



QUALIFICATION FILE

Junior Engineer – Electrical & Mechanical System (Metro Rail)

☒ Short Term Training (STT) ☐ Long Term Training (LTT) ☐ Apprenticeship

☒ Upskilling ☐ Dual/Flexi Qualification ☐ For ToT ☐ For ToA

☒ General ☐ Multi-skill (MS) ☐ Cross Sectoral (CS) ☐ Future Skills ☐ OEM

NCrF/NSQF Level: 4.5

Submitted By:

DMRC Academy

East approach Road, Delhi Metro Train Depot

Shastri Park, Delhi-110053

Table of Contents

Section 1: Basic Details	3
Section 2: Module Summary	5
NOS/s of Qualifications.....	5
Mandatory NOS/s:	5
Assessment - Minimum Qualifying Percentage.....	5
Section 3: Training Related.....	6
Section 4: Assessment Related.....	6
Section 5: Evidence of the need for the Qualification.....	7
Section 6: Annexure & Supporting Documents Check List.....	7
Annexure 1: Evidence of Level.....	8
Annexure 2: Tools and Equipment (Lab Set-Up)	13
Annexure 3: Industry Validations Summary	15
Annexure 4: Training & Employment Details	15
Annexure 5: Blended Learning	16
Annexure 6: Detailed Assessment Criteria	16
Annexure 7: Assessment Strategy	26
Annexure 8: Acronym and Glossary	28

Section 1: Basic Details

1.	Qualification Name	Junior Engineer – Electrical & Mechanical System (Metro Rail)							
2.	Sector/s	Logistics							
3.	Type of Qualification: ☒ New ☐ Revised ☐ Has Electives/Options ☐ OEM	NQR Code & version of existing/previous qualification: (change to previous, once approved)	Qualification Name of existing/previous version: NA						
4.	a. OEM Name b. Qualification Name (Wherever applicable)	NA Junior Engineer – Electrical & Mechanical System (Metro Rail)							
5.	National Qualification Register (NQR) Code &Version (Will be issued after NSQC approval)	QG-4.5-TW-04144-2025-V1-DMRCA	6. NCrF/NSQF Level: 4.5						
7.	Award (Certificate/Diploma/Advance Diploma/ Any Other (Wherever applicable specify multiple entry/exits also & provide details in annexure)	Certificate							
8.	Brief Description of the Qualification	A Junior Engineer – Electrical & Mechanical System (Metro Rail) oversees the operation, inspection, and maintenance of Electrical & Mechanical (E&M) systems in metro stations, including underground and elevated setups. The individual ensures energy efficiency, infrastructure management, and compliance with safety standards for escalators and elevators, contributing to smooth station operations. The person coordinates with teams to implement preventive maintenance and address technical issues.							
9.	Eligibility Criteria for Entry for Student/Trainee/Learner/Employee	a. Entry Qualification & Relevant Experience: <table border="1"> <thead> <tr> <th>S. No.</th> <th>Academic/Skill Qualification (with Specialization - if applicable)</th> <th>Required Experience (with Specialization - if applicable)</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>3 years Engineering Diploma* / equivalent</td> <td></td> </tr> </tbody> </table> *Diploma in Electrical / Mechanical or in relevant field b. Age: NA		S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1.	3 years Engineering Diploma* / equivalent	
S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)							
1.	3 years Engineering Diploma* / equivalent								
10.	Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))	17	11. Common Cost Norm Category (I/II/III) (wherever applicable):						
12.	Any Licensing requirements for Undertaking Training on This Qualification (wherever applicable)	NA							

[illegible]

Section 2: Module Summary

NOS/s of Qualifications

(In exceptional cases these could be described as components)

Mandatory NOS/s:

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer curriculum document.

Th.-Theory **Pr.**-Practical **OJT**-On the Job Training **Man.**-Mandatory **Rec.**-Recommended **Proj.**-Project

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/ Non-Core	NCrF/NS QF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1.	Implement metro operations training and safety procedures	DMR/LSC/N9 901, v1.0	Core	4.5	3	60	30	00	-	90	20	20	-	10	50	10
2.	Monitor the operations and maintenance of E&M systems in metro railways	. DMR/LSC/N0 501, v1.0	Core	4.5	4	27	33	60	-	120	20	20	-	10	50	20
3.	Monitor and maintain the underground and elevated station systems	. DMR/LSC/N0 502, v1.0	Core	4.5	4	20	40	60	-	120	20	20	-	10	50	20
4.	Monitor energy utilization and infrastructure maintenance in metro stations	. DMR/LSC/N0 503, v1.0	Core	4.5	2	03	27	30	-	60	20	20	-	10	50	20
5.	Monitor and ensure safe escalator and elevator operations in metro systems	. DMR/LSC/N0 504, v1.0	Core	4.5	3	10	20	60	-	90	20	20	-	10	50	20
6.	Employability Skills (30 Hours)	DGT/VSQ/N0 101, v1.0	Non-Core	2.0	1	30	-	-	-	60	20	30	-	-	50	10
Duration (in Hours) / Total Marks					17	150	150	210		510	120	130		50	300	100

Assessment - Minimum Qualifying Percentage

Please specify **any one** of the following:

Minimum Pass Percentage – Aggregate at qualification level: 60 % (Every Trainee should score specified minimum aggregate passing percentage at qualification level to successfully clear the assessment.)

Minimum Pass Percentage – NOS/Module-wise: 60 % (Every Trainee should score specified minimum passing percentage in each mandatory and selected elective NOS/Module to successfully clear the assessment.)

Section 3: Training Related

1.	Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	Educational Qualification: Graduate in Electrical Engineering/Electronics Engineering/Mechanical Engineering. Industry & Training Experience: 2 years of industry experience in relevant field Certification: "Trainer" mapped to the Qualification Pack "MEP/Q2601" Minimum accepted score is 80% aggregate
2.	Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	Educational Qualification: Graduate in Electrical Engineering/Electronics Engineering/Mechanical Engineering. Industry & Training Experience: 4 years of industry experience in relevant field Certification: "Master Trainer" mapped to the Qualification Pack "MEP/Q2602" Minimum accepted score is 90% aggregate
3.	Tools and Equipment Required for Training	☒ Yes ☐ No (If "Yes", details to be provided in Annexure)
4.	In Case of Revised Qualification, Details of Any Upskilling Required for Trainer	NA

Section 4: Assessment Related

1.	Assessor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Educational Qualification: Graduate in Electrical Engineering/Electronics Engineering/Mechanical Engineering. Industry & Training Experience: 2 years of industry experience in relevant field Certification: "Assessor" mapped to the Qualification Pack "MEP/Q2701" Minimum accepted score is 80% aggregate.
2.	Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Educational Qualification: Graduate in Electrical Engineering/Electronics Engineering/Mechanical Engineering. Industry & Training Experience: 2 years of industry experience in relevant field Certification: "Assessor" mapped to the Qualification Pack "MEP/Q2701" Minimum accepted score is 80% aggregate.

3.	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) <i>(as per NCVET guidelines)</i>	Educational Qualification: Graduate in Electrical Engineering/Electronics Engineering/Mechanical Engineering. Industry & Training Experience: 4 years of industry experience in relevant field Certification: "Lead Assessor" mapped to the Qualification Pack "MEP/Q2702" Minimum accepted score is 90% aggregate.
4.	Assessment Mode <i>(Specify the assessment mode)</i>	Offline/ Online
5.	Tools and Equipment Required for Assessment	☒ Same as for training ☐ Yes ☐ No <i>(details to be provided in Annexure-if it is different for Assessment)</i>

Section 5: Evidence of the need for the Qualification

Provide Annexure/Supporting documents name.

1.	Latest Skill Gap Study (not older than 2 years) (Yes/No): Yes
2.	Latest Market Research Reports or any other source (not older than 2 years) (Yes/No): NA
3.	Government /Industry initiatives/ requirement (Yes/No): NA
4.	Number of Industry validation provided: -
5.	Estimated nos. of persons to be trained and employed: 1000
6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: <i>In Process</i> If "No", why:

Section 6: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name

1.	Annexure: NCrf/NSQF level justification based on NCrf level/NSQF descriptors <i>(Mandatory)</i>	<i>Annexure 1</i>
2.	Annexure: List of tools and equipment relevant for qualification <i>(Mandatory, except in case of online course)</i>	<i>Annexure 2</i>
3.	Annexure: Detailed Assessment Criteria <i>(Mandatory)</i>	<i>Annexure 6</i>
4.	Annexure: Assessment Strategy <i>(Mandatory)</i>	<i>Annexure 7</i>
5.	Annexure: Blended Learning <i>(Mandatory, in case selected Mode of delivery is "Blended Learning")</i>	NA
6.	Annexure: Multiple Entry-Exit Details <i>(Mandatory, in case qualification has multiple Entry-Exit)</i>	NA

7.	Annexure: Acronym and Glossary (Optional)	Annexure 8
8.	Supporting Document: Model Curriculum (Mandatory – Public view)	Attached
9.	Supporting Document: Career Progression (Mandatory - Public view)	Attached
10.	Supporting Document: Occupational Map (Mandatory)	Attached
11.	Supporting Document: Assessment SOP (Mandatory)	Attached
12.	Any other document you wish to submit:	NO

Annexure 1: Evidence of Level

NCrF/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCrF/NSQF level descriptor	NCrF/NSQF Level
Professional Theoretical Knowledge/Process	• Oversee the Operations and Maintenance of E&M Systems in Metro Railways: ○ Inspect and troubleshoot critical E&M systems such as ECS, TVS, fire suppression, and hydraulic systems. ○ Optimize system performance and ensure compliance with codal requirements. ○ Troubleshoot issues during system commissioning. • Oversee the Inspection and Maintenance of Underground and Elevated Station Systems: ○ Manage systems like BMS, UPS, DG, LT power distribution, and emergency tools. ○ Oversee maintenance schedules and conduct site visits for system inspections. ○ Coordinate mock drills and failure analysis. • Oversee Energy and Infrastructure Management in Metro Stations: ○ Implement energy conservation practices and manage power supply and cooling systems. ○ Ensure proper earthing, water treatment, and pumping systems. ○ Conduct thermal energy storage system inspections. • Oversee Escalator and Elevator Operations, Maintenance, and Safety:	The Junior Engineer in Electrical & Mechanical (E&M) Systems must possess advanced knowledge of metro rail E&M infrastructure, including Environmental Control Systems (ECS), Tunnel Ventilation Systems (TVS), fire suppression, and hydraulic systems. The role requires a strong understanding of codal compliance, energy management, and safety protocols, alongside the ability to oversee complex maintenance activities and conduct failure analysis. Additionally, this role demands proficiency in problem-solving and decision-making, especially for optimizing performance and troubleshooting issues. The junior engineer also takes responsibility for training teams, ensuring safety, and maintaining operational efficiency through systematic procedures and inspections. Thus, the combination of specialized knowledge, problem-solving skills, and supervisory responsibilities aligns the role with Level 4.5 of the NCrF/NSQF descriptors.	4.5

	○ Oversee the operational safety and maintenance of escalators and elevators. ○ Conduct failure analysis and implement rescue protocols. ○ Monitor maintenance practices for reliability and efficiency. ● Implement Metro Operations Training and Safety Procedures: ○ Design and deliver structured training modules and safety procedures. ○ Conduct first aid and fire safety training. ● Manage operations and customer care while ensuring readiness for emergencies.		
Professional and Technical Skills/ Expertise/ Professional Knowledge	● Know how to assess earthing and lightning protection systems to ensure compliance with DMRC guidelines. ● Know how to troubleshoot VRV system cards and recommend solutions to improve performance. ● Understand how to inspect and evaluate VRV system operations at elevated metro stations to identify operational issues. ● Know how to analyze ECS commissioning issues and resolve problems in collaboration with the team. ● Understand how to inspect and evaluate TVS and fire systems at underground stations for compliance and functionality. ● Know how to check operational modes and codal compliances for tunnel ventilation systems. ● Know how to assess and inspect DG and UPS systems to ensure operational efficiency and compliance with safety standards. ● Know how to conduct detailed inspections of earthing systems and water treatment plants to ensure proper grounding and operation. ● Understand how to evaluate and verify the functioning of thermal energy storage systems during peak hours to ensure efficiency. ● Know how to oversee and inspect escalator and elevator commissioning activities, ensuring compliance with design specifications and safety protocols.	A Junior Engineer – Electrical & Mechanical System (Metro Rail) must be skilled in assessing earthing and lightning protection systems, troubleshooting VRV system cards, and inspecting VRV operations at elevated metro stations. They should be proficient in analyzing ECS issues, inspecting TVS and fire systems, and ensuring compliance with tunnel ventilation, DG, and UPS systems. The junior engineer must also evaluate thermal energy storage systems, oversee escalator and elevator commissioning, and conduct failure analyses. Additionally, they should monitor energy consumption trends and implement energy-saving measures. This role is classified under Level 4.5.	4.5

	- Understand how to conduct failure analysis for escalators and elevators to identify recurring issues and suggest corrective actions. - Know how to monitor and analyze energy consumption trends and implement measures for energy conservation without affecting operational efficiency.		
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	- Select appropriate tools and techniques for conducting effective maintenance and troubleshooting of complex electrical and mechanical systems in various work environments. - Identify training and development needs within the team to enhance skills, increase productivity, and maintain compliance with safety and industry standards. - Oversee daily operations in work environments, ensuring adherence to established safety protocols and procedures to promote efficiency and minimize risk. - Develop and implement maintenance schedules that align with operational needs, ensuring systems and equipment are consistently maintained for peak performance. - Evaluate key performance indicators (KPIs) to assess operational efficiency, identify improvement opportunities, and recommend adjustments for better outcomes. - Manage project timelines, budgets, and resources effectively to ensure timely completion of tasks, meeting quality standards while staying within financial limitations. - Foster a collaborative and open working environment, encouraging team members and stakeholders to communicate and work together toward common objectives. - Adapt to new technologies and trends within the industry, ensuring continuous learning and application of innovative techniques to stay competitive and efficient. - Create and maintain comprehensive records and documentation for all project activities, including	Individuals in this role should demonstrate strong employability skills, such as effective communication, leadership, and conflict resolution. The ability to interpret technical documentation and convey complex information clearly to both team members and stakeholders is crucial. Additionally, junior engineers should exhibit problem-solving skills, addressing operational challenges proactively while enhancing team collaboration. Their entrepreneurial mindset drives innovation in maintenance strategies and improves operational efficiency, ensuring compliance with safety standards and the completion of tasks within project timelines. Hence, it falls under Level 4.5.	4.5

	maintenance schedules, system upgrades, and regulatory compliance. Promote a culture of safety, risk management, and continuous improvement by encouraging proactive problem-solving and feedback within the team		
Broad Learning Outcomes/Core Skill	- Carry out the management of Electrical & Mechanical (E&M) systems to ensure their proper operation and maintenance in metro stations, both underground and elevated. - Carry out the inspection and evaluation of escalators and elevators to ensure they are compliant with safety standards and operational requirements. - Carry out the implementation of preventive maintenance strategies to enhance the longevity and efficiency of E&M systems. - Carry out energy efficiency assessments and apply energy-saving measures for escalators, elevators, and other E&M systems within metro stations. - Carry out team coordination and communication to ensure smooth and effective operations and maintenance of E&M systems. - Carry out troubleshooting and technical issue resolution for escalators, elevators, and other infrastructure to minimize downtime and ensure smooth station operations. - Carry out comprehensive documentation and reporting on maintenance activities, system performance, and safety protocols. - Carry out the management of training procedures for metro operations and safety to ensure adherence to industry standards and safety protocols. - Carry out leadership duties to foster a collaborative and productive work environment, promoting safety and operational excellence. - Carry out the application of effective problem-solving techniques to address technical and operational challenges promptly.	At Level 4.5, Junior Engineer – Electrical & Mechanical System (Metro Rail) is expected to achieve broad learning outcomes that encompass essential skills in technical literacy, analytical reasoning, and operational management. They must apply technical principles to assess, operate, and maintain E&M systems efficiently, including escalators, elevators, and energy management systems. Proficiency in analytical thinking enables junior engineers to evaluate system performance, identify operational challenges, and implement improvements based on data-driven insights. Additionally, they should possess strong documentation and reporting skills to maintain accurate records of maintenance activities, generate comprehensive reports, and ensure compliance with safety and regulatory standards.	4.5
Responsibility	- Assess earthing and lightning protection systems for compliance with DMRC guidelines. - Troubleshoot VRV system cards and suggest	The Junior Engineer – Electrical & Mechanical System (Metro Rail) is responsible for overseeing the operation, inspection, and maintenance of Electrical & Mechanical	4.5

	performance improvements. • Inspect VRV system operations at elevated stations and identify issues. • Resolve ECS commissioning issues through team collaboration. • Conduct ECS system inspections at underground stations. • Document and apply findings from ECS and TVS demo operations. • Check operational modes and compliance of tunnel ventilation systems. • Address commissioning challenges in tunnel ventilation systems. • Inspect fire detection and suppression systems for code adherence. • Identify and improve commissioning challenges in fire systems for tunnels. • Inspect TVS and fire systems for compliance and functionality. • Evaluate water supply and wastewater systems for proper operation. • Analyze hydraulic system failures and suggest preventive actions. • Inspect Pump Testing Machines (PTM) for operational efficiency. • Operate Building Management Systems and monitor alarms and trends. • Conduct BMS inspections at underground stations for functionality. • Inspect DG systems at underground stations for efficiency. • Assess UPS performance and maintenance records for compliance. • Inspect UPS systems, ensure battery maintenance, and verify functioning. • Inspect LT power distribution systems for operational safety. • Evaluate ACB interlocking schemes for proper load discrimination. • Inspect elevated station power distribution and fire	(E&M) systems in both underground and elevated metro stations. The role ensures energy efficiency, infrastructure management, and compliance with safety standards for escalators and elevators, contributing to the smooth functioning of station operations. The junior engineer also coordinates with teams to implement preventive maintenance and resolve technical issues. Key personal attributes include strong analytical and organizational skills, attention to detail, team leadership capabilities, and a proactive approach to problem-solving, with a strong focus on safety and operational efficiency. Hence, it falls under Level 4.5.	
--	--	---	--

	protection systems. - Analyze energy consumption trends and implement conservation measures. - Inspect earthing systems and water treatment plants for proper operation. - Identify escalator components and explain specifications.		
--	--	--	--

Annexure 2: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment

Batch Size: 30

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1.	Multimeter	Nos	2
2.	Digital Clamp Meter	Nos	1
3.	Laser Temperature Gun	Nos	1
4.	Two-Way Radios/tetra set	Nos	2
5.	Tablet or Laptop with BMS Software	Nos	1
6.	PPE Kits (hard hat, hi-vest, gloves, goggles, ear protection, safety helmet,, safety shoes)	Nos	4
7.	Insulated gloves	Pair	4
8.	Inspection Checklists and Forms	Nos	5
9.	Laser Distance Measurer	Nos	1
10.	Digital Calipers	Nos	1
11.	Torque Wrench	Nos	1
12.	Tool Belt or Carrying Case	Nos	1
13.	ECS TVS Demonstration Model	Nos	1
14.	First aid Chart	Nos	1
15.	Do and don'ts chart	Nos	1
16.	Electrical Schematic Diagrams including SLD	Nos	1
17.	E&M Training Handbook	Nos	30
18.	Escalator Demonstration Model	Nos	1
19.	Megger (Digital)	Nos	1
20.	Earth Resistance Tester (clamp on type)	Nos	1
21.	Insulation Tester (Digital)	Nos	1
22.	Standard Tool box (for E&M)	Nos	2
23.	Elevator Model for Rescue Procedure (Kone/Johnson)	Nos	2
24.	Rack-In/out handle (for ACBs)	Nos	1
25.	Trackway Sprinkler Model	Nos	1

26.	Tunnel E&M services Model	Nos	1
27.	Vibration meter	Nos	1
28.	Digital Lux meter	Nos	2
29.	Anemometer	Nos	1
30.	Sound level meter	Nos	1
31.	Air Quality meter	Nos	1
32.	Portable Tachometer	Nos	1
33.	Water Hardness Test Kit	Nos	1
34.	TDS meter	Nos	1
35.	Aluminum double ladder	Nos	1
36.	Aluminum single ladder	Nos	1
37.	Ladder (A type 12 & 4 ft, sliders)	Nos	1
38.	Spirit level gauge 30 cm	Nos	1
39.	Spirit level gauge 100 cm	Nos	1
40.	Measuring tape 30 meters	Nos	1
41.	Full body harness safety belt	Nos	4
42.	First aid box	Nos	2

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. Whiteboard
2. Projector
3. Computer/Laptop
4. Chairs
5. Tables
6. Whiteboard marker
7. Duster

Annexure 3: Industry Validations Summary

Provide the summary information of all the industry validations in table. This is not required for OEM qualifications.

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile (if available)
1.							
2.							

Annexure 4: Training & Employment Details

Training and Employment Projections:

Year	Total Candidates		Women		People with Disability	
	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities
2025	200	75	10	5	5	5
2026	300	100	15	10	10	10
2027	500	200	25	10	10	10

Data to be provided year-wise for next 3 years

Training, Assessment, Certification, and Placement Data for previous versions of qualifications:

Qualification Version	Year	Total Candidates				Women				People with Disability			
		Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed

Applicable for revised qualifications only, data to be provided year-wise for past 3 years.

List Schemes in which the previous version of Qualification was implemented:

- 1.
- 2.

Content availability for previous versions of qualifications:

☒ Participant Handbook ☒ Facilitator Guide ☒ Digital Content ☒ Qualification Handbook ☐ Any Other:

Languages in which Content is available:

Annexure 5: Blended Learning

Blended Learning Estimated Ratio & Recommended Tools:

Refer NCVET “Guidelines for Blended Learning for Vocational Education, Training & Skilling” available on:

<https://ncvet.gov.in/sites/default/files/Guidelines%20for%20Blended%20Learning%20for%20Vocational%20Education,%20Training%20&%20Skilling.pdf>

S. No.	Select the Components of the Qualification	List Recommended Tools – for all Selected Components	Offline : Online Ratio
1	☐ Theory/ Lectures - Imparting theoretical and conceptual knowledge	Classroom Training through PPTs	60:40
2	☐ Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners	Classroom Training through PPTs	60:40
3	☐ Showing Practical Demonstrations to the learners	Practical demonstrations at DMRC Metro Stations	60:40
4	☐ Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training	Practical demonstrations & OJT at DMRC Metro Stations	60:40
5	☐ Tutorials/ Assignments/ Drill/ Practice	Drills / Practice at DMRC Academy & DMRC Metro Stations	60:40
6	☐ Proctored Monitoring/ Assessment/ Evaluation/ Examinations	Online Examination in DMRC Academy Computer Lab	60:40
7	☐ On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training	OJT at DMRC Metro Stations	60:40

Annexure 6: Detailed Assessment Criteria

Detailed assessment criteria for each NOS/Module are as follows:

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
DMR/LSC/N9901: Implement metro operations training and safety procedures	<i>Training Module Overview</i>	2	2	-	1
	PC1. follow schedules for weekly activities and guidelines on punctuality, discipline, and conduct.	-	-	-	-
	PC2. conduct identity verification and maintain attendance records	-	-	-	-
	PC3. ensure adherence to training timelines and program deliverables	-	-	-	-
	<i>Safety Overview</i>	2	2	-	1
	PC4. identify the role of the safety department and follow measures for personal, passenger, and system safety	-	-	-	-
	PC5. use appropriate Personal Protective Equipment (PPE) in all designated areas	-	-	-	-
	PC6. follow the hazard identification and risk assessment processes	-	-	-	-
	<i>Store Management and Procurement</i>	2	2	-	1

PC7.	perform store management activities, including stock handling, documentation, and interdepartmental coordination for procurement.	-	-	-	-
PC8.	monitor inventory levels and ensure timely requisitions for required materials	-	-	-	-
PC9.	maintain records of procurement processes and vendor communication	-	-	-	-
<i>Overview of Telecom, Signaling, and Track Systems</i>		2	2	-	1
PC10.	identify telecom components (AFC, CCTV, PIDS, radio systems, clocks) and perform basic functional checks	-	-	-	-
PC11.	identify signaling systems (CATC, CBTC) and observe/report signal functioning during visits.	-	-	-	-
PC12.	identify P-Way components (rails, sleepers, crossings) and report track conditions through basic patrolling tasks	-	-	-	-
PC13.	report malfunctions in telecom, signaling, or track systems using the correct reporting protocols	-	-	-	-
<i>Overview of Traction, SCADA, and E&M Systems</i>		2	2	-	1
PC14.	identify traction power and SCADA components and interpret sectioning diagrams	-	-	-	-
PC15.	identify E&M systems (RSS, ASS, DG sets, UPS) and perform basic checks to understand their functionality	-	-	-	-
PC16.	report unusual system performance and assist in routine inspections	-	-	-	-
<i>OCC and Rolling Stock Overview</i>		2	2	-	1
PC17.	familiarize with OCC systems, tools, and the role of OCC controllers	-	-	-	-
PC18.	identify rolling stock components and their maintenance procedures	-	-	-	-
PC19.	report rolling stock irregularities observed during operations	-	-	-	-
<i>Operations and Customer Care</i>		2	2	-	1
PC20.	familiarize with station operations, revenue management, and crew control functions	-	-	-	-
PC21.	identify public complaint channels, possible causes, and resolve complaints using proper processes	-	-	-	-
PC22.	assist in managing passenger inquiries and ensuring customer satisfaction	-	-	-	-
<i>Practical Visits</i>		1	1	-	0.5
PC23.	conduct visits to OCC, stations, depots, and tunnels to observe layouts, facilities, and operations	-	-	-	-
PC24.	document key observations during practical visits for knowledge reinforcement	-	-	-	-
PC25.	identify operational challenges during visits and suggest improvement areas	-	-	-	-
<i>First Aid Training</i>		1	1	-	0.5
PC26.	identify the role and scope of first aid, including key human body functions (e.g., circulatory, respiratory systems)	-	-	-	-
PC27.	follow appropriate techniques for treating bleeding, fractures, burns, shock, and unconsciousness	-	-	-	-
PC28.	perform artificial respiration, CPR, and safe transportation of injured persons using stretchers	-	-	-	-
PC29.	participate in simulated first aid scenarios to enhance preparedness	-	-	-	-

	<i>Fire Fighting Systems</i>	<i>1</i>	<i>1</i>	<i>-</i>	<i>0.5</i>
	PC30. identify elements of combustion, classes of fire, and appropriate extinguishing methods	-	-	-	-
	PC31. operate active/passive fire protection systems, including alarms, fire extinguishers, and fire hydrants	-	-	-	-
	PC32. conduct practical drills and identify fire suppression equipment at metro stations	-	-	-	-
	PC33. respond to fire incidents promptly, ensuring passenger and system safety	-	-	-	-
	<i>Security in Metro Systems</i>	<i>1</i>	<i>1</i>	<i>-</i>	<i>0.5</i>
	PC34. identify security threats, red alert situations, and follow protocols for disaster management	-	-	-	-
	PC35. handle theft cases, manage abandoned persons, and lodge FIRs as per protocol	-	-	-	-
	PC36. coordinate with security personnel to mitigate security breaches effectively	-	-	-	-
	<i>Metro Rail General Rules 2020</i>	<i>1</i>	<i>1</i>	<i>-</i>	<i>0.5</i>
	PC37. interpret key provisions under Metro Rail General Rules 2020, including signals, train speed limits, and safety protocols	-	-	-	-
	PC38. follow operational procedures for maintenance, station control duties, and driverless train systems	-	-	-	-
	PC39. ensure compliance with rules for safe and efficient train operations	-	-	-	-
	<i>Safety Circulars and Contingency Plans</i>	<i>1</i>	<i>1</i>	<i>-</i>	<i>0.5</i>
	PC40. implement procedures for the imposition of TSR, axle counter reset, Train ID management, and Computer Aided Train Supervision (CATS) operation	-	-	-	-
	PC41. follow guidelines for engineering possession and maintenance activities during non-revenue hours, including hot work, solar system testing/repair, and role-play exercises	-	-	-	-
	PC42. ensure compliance with procedures for stopping trains at platforms and during operational disruptions, such as earthquakes, high winds, and floods	-	-	-	-
	PC43. coordinate degraded mode operations, including train movement during interlocking failures	-	-	-	-
	PC44. coordinate the issue, revision, updating, and deletion of SOPs, SWO/DWO, and timetable trials for new sections	-	-	-	-
	PC45. facilitate the initiation of revenue train services, including pilot train movement, ATO/UTO/ATB mode operations, and AFTC functionality checks	-	-	-	-
	PC46. follow procedures for negotiating neutral sections, dealing with pantograph failures, and monitoring Panto-OHE interface cameras	-	-	-	-
	PC47. coordinate train stabling, depot entry/exit, train movement, and fitness checks	-	-	-	-
	PC48. conduct emergency evacuation using UG facilities, mid-tunnel shafts, and walkways for detrainment of passengers due to technical failure, explosion, or fire	-	-	-	-
	PC49. operate non-ATP vehicles such as RGM and CMV/CTMC and address incidents like rail fractures, weld failures, rollback scenarios, radio communication issues and resetting of passenger alarms in train	-	-	-	-
	PC50. coordinate vehicle movement on link lines and rescue immobilized trains	-	-	-	-

	PC51. respond to fire/smoke incidents, including UG train fires, ensuring passenger and staff safety	-	-	-	-
	PC52. operate ETS/BLS plungers, remove foreign objects like kites from OHE, and follow OHE safety guidelines	-	-	-	-
	Total Marks	20	20	-	10
DMR/LSC/N0501: Monitor the operations and maintenance of E&M systems in metro railways	<i>Overview of E&M Systems</i>	<i>1</i>	<i>1</i>	<i>-</i>	<i>0.5</i>
	PC1. check the earthing and lightning protection systems at metro stations, ensuring compliance with DMRC guidelines	-	-	-	-
	PC2. monitor the installation and maintenance of earthing and lightning protection systems to avoid operational disruptions	-	-	-	-
	<i>Introduction to Variable Refrigerant Volume (VRV) System</i>	<i>2</i>	<i>2</i>	<i>-</i>	<i>1</i>
	PC3. identify the functions of VRV system components, including indoor and outdoor units	-	-	-	-
	PC4. troubleshoot VRV system cards and recommend solutions to improve performance	-	-	-	-
	<i>Site Visit to Elevated Station for VRV System</i>	<i>1</i>	<i>1</i>	<i>-</i>	<i>1</i>
	PC5. evaluate the VRV system operation on-site at elevated metro stations to identify operational issues	-	-	-	-
	PC6. document findings and propose corrective actions for optimal VRV system performance	-	-	-	-
	<i>Environmental Control System (ECS)</i>	<i>2</i>	<i>2</i>	<i>-</i>	<i>1</i>
	PC7. identify the refrigeration cycle and functions of ECS components, including chillers and cooling towers	-	-	-	-
	PC8. identify commissioning issues in ECS installations and recommend effective solutions	-	-	-	-
	<i>Tunnel Ventilation System (TVS)</i>	<i>2</i>	<i>2</i>	<i>-</i>	<i>1</i>
	PC9. check the operational modes and codal compliances for tunnel ventilation systems	-	-	-	-
	PC10. address interface challenges during TVS commissioning to ensure seamless operation	-	-	-	-
	<i>Visit to ECS and TVS Demo Room</i>	<i>1</i>	<i>1</i>	<i>-</i>	<i>0.5</i>
	PC11. observe ECS and TVS demo operations and identify common challenges during system commissioning	-	-	-	-
	PC12. record observations and apply learning to enhance practical understanding of ECS and TVS systems	-	-	-	-
	<i>Site Visit to Underground Station for ECS System</i>	<i>1</i>	<i>1</i>	<i>-</i>	<i>0.5</i>
	PC13. conduct detailed inspections of ECS systems at underground stations to evaluate their functionality	-	-	-	-
	PC14. collaborate with the team to resolve identified ECS issues and improve operational efficiency	-	-	-	-

	<i>Fire Detection and Suppression Systems</i>	2	2	-	1
	PC15. examine fire detection and suppression systems for adherence to codal requirements in metro stations	-	-	-	-
	PC16. identify commissioning challenges in fire systems, particularly in tunnels, and recommend improvements	-	-	-	-
	<i>Visit to Underground Station for TVS and Fire Equipment</i>	1	1	-	0.5
	PC17. check the TVS and fire systems on-site to ensure compliance and functionality in underground stations	-	-	-	-
	PC18. document and address discrepancies in TVS and fire systems for improved safety measures	-	-	-	-
	<i>Hydraulic Systems</i>	2	2	-	1
	PC19. check the water supply and wastewater disposal systems for proper operation and maintenance	-	-	-	-
	PC20. analyze case studies of hydraulic system failures during commissioning and suggest preventive measures	-	-	-	-
	<i>Site Visit to PTM</i>	1	1	-	0.5
	PC21. check Pump Testing Machines (PTM) during site visits to verify operational efficiency	-	-	-	-
	PC22. identify maintenance needs and recommend best practices for PTM management	-	-	-	-
	<i>Station Illumination</i>	2	2	-	0.5
	PC23. assess the illumination levels at metro stations and ensure they meet percentage lighting requirements	-	-	-	-
	PC24. implement energy-efficient solutions to enhance station illumination while reducing operational costs	-	-	-	-
	<i>Building Management System (BMS)</i>	2	2	-	1
	PC25. check the operation of Building Management Systems, including NT-SCADA features like alarms, events, and trends	-	-	-	-
	PC26. monitor system backups and ensure accurate report generation for BMS performance analysis	-	-	-	-
	Total Marks	20	20	-	10
DMR/LSC/N0502: Monitor and maintain the underground and elevated station systems	<i>Site Visit to Underground Stations for BMS and NTS</i>	1	1	-	1
	PC1. conduct visits to underground stations to assess Building Management System (BMS) functionality and ensure adherence to operational standards	-	-	-	-
	PC2. verify the integration and effectiveness of Network Time Synchronization (NTS) in supporting BMS operations	-	-	-	-
	<i>Familiarization with UPS Systems</i>	2	2	-	1
	PC3. identify the types and working principles of Uninterruptible Power Supply (UPS) systems used in metro stations	-	-	-	-

PC4.	follow the procedure for paralleling UPS systems and batteries for continuous power supply	-	-	-	-
<i>Familiarization with DG Systems in Underground Stations</i>		1	1	-	1
PC5.	familiarize with the parts, functionality, and interlocking of Diesel Generator (DG) systems with Auxiliary Substations (ASS)	-	-	-	-
PC6.	identify general problems in DG systems and follow corrective maintenance procedures	-	-	-	-
<i>Site Visit for DG and UPS Systems in Underground Stations</i>		1	1	-	1
PC7.	conduct a detailed site visit to inspect the DG systems at underground stations for operational efficiency	-	-	-	-
PC8.	check the UPS system's performance and maintenance records for compliance with safety standards	-	-	-	-
<i>LT Power Distribution at Underground/RC Stations</i>		2	2	-	1
PC9.	identify different types of loads in LT power distribution systems and their requirements	-	-	-	-
PC10.	familiarize with the ACB interlocking schemes in different operational phases and review relay settings for discrimination	-	-	-	-
<i>Site Visit to Elevated Stations</i>		1	1	-	1
PC11.	check the elevated station power distribution systems, DG systems, and fire protection mechanisms	-	-	-	-
PC12.	evaluate the functionality of pumps, UPS systems, and lighting systems during operational hours	-	-	-	-
<i>Night Visit for Maintenance Procedures</i>		2	2	-	0.5
PC13.	conduct night visits to observe and ensure adherence to maintenance procedures in elevated systems	-	-	-	-
PC14.	verify the documentation and adherence to maintenance schedules during night inspections	-	-	-	-
<i>Operation of ASC at OCC/SHPK</i>		2	2	-	0.5
PC15.	familiarize with the role of Automatic Supervisory Control (ASC) during tunnel ventilation system operation	-	-	-	-
PC16.	implement appropriate measures during SCADA communication failures to ensure operational continuity	-	-	-	-
<i>Engineers' Roles and Responsibilities</i>		2	2	-	0.5
PC17.	familiarize with the roles and responsibilities of junior engineers and staff for E&M, ECS, and fire protection systems	-	-	-	-
PC18.	maintain and review records to ensure proper upkeep of maintenance logs and inspection schedules	-	-	-	-
<i>Review of Maintenance Schedules and Procedures</i>		1	1	-	0.5
PC19.	evaluate the adherence to maintenance schedules, Special Maintenance Instructions (SMI), and Standard Operating Instructions (SOI)	-	-	-	-
PC20.	maintain regular and detailed records and conduct regular checks of E&M works	-	-	-	-
<i>Review of Mock Drills</i>		1	1	-	0.5

	PC21. review the effectiveness of various E&M mock drills and document lessons learned	-	-	-	-
	PC22. maintain a record of tools used during mock drills to ensure readiness for emergencies	-	-	-	-
	<i>Site Visit for Tools Inspection</i>	1	1	-	0.5
	PC23. conduct site visits to underground stations to inspect the condition and availability of tools required for E&M operations	-	-	-	-
	PC24. verify the compliance of tools with operational standards and safety guidelines	-	-	-	-
	<i>Failure Analysis of E&M Systems</i>	2	2	-	0.5
	PC25. analyze failures in E&M systems and identify root causes to prevent recurrence	-	-	-	-
	PC26. implement corrective actions and prepare detailed reports on failure analysis outcomes	-	-	-	-
	<i>Site Visit to Tunnel Training Centre</i>	1	1	-	0.5
	PC27. conduct visits to the tunnel training center to observe the operation of E&M systems in tunnels	-	-	-	-
	PC28. assess the functionality of trackway sprinkler systems and other emergency services	-	-	-	-
	Total Marks	20	20	-	10
DMR/LSC/N0503: Monitor energy utilization and infrastructure maintenance in metro stations	<i>Night Visits for Maintenance Activities in Underground Stations</i>	3	3	-	1
	PC1. check ongoing E&M maintenance activities during night visits to ensure adherence to standard operating procedures and safety regulations	-	-	-	-
	PC2. verify the functionality and maintenance status of critical systems such as power distribution, lighting, ventilation, and escalators	-	-	-	-
	<i>Energy Conservation and Management Practices</i>	3	3	-	1
	PC3. monitor and analyze energy consumption trends to identify potential areas for conservation	-	-	-	-
	PC4. follow appropriate energy-saving measures without compromising operational efficiency	-	-	-	-
	<i>Power Supply Distribution and Cooling Systems</i>	4	3	-	2
	PC5. evaluate the power supply distribution scheme at stations, ensuring compliance with DMRC standards and safety protocols	-	-	-	-
	PC6. check the performance and maintenance of air-cooled chillers and aerosol fire suppression systems	-	-	-	-
	<i>Earthing, Water Treatment, and Pumping Systems</i>	3	4	-	2
	PC7. check earthing systems and ensure proper grounding to mitigate electrical hazards	-	-	-	-
	PC8. coordinate the maintenance of water treatment plants (WTP), water supply pumps, seepage, and sewage systems	-	-	-	-
	<i>Environmental Control Systems (ECS) and Tunnel Ventilation Systems (TVS)</i>	4	3	-	2
	PC9. check ECS and TVS in underground stations for effective temperature and air quality management	-	-	-	-

	PC10. ensure the ECS and TVS systems meet operational requirements and comply with metro safety standards	-	-	-	-
	<i>Thermal Energy Storage Systems</i>	3	4	-	2
	PC11. review the design and functioning of thermal energy storage systems at elevated and underground stations	-	-	-	-
	PC12. verify the integration and efficiency of thermal energy storage systems in reducing energy consumption during peak hours	-	-	-	-
	Total Marks	20	20	-	10
DMR/LSC/N0504: Monitor and ensure safe escalator and elevator operations in metro systems	<i>Escalator Basics</i>	3	3	-	2
	PC1. identify the components, terminology, and specifications of an escalator, including the bottom pit, top pit, comb plate, skirt, chains, and track system	-	-	-	-
	PC2. monitor commissioning activities of escalators to identify and address common issues such as alignment and safety calibration	-	-	-	-
	<i>Visit to Escalator Simulator</i>	2	2	-	1
	PC3. familiarize with the functions of escalators, sensors, and systems and applicable safety measures using the simulator	-	-	-	-
	PC4. perform analysis of escalator failures using the simulator and propose corrective actions	-	-	-	-
	<i>Elevator Basics</i>	3	3	-	2
	PC5. identify the components, terminology, and specifications of an elevator, including traction machines, hoisting ropes, elevator cars, and rescue mechanisms	-	-	-	-
	PC6. monitor elevator commissioning activities to ensure compliance with design specifications and resolve common operational issues	-	-	-	-
	<i>Elevator Rescue Practical in Elevators</i>	3	3	-	1
	PC7. practice elevator rescue in the training facilities	-	-	-	-
	PC8. follow the applicable standard procedures during mock elevator rescue drills and assess the performance of personnel to ensure readiness in emergencies	-	-	-	-
	<i>Site Visit to See Maintenance Practices in Escalators</i>	2	2	-	1
	PC9. evaluate maintenance for escalators and ensure adherence to standard operating procedures	-	-	-	-
	PC10. report discrepancies in maintenance and recommend improvements for escalator systems	-	-	-	-
	<i>Site Visit to See Maintenance Practices in Elevators</i>	2	2	-	1
	PC11. check maintenance practices for elevators, including lubrication, alignment, and safety checks	-	-	-	-
	PC12. verify compliance with maintenance schedules and document findings for elevator systems	-	-	-	-
	<i>Failure Analysis of Escalators and Elevators and RAM Parameters</i>	3	3	-	1
	PC13. conduct a failure analysis to identify root causes and recurring issues in escalators and elevators	-	-	-	-

	PC14. evaluate Reliability, Availability, Maintainability (RAM) parameters and suggest appropriate measures to improve system efficiency	-	-	-	-
	<i>CBT of Lift and Escalator in Escalator Simulator Room</i>	2	2	-	1
	PC15. participate in computer-based training sessions to reinforce theoretical and practical knowledge of lift and escalator systems	-	-	-	-
	PC16. use Computer-Based Training (CBT) modules to simulate and solve operational scenarios for escalators and elevators	-	-	-	-
	Total Marks	20	20	-	10
DGT/VSQ/N0101: Employability Skills (30 Hours)	<i>Introduction to Employability Skills</i>	1	1	-	-
	PC1. understand the significance of employability skills in meeting the job requirements	-	-	-	-
	<i>Constitutional values – Citizenship</i>	1	1	-	-
	PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
	<i>Becoming a Professional in the 21st Century</i>	1	3	-	-
	PC3. explain 21st Century Skills such as Self- Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.	-	-	-	-
	<i>Basic English Skills</i>	2	3	-	-
	PC4. speak with others using some basic English phrases or sentences	-	-	-	-
	<i>Communication Skills</i>	1	1	-	-
	PC5. follow good manners while communicating with others	-	-	-	-
	PC6. work with others in a team	-	-	-	-
	<i>Diversity & Inclusion</i>	1	1	-	-
	PC7. communicate and behave appropriately with all genders and PwD	-	-	-	-
	PC8. report any issues related to sexual harassment	-	-	-	-
	<i>Financial and Legal Literacy</i>	3	4	-	-
	PC9. use various financial products and services safely and securely	-	-	-	-
	PC10. calculate income, expenses, savings etc.	-	-	-	-
	PC11. approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
	<i>Essential Digital Skills</i>	4	6	-	-
	PC12. operate digital devices and use its features and applications securely and safely	-	-	-	-
	PC13. use internet and social media platforms securely and safely	-	-	-	-
	<i>Entrepreneurship</i>	3	5	-	-
	PC14. identify and assess opportunities for potential business	-	-	-	-
	PC15. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
	<i>Customer Service</i>	2	2	-	-
	PC16. identify different types of customers	-	-	-	-
	PC17. identify customer needs and address them appropriately	-	-	-	-

	PC18. follow appropriate hygiene and grooming standards	-	-	-	-
	<i>Getting ready for apprenticeship & Jobs</i>	1	3	-	-
	PC19. create a basic biodata	-	-	-	-
	PC20. search for suitable jobs and apply	-	-	-	-
	PC21. identify and register apprenticeship opportunities as per requirement	-	-	-	-
	Total Marks	20	30	-	-
Grand Total		120	130	-	50

Annexure 7: Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

1. Assessment System Overview:

- Batches assigned to the assessment agencies for conducting the assessment on SIDH
- The batch allocation Matrix prepared for each month based on previous months' performance of AAs, which determines the quantum of Assessment which can be allocated to each AA for a month
- Post allocation of assessment, Assessment agencies send the assessment confirmation to AB
- Assessment agency deploys the ToA certified Assessor for executing the assessment
- AB monitors the assessment process.

2. Testing Environment:

- A combination of Theory and practical/demonstration test is deployed to assess knowledge and Skill respectively of Learners.
- Assessment is conducted at Training center in in-person/offline mode
- For Skill assessment, environment is simulated to create a realistic Working Environment that should replicate the key features of the workplace. In job roles, where it is difficult to replicate the same, the OJT assessment is implemented.
- During the practical task, trainees are assessed on their workmanship, quality of finished product, time management, etc., based on the performance criteria (PC), knowledge and understanding and their professional and soft skills as specified in the qualification pack.
- Knowledge assessment is done through closed ended questions up to level 4 and from level 5 onwards, it is mixture of open ended and closed ended questions

3. Assessment Quality Assurance levels/Framework

- Assessment criteria is developed for each QP which acts as a guide for developing question set /banks
- Sample questions aligned with Assessment criteria for each QP are developed by AB and validated by industry
- Taking reference of Assessment criteria and Sample Questions, AAs create the question bank which is further validated by AB
- Questions are mapped to the specified assessment criteria
- It is mandatory that Assessor and Trainer must be ToA certified & ToT Certified respectively
- Continuous Monitoring through virtual and In-person mode are conducted to ensure the assessment is conducted as per stipulated process
- Process and Technical audit of assessment batches by quality team are conducted to avoid the errors in assessment process
- A well -defined comprehensive framework of NON-COMPLIANCE MATRIX is defined and implemented to identify the non-compliance made by assessor and AA and punitive actions are taken correspondingly.
- The capacity building sessions are conducted regularly for assessors and assessment agencies to update them about best practices in assessment

4. Types of evidence or evidence-gathering protocol:

- Post Assessment, the evidences are uploaded by Assessor to assessment agency and further assessment agency to AB as per stipulated TAT
- Evidences are broadly the photographic and video graphic in nature
- Assessment agencies upload the evidence on SIDH and detailed evidence on AB digital platform (ZoHO)
- Evidences are; NOS wise-Geotagged photographs and videos of Theory Test & Practical Tasks, Attendance sheet, result summary sheet, group photographs.

5. Method of verification or validation:

- The process and technical audit of assessment batches are done by AB

- Attendance of each candidate is verified and it is ensured that only those candidates are assessed by assessors who are meeting the stipulated minimum percentage of attendance
- The result of each candidate is verified, it is verified that that result on SIDH are matching with respect to summary sheet submitted by AAs
- Under detailed technical audit for sample of batches, the knowledge and skill assessment results for each candidate is checked in technical aspect.
- All the evidences of batches are preserved on server of AB digital platform

On the Job Training:

On job training (OJT), candidates undergo training and leaning at actual workplace for a fixed period of time and a certain weightage of assessment is allocated out of total skill weightage of Qualification Pack for undergoing OJT as stipulated by DMRA. This OJT score and assessors' end point score are combined to arrive at final Marking/grading of trainees' skill test. The OJT score is determined by Supervisor of company under which candidates undergo on job training.

Annexure 8: Acronym and Glossary

Acronym

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training
DMRA	Delhi Metro Rail Academy
MR	Metro Railway
PSI	Power Supply Installation
SCADA	Supervisory Control and Data Acquisition
OHE	Overhead Electrification
DERC	Delhi Electricity Regulatory Commission
HERC	Haryana Electricity Regulatory Commission
UPPCL	Uttar Pradesh Power Corporation Limited
RSS	Remote Sub-Station
PTW	Permit to Work
TPC	Traction Power Controller
OCC	Operations Control Center
CBs	Circuit Breakers
CT	Current Transformer
PT	Potential Transformer
LA	Lightning Arrestor
GIS	Gas Insulated Switchgear
BDV	Breakdown Voltage
DGA	Dissolved Gas Analysis
SAS	Substation Automation System
LVS	Low Voltage Switchgear
ROCS	Railway Overhead Catenary System
ATD	Auto Tensioning Device
DPR	Daily Progress Report
SHPK	Sub Head Post Kiln
CMV	Control and Monitoring Voltage
OMV	Operating and Monitoring Voltage
SIDH	Skill India Digital Hub

Glossary

Term	Description
National Occupational Standards (NOS)	NOS define the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities on the basis of their main economic function, product, service or technology.
Long Term Training	Long-term skilling means any vocational training program undertaken for a year and above. https://ncvet.gov.in/sites/default/files/NCVET.pdf