problems that arise, which may affect the work and remain unresolved		4	2	2
	PC7. work in a way that shows respect for others		4	1	3
	PC8. seek ways of improvement of work		4	1	3



### Qualifications Pack for Technician Ship Scrapper

Compulsory NOS Total Marks: 400				Marks Allocation	
Assessment outcomes	Assessment criteria for outcomes	Total Marks	Out of	Theory	Skills/ Practical
	PC9. learn skills from others that help in performing the work efficiently and share own skills with them, which may benefit their work		4	1	3
	PC10. work together as a single unit to ensure efficiency in work		4	1	3
	PC11. ensure proper care is given to a fellow worker in case of an accident		4	1	3
	PC12. seek clarifications where required without disruption of own or others work		4	1	3
	PC13. give feedback of work done and report problems identified in the field		4	1	3
	PC14. pass on accurate information to authorized persons who require it and within agreed timescale and confirm its receipt		4	1	3
	PC15. make sure that information being provided is within the purview of own authority and responsibility		4	1	3
	PC16. communicate with other people clearly and effectively		4	1	3
	PC17. use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism		4	1	3
	PC18. display active listening skills while interacting with others at work and receiving feedback		4	1	3
	PC19. communicate with other employees to ensure that work is organized to protect workers against risks and accidents		4	1	3





### Qualifications Pack for Technician Ship Scrapper

Compulsory NOS Total Marks: 400				Marks Allocation	
Assessment outcomes	Assessment criteria for outcomes	Total Marks	Out of	Theory	Skills/ Practical
	PC20. demonstrate responsible and disciplined behaviour		4	1	3
	PC21. develop understanding, goodwill and trust with team members		4	1	3
	PC22. resolve individual disagreements with the concerned person		4	1	3
	PC23. recognize when a conflict situation exists and try to resolve amicably		4	1	3
	PC24. follow the organisation's policies and procedures to resolve conflicts		4	1	3
	<b>Total</b>		<b>100</b>	<b>30</b>	<b>70</b>
<b>SMC/N 9104</b> Maintain a healthy, safe and secure working environment	PC1. maintain cleanliness and hygiene	<b>100</b>	3	1	2
	PC2. wear clean clothing		3	1	2
	PC3. follow health procedures		5	2	3
	PC4. identify common health hazards		5	2	3
	PC5. keep a look out for hazards		3	1	2
	PC6. use protective clothing/equipment		3	1	2
	PC7. keep a lookout for accommodation for safety		5	2	3
	PC8. keep a lookout for the Machinery		5	2	3
	PC9. keep a lookout for the Deck		5	2	3
	PC10. report any accidents or near accidents quickly and accurately to the proper person		4	2	2
	PC11. practice emergency procedures		5	2	3



### Qualifications Pack for Technician Ship Scrapper

Compulsory NOS Total Marks: 400				Marks Allocation	
Assessment outcomes	Assessment criteria for outcomes	Total Marks	Out of	Theory	Skills/ Practical
	PC12. retrieve and/or point out documents that refer to safety at workplace		3	1	2
	PC13. use appropriate fire extinguishers on different types of fires correctly causes of fires		5	2	3
	PC14. ensure all portable fire extinguishers & stowage locations numbered, in place & inspection dated and for safety reasons, fire station not locked but only sealed		5	2	3
	PC15. demonstrate rescue techniques applied during fire hazard		5	2	3
	PC16. demonstrate the correct use of a fire extinguisher		5	2	3
	PC17. respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments		4	1	3
	PC18. participate in emergency procedures and move injured people and others in correct method during an emergency		5	2	3
	PC19. perform emergency procedures		5	2	3
	PC20. perform and organize loss minimization or rescue activity during an accident in real or simulated environments administer basic first aid to victims		4	1	3
	PC21. demonstrate how to free a person from electrocution, as per laid down procedure		5	1	4



### Qualifications Pack for Technician Ship Scrapper

Compulsory NOS Total Marks: 400				Marks Allocation	
Assessment outcomes	Assessment criteria for outcomes	Total Marks	Out of	Theory	Skills/ Practical
	PC22. administer appropriate first aid to victims where required eg. in case of bleeding, burns, choking, electric shock, poisoning etc.		5	1	4
	PC23. demonstrate basic techniques of bandaging		3	1	2
		<b>Total</b>	<b>100</b>	<b>36</b>	<b>64</b>