QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR TELECOM 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-Tower Technician

SECTOR: TELECOM

SUB-SECTOR: Passive Infrastructure

OCCUPATION: Operation & Maintenance

REFERENCE ID: TEL/Q4100

ALIGNED TO: NCO-2015/7422.3001

Tower Technician in the telecom industry is also known as a Site Engineer/Tower Engineer/Site Technician

Brief Job Description: Individual in this role is responsible to maintain site live 24x7, maintain and repair level-1 faults/issues at telecom tower site, level-1 preventive and corrective maintenance and report faults to the supervisor in time. Individual also needs to travel inter-state and work during odd hours, when required.

Personal Attributes: This job requires the individual to be technically qualified; self-disciplined; assertive; team player; action-orientated; possess analytical skills & problem solving ability; effective communication skills and ability to work under pressure.

Job Details

Qualifications Pack Code	TEL/Q4100		
Job Role	**Tower Technician**		
Credits NSQF	**TBD**	**Version number**	**1.0**
Sector	**Telecom**	**Drafted on**	**14/05/2013**
Sub-sector	**Passive Infrastructure**	**Last reviewed on**	**26/05/2017**
Occupation	**Operations & Maintenance**	**Next review date**	**26/12/2020**
NSQC Clearance on	**20/07/2015**		

Job Role	**Tower Technician**
Role Description	Keep sites live 24x7 through site maintenance
NSQF level	4
Minimum Educational Qualifications*	10+2 and/or ITI Diploma in Electrical/Mechanical
Maximum Educational Qualifications*	Graduate
Training (Suggested but not mandatory)	NA
Minimum Job Entry Age	18 Year
Experience	0-3 years of experience is desired
Applicable National Occupational Standards (NOS)	(Click to open the below hyperlinks) **Compulsory:** 1. TEL/N4100 (Site hygiene) 2. TEL/N4101 (Preventive Maintenance) 3. TEL/N4102 (Site Management) 4. TEL/N4103 (Task reporting) 5. TEL/N4104 (Corrective Maintenance) **Optional:** N.A.
Performance Criteria	As described in the relevant OS 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 OS , these include communication related skills that are applicable to most job roles
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
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 OS
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 statements which together specify the technical , generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standards
National Occupational Standards	NOS are Occupational Standards which apply uniquely in the Indian context
Occupation	Occupation is a set of job roles under which role-holders perform similar/related set of functions in an industry
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
OS (Occupational Standards)	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 standards of performance required when carrying out a task
QP (Qualification 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.
Qualification Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with, in carrying out the function which has 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
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities
Telecom	Is a communication sector consisting of companies who provide

	telephonic communication facilities to the public
Unit Code	Unit Code is a unique identifiers for an 'OS' unit, which can be denoted with either an **'o'** or an **'N'**
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do

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

Acronyms

Keywords /Terms	Description
CI	Cluster Incharge
CIT	Customer Interface Tool
IM	Infra Manager
MTD	Month Till Date
NOC	Network Operations Centre
OPCO	Mobile Operator
PIU	Power Interface Unit
PM	Preventive Maintenance
R&M	Repair and Maintenance
SLA	Service Level Agreement
SLA	Service Level Agreement
TAT	Turn Around Time
TOC	Telecom Operation Control
ZOM	Zonal Operation Manager

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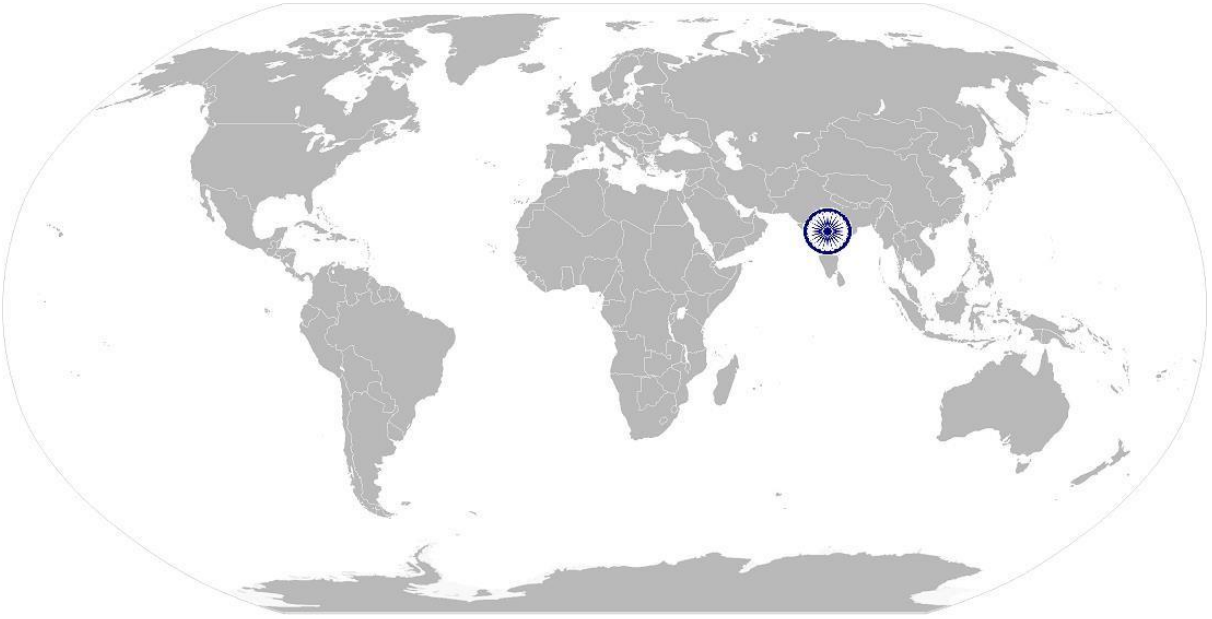
TEL/N4100 **Site hygiene**

National Occupational Standard



Overview

This unit is about maintenance of tower site by maintaining site hygiene, at regular intervals.

TEL/N4100 **Site hygiene**

Service Provider

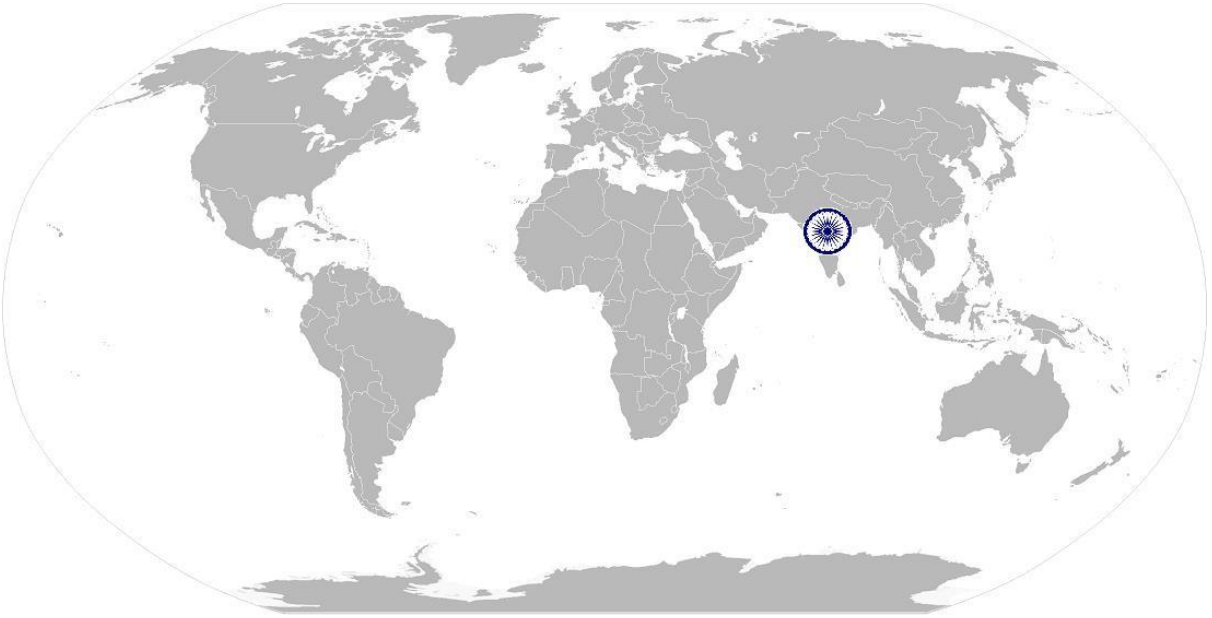
Unit Code	**TEL/N4100**
Unit Title (Task)	**Site hygiene**
Description	This OS unit is about maintaining the site hygiene
Scope	This unit/task covers the following: Key stakeholders: • tower technician Maintain site hygiene
Performance Criteria(PC) w.r.t. the Scope:	
Element	**Performance Criteria**
	To be competent, the user/individual on the job must be able to: PC1. maintain site hygiene of AC, DG, PIU, SMPS and battery bank, as per organization's norms PC2. check leakage, rattles and shakes at the tower site PC3. check if installation of fire safety instruments is in place PC4. control fire accident incidents PC5. check the site as per electrical safety norms PC6. check proper floor markings, shadow board display and labels PC7. check diesel consumption and highlight excessive consumption to supervisor PC8. conduct work area audit as per company checklists PC9. maintain checklist of standards laid by the company
Knowledge and Understanding	
A. Organizational Context (Knowledge of the company / organization & its process relevant to area of responsibilities)	The user/individual on the job needs to know and understand: KA1. checklists for preventive maintenance and site hygiene KA2. asset layout as per company standards
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. basic use of mechanical equipments KB2. basic layout of the tower site KB3. general aspects of electrical wiring KB4. safety requirements at the tower site

TEL/N4100 **Site hygiene**

	KB5. how to use fire extinguisher at the time of emergency KB6. how to calculate energy cost and site up-time KB7. site standards as per company policies
Skills (S)	
A. Core Skills/ Generic Skills	**Comprehension Skills**
	The user/ individual on the job needs to know and understand how to: SA1. comprehend formats and checklists for PM (preventive maintenance) and site hygiene
B. Professional Skills	**Planning and Execution**
	The user/individual on the job needs to know and understand how to: SB1. prioritize daily activities for the up-keep of tower site
	Relationship Building
	The user/individual on the job needs to know and understand how to: SB2. maintain healthy relationship with the landlord

NOS Version Control:

NOS Code	TEL/N4100		
Credits NSQF	TBD	Version number	1.0
Industry	Telecom	Drafted on	15/05/2013
Industry Sub-sector	Passive Infrastructure	Last reviewed on	26/05/2017
		Next review date	26/12/2020



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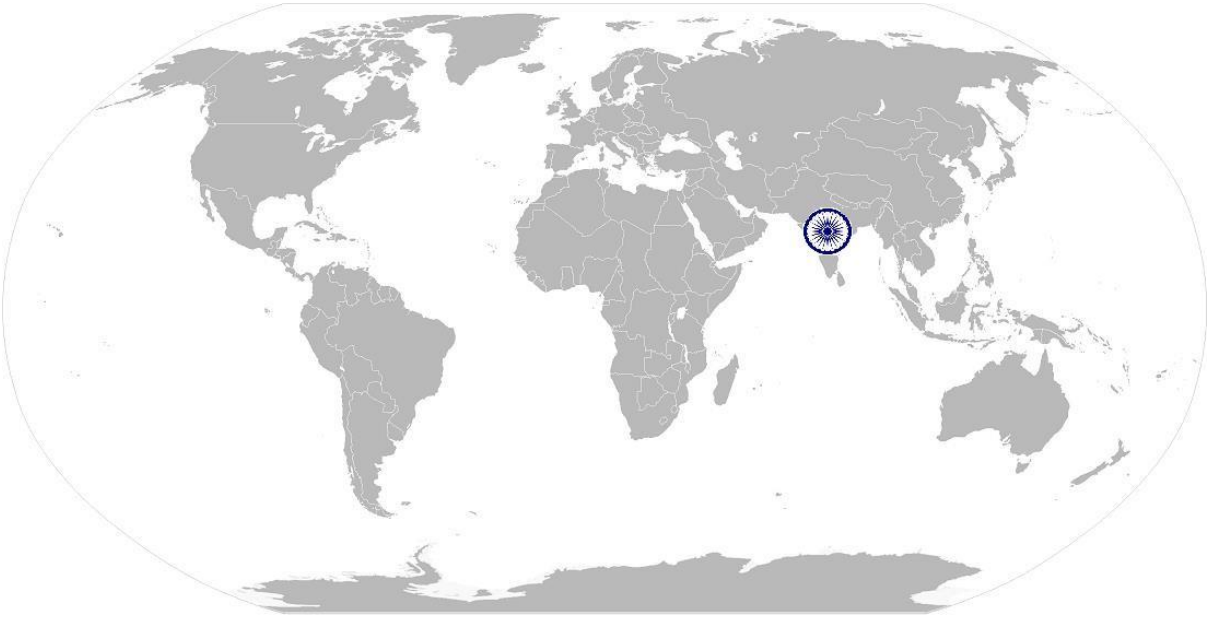
National Occupational Standard



Overview

This unit is about conducting regular preventive maintenance activities at the tower site.

TEL/N4101 **Preventive Maintenance**

Service Provider

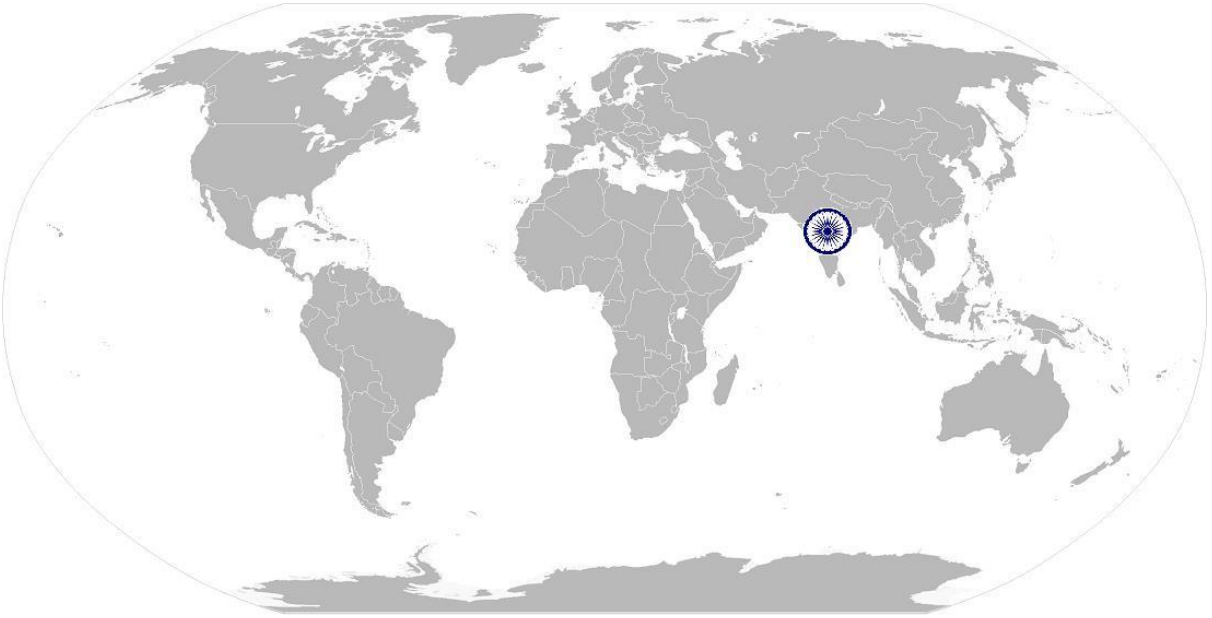
Unit Code	**TEL/N4101**
Unit Title (Task)	**Preventive Maintenance**
Description	This OS unit is about performing regular preventive maintenance activities
Scope	This unit/task covers the following: Key stakeholders: • tower technician • cluster in-charge/supervisor Ensure preventive maintenance activities at the tower site
Performance Criteria(PC) w.r.t. the Scope:	
Element	**Performance Criteria**
	To be competent, the user/individual on the job must be able to: PC1. adhere to PM (preventive maintenance) plan PC2. comply with Beat plan execution, for self PC3. conduct site PM (preventive maintenance) PC4. keep a check on site up-time PC5. perform unique site down PM (preventive maintenance) PC6. perform health check on site like checking engine oil, voltage etc. PC7. check premature ageing of Battery Bank, Diesel Generator, Air Conditioner, PIU and SMPS PC8. monitor outages due to Diesel Generator PC9. close maximum number of complaints registered PC10. provide timely resolutions to trouble tickets raised PC11. comply with preventive maintenance schedule
Knowledge and Understanding	
A. Organizational Context (Knowledge of the company / organization & its process relevant to area of responsibilities)	The user/individual on the job needs to know and understand: KA1. PM (preventive maintenance) norms as per the company KA2. site up-time targets of the company, to avoid penalties KA3. repair and maintenance guidelines of the company

TEL/N4101 **Preventive Maintenance**

B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. troubleshooting of AC, DG, PIU, SMPS, battery bank and shelter KB2. the basic use and care of tools and mechanical equipment KB3. safety hazards and perform duties in a safe manner
Skills (S)	
A. Core Skills/ Generic Skills	**Reading Skills**
	The user/ individual on the job needs to know and understand how to: SA1. read and comprehend company polices and guidelines to conduct timely preventive maintenance activities SA2. comprehend formats and checklists to verify PM (preventive maintenance)
B. Professional Skills	**Analytical Skills**
	The user/individual on the job needs to know and understand how to: SB1. diagnose reasons of down-time through up-time analysis SB2. perform fault analysis to identify and repair recurring faults on site
	Planning and Execution
	The user/individual on the job needs to know and understand how to: SB1. prioritize to conduct preventive maintenance activities effectively

NOS Version Control:

NOS Code	TEL/N4101		
Credits NSQF	TBD	Version number	1.0
Industry	Telecom	Drafted on	15/05/2013
Industry Sub-sector	Passive Infrastructure	Last reviewed on	26/05/2017
		Next review date	26/12/2020



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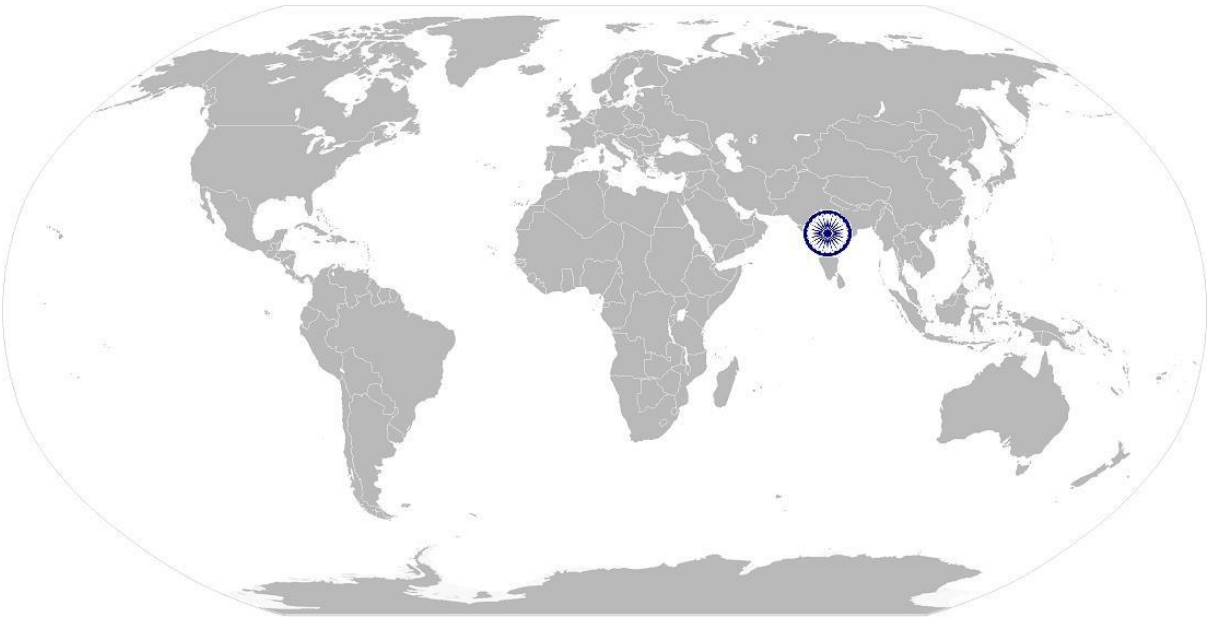
TEL/N4102 **Site management**

National Occupational Standard



Overview

This unit is about executing operational activities at the tower site like submission of electricity bill, alarm check etc.

TEL/N4102 **Site management**

Service Provider

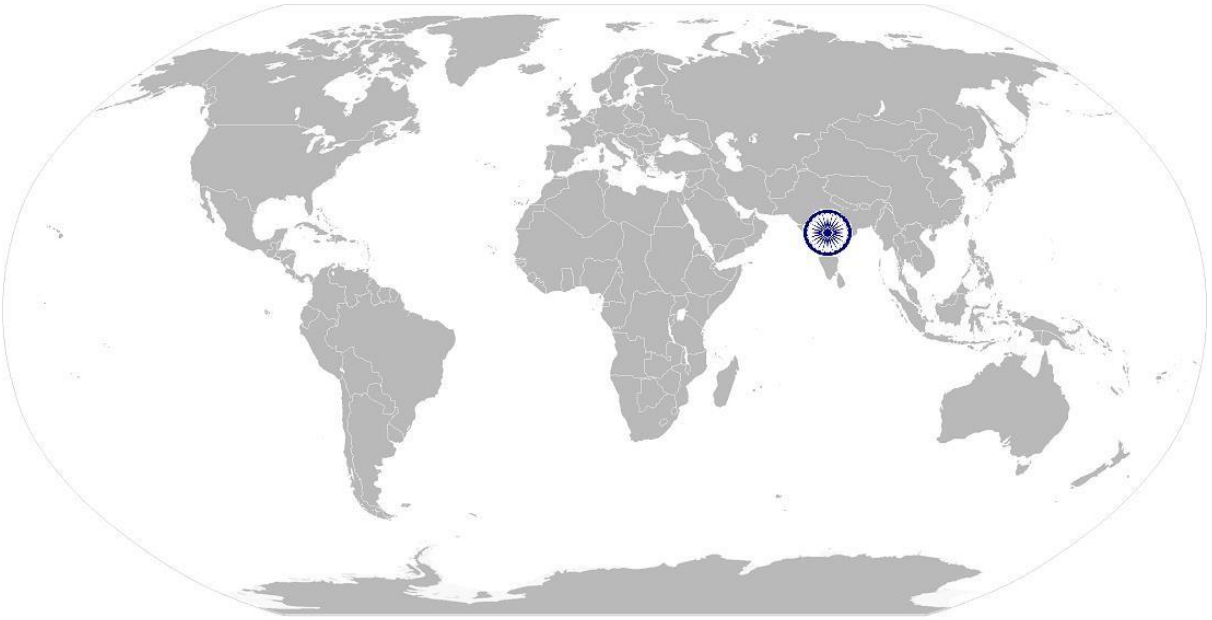
Unit Code	**TEL/N4102**
Unit Title (Task)	**Site Management**
Description	This OS unit is about site management
Scope	This unit/task covers the following: Key stakeholders: • tower technician • cluster in-charge/supervisor Operational maintenance of the site
Performance Criteria(PC) w.r.t. the Scope:	
Element	**Performance Criteria**
	To be competent, the user/individual on the job must be able to: PC1. monitor reading as per EB (electricity bill) against reading on PIU (power interface unit) PC2. timely collect and submit the EB (electricity bill) at the office PC3. check number of alarms active at the site PC4. check site for faulty alarms PC5. attend alarms within the defined SLA PC6. identify the reasons for site lock PC7. co-ordinate with service providers for quality fuel to be filled PC8. interact with site owners w.r.t. rent, access issues etc.
Knowledge and Understanding	
A. Organizational Context (Knowledge of the company / organization & its process relevant to area of responsibilities)	The user/individual on the job needs to know and understand: KA1. EB (electricity bill) collection and payment process

TEL/N4102 **Site management**

B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. whereabouts of relevant EB (Electricity Board) offices & key EB personnel KB2. functioning of NOC/TOC KB3. basic functioning of alarm box and the interface KB4. basic aspects of distribution panel
Skills (S)	
A. Core Skills/ Generic Skills	**Reading Skills**
	The user/ individual on the job needs to know and understand how to: SA1. read and comprehend process and policies of the company
B. Professional Skills	**Planning and Execution**
	The user/individual on the job needs to know and understand how to: SB1. prioritize activities to effectively manage the tower site
	Technical Skills
	The user/individual on the job needs to know and understand how to: SB2. use test and repair equipment

NOS Version Control:

NOS Code	TEL/N4102		
Credits NSQF	4	Version number	1.0
Industry	Telecom	Drafted on	15/05/2013
Industry Sub-sector	Passive Infrastructure	Last reviewed on	26/05/2017
		Next review date	26/12/2020



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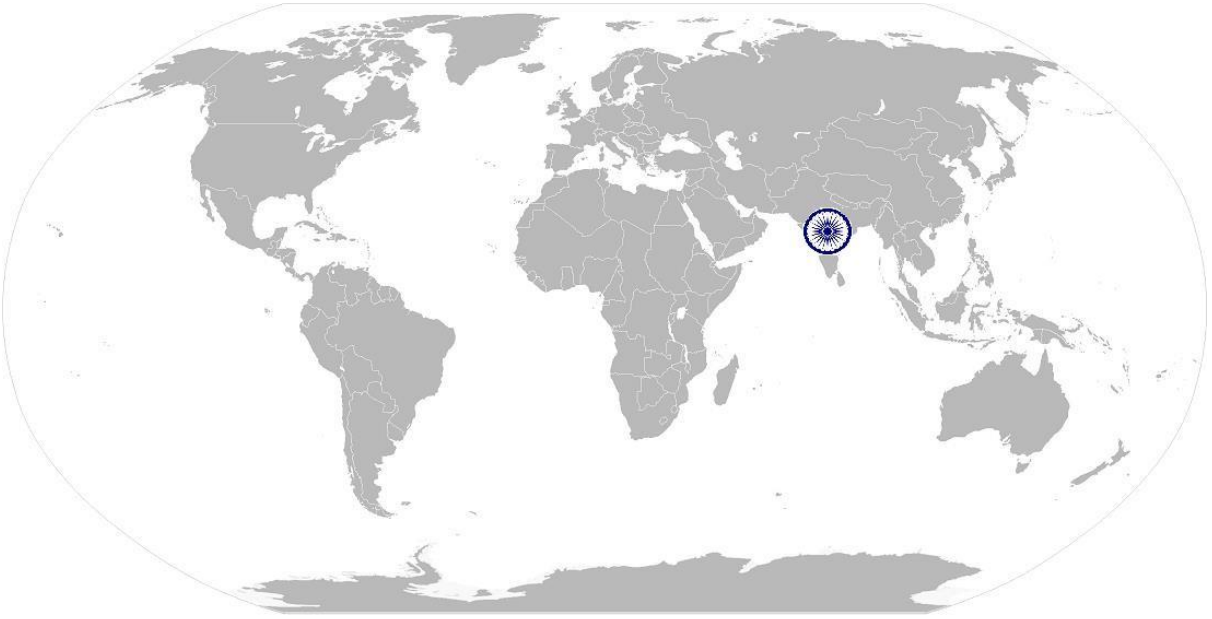
TEL/N4103 **Task Reporting**

National Occupational Standard



Overview

This unit is about reporting and record-keeping as per company's processes and defined SLAs

Service Provider

Unit Code	TEL/N4103
Unit Title (Task)	Task Reporting
Description	This OS unit is about reporting and record-keeping as per company's processes and defined SLAs
Scope	This unit/task covers the following: Key stakeholders: • tower technician • cluster in-charge/supervisor Fill respective reports/check lists Follow the escalation matrix

Performance Criteria(PC) w.r.t. the Scope:	
Element	**Performance Criteria**
	To be competent, the user/individual on the job must be able to: PC1. escalate faults/issues at site to supervisor PC2. fill the preventive maintenance checklists/reports PC3. fill the corrective maintenance checklists/reports PC4. accurately report diesel filling, electricity bill and DG reading PC5. report any changes in the site or movement of any material PC6. report theft if any from the site location PC7. report movement of tower technicians to supervisor

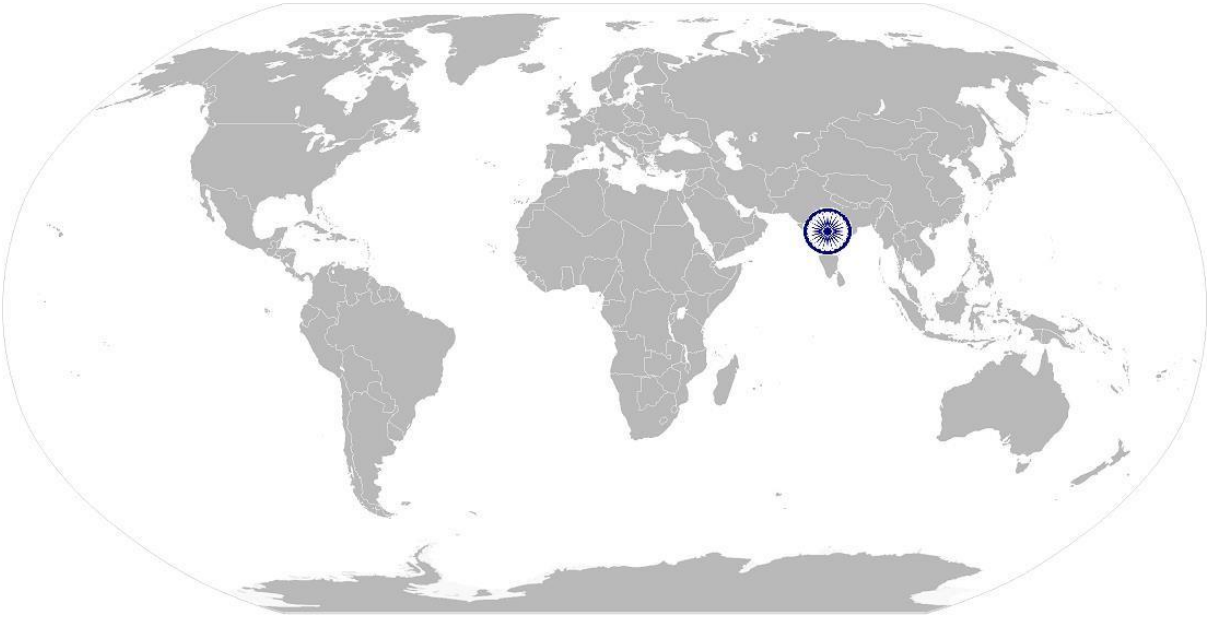
Knowledge and Understanding	
A. Organizational Context (Knowledge of the company / organization & its process relevant to area of responsibilities)	The user/individual on the job needs to know and understand: KA1. PM (preventive maintenance) norms as per the company KA2. corrective maintenance norms as per the company KA3. site up-time targets of the company, to avoid penalties KA4. repair and maintenance guidelines of the company

TEL/N4103 **Task Reporting**

B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. mathematical calculations KB2. computer basics to use reporting software, if any KB3. how to use reporting formats/checklists
Skills (S)	
A. Core Skills/ Generic Skills	**Reading Skills**
	The user/ individual on the job needs to know and understand how to: SA1. read and comprehend formats and checklists for preventive and corrective maintenance
	Oral communication Skills
	The user/ individual on the job needs to know and understand how to: SA2. communicate the issue/fault with complete details to the supervisor
B. Professional Skills	**Analytical Skills**
	The user/individual on the job needs to know and understand how to: SB1. diagnose reasons of down-time by analyzing site-down incidences SB2. perform fault analysis to identify and repair recurring faults on site
	Planning and Execution
	The user/individual on the job needs to know and understand how to: SB1. prioritize to conduct preventive and corrective maintenance activities effectively

NOS Version Control:

NOS Code	TEL/N4103		
Credits NSQF	TBD	Version number	1.0
Industry	Telecom	Drafted on	15/05/2013
Industry Sub-sector	Passive Infrastructure	Last reviewed on	26/05/2017
		Next review date	26/12/2020



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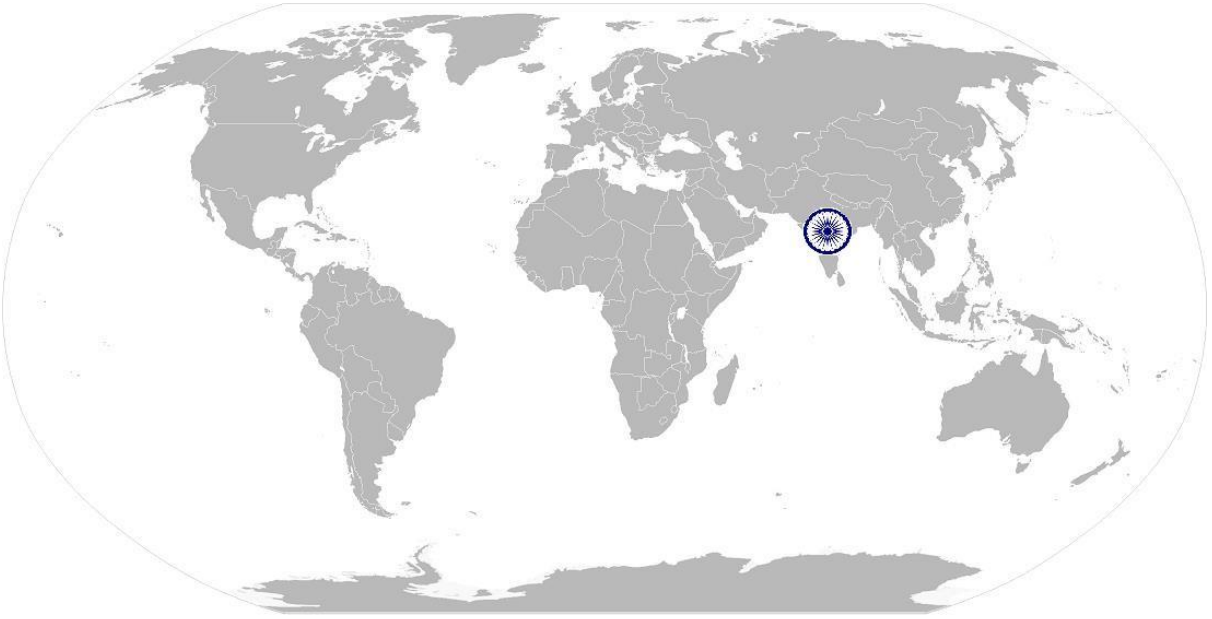
National Occupational Standard



Overview

This unit is about corrective maintenance of DG, AC, PIU, SMPS, Battery Bank and Shelter, within defined SLA.

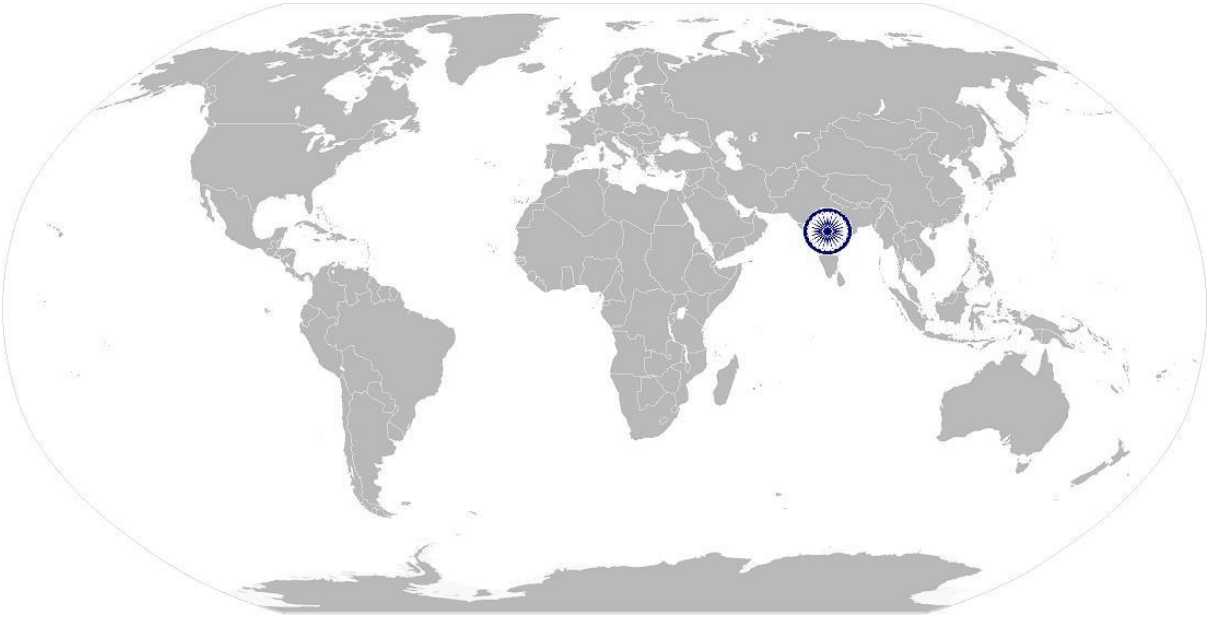
Service Provider

Unit Code Unit Title (Task)	TEL/N4104 Corrective Maintenance
Description	This OS unit is about performing corrective maintenance activities.
Scope	This unit/task covers the following: Key stakeholders: • tower technician • cluster in-charge/supervisor Fill respective reports/check lists Follow the escalation matrix
Performance Criteria(PC) w.r.t. the Scope:	
Element	**Performance Criteria**
	To be competent, the user/individual on the job must be able to: PC1. timely identification of the need for corrective maintenance PC2. adhere to maintenance plan PC3. effective corrective maintenance on all equipment PC4. escalate faults/issues at site to supervisor PC5. fill the corrective maintenance checklists/reports PC6. close maximum number of faults reported
Knowledge and Understanding	
A. Organizational Context (Knowledge of the company / organization & its process relevant to area of responsibilities)	The user/individual on the job needs to know and understand: KA1. PM (preventive maintenance) norms as per the company KA2. corrective maintenance norms as per the company KA3. site up-time targets of the company, to avoid penalties KA4. repair and maintenance guidelines of the company
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. functional knowledge of all equipment KB2. knowledge of all system components KB3. knowledge of special tools and equipment used for system repairs

Skills (S)	
A. Core Skills/ Generic Skills	**Reading Skills**
	The user/ individual on the job needs to know and understand how to: SA1. read and comprehend technical drawings and technical content
	Oral communication Skills
	The user/ individual on the job needs to know and understand how to: SA2. communicate the issue/fault with complete details to the supervisor
B. Professional Skills	**Analytical Skills**
	The user/individual on the job needs to know and understand how to: SB1. diagnose need for corrective maintenance based on system parameters and performance SB2. perform fault analysis to identify and repair/replace components which may lead to a fault
	Planning and Execution
	The user/individual on the job needs to know and understand how to: SB1. prioritize to conduct corrective maintenance activities effectively

NOS Version Control:

NOS Code	TEL/N4104		
Credits NSQF	TBD	Version number	1.0
Industry	Telecom	Drafted on	15/05/2013
Industry Sub-sector	Passive Infrastructure	Last reviewed on	26/05/2017
		Next review date	26/12/2020



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TEL/Q4100 Qualifications Pack for Tower Technician

Criteria for Assessment of Trainee					
Job Role : Tower Technician **Qualification Pack** : TEL/Q4100 **Sector Skill Council** : Telecom					
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 evaluations 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 70% 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					
Assessable Outcomes	**Assessment Criteria**	**Total Mark (500)**	**Out Of**	**Theory**	**Skills Practical**
1.TEL/N4100 (site hygine)	PC1. maintain site hygiene of AC, DG, PIU, SMPS and battery bank, as per organization's norms	100	10	10	0
	PC2. check leakage, rattles and shakes at the tower site		10	5	5
	PC3. check if installation of fire safety instruments is in place		10	10	0
	PC4. control fire accident incidents		15	15	0
	PC5. check the site as per electrical safety norms		20	10	10
	PC6. check proper floor markings, shadow board display and labels		10	10	0
	PC7. check diesel consumption and highlight excessive consumption to supervisor		15	15	0
	PC8. conduct work area audit as per company checklists		5	5	0
	PC9. maintain checklist of standards laid by the company		5	5	0
	Total			85	15
2.TEL/N4101 (preventive maintenance)	PC1. adhere to PM (preventive maintenance) plan	100	5	5	0
	PC2. comply with Beat plan execution, for self		5	5	0
	PC3. conduct site PM (preventive maintenance)		20	0	20
	PC4. keep a check on site up-time		5	5	0
	PC5. perform unique site down PM (preventive maintenance)		15	5	10
	PC6. perform health check on site like checking engine oil, voltage etc.		15	5	10
	PC7. check premature ageing of Battery Bank, Diesel Generator, Air Conditioner, PIU and SMPS		15	5	10
	PC8. monitor outages due to Diesel Generator		5	3	2
	PC9. close maximum number of complaints registered		5	5	0
	PC10. provide timely resolutions to trouble tickets raised		5	5	0
	PC11. comply with preventive maintenance schedule		5	5	0
	Total			48	52
	PC1. monitor reading as per EB (electricity bill) against reading on PIU (power interface unit)		10	5	5

3.TEL/N4102 (Site management)	PC2. timely collect and submit the EB (electricity bill) at the office	100	5	2	3
	PC3. check number of alarms active at the site		20	5	15
	PC4. check site for faulty alarms		20	10	10
	PC5. attend alarms within the defined SLA		10	5	5
	PC6. identify the reasons for site lock		20	10	10
	PC7. co-ordinate with service providers for quality fuel to be filled		10	10	0
	PC8. interact with site owners w.r.t. rent, access issues etc.		5	5	0
	Total			52	48
4.TEL/N4103 (Task Reporting)	PC1. escalate faults/issues at site to supervisor	100	10	10	0
	PC2. fill the preventive maintenance checklists/reports		20	0	20
	PC3. fill the corrective maintenance checklists/reports		20	0	20
	PC4. accurately report diesel filling, electricity bill and DG reading		20	10	10
	PC5. report any changes in the site or movement of any material		15	10	5
	PC6. report theft if any from the site location		10	10	0
	PC7. report movement of tower technicians to supervisor		5	5	0
	Total			45	55
5.TEL/N4104 (Corrective Maintenance)	PC1. timely identification of the need for corrective	100	25	10	15
	PC2. adhere to maintenance plan		10	10	0
	PC3. effective corrective maintenance on all equipment		35	0	35
	PC4. escalate faults/issues at site to supervisor		10	10	0
	PC5. fill the corrective maintenance checklists/reports		10	10	0
	PC6. close maximum number of faults reported		10	10	0
	Total	**500**		50	50