National Power and Electrical Matrix 1

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													HV Protection					Aerial Lines				
	Traction Overhead Lineworker - National (In-training)	Traction Overhead Lineworker - National	Traction Switching Operator - National	Distribution Overhead Lineworker - National (In-training)	Distribution Overhead Lineworker - National	Distribution Switching Operator - National	Substation Electrician - National	Substation Technician - National	Substation Switching Operator - National	Cable Jointer (Level 1) - National	Cable Jointer (Level 2) - National	Cable Jointer (Level 3) - National	HV Protection - Designer - National	HV Protection - Testing & Commissioning Engineer - National	HV Protection - Maintenance Engineer - National	HV Protection - Maintenance Engineer - National	HV Protection - Asset Engineer - National	Aerial Lines - Designer - National	Aerial Lines - Testing & Commissioning Engineer - National	Aerial Lines - Maintenance Engineer - National	Aerial Lines - Construction Engineer - National	Aerial Lines - Asset Engineer - National
Rail Safety Worker Requirements																						
Rail Safety Worker (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	^	^	^	^	^	^	^	^	^	^
Medical Requirements																						
Railway Medical Categories (1 or 2 or 3 or 4)	M - Cat 3	M - Cat 3	M - Cat 3	M - Cat 3	M - Cat 3	M - Cat 3	M - Cat 3	M - Cat 3	M - Cat 3	M - Cat 3	M - Cat 3	M - Cat 3	#	#	#	#	#	#	#	#	#	#
Competency Requirements																						
Safely Access the Rail Corridor - TLIF2080/TLIF0020	M	M	M	M	M	M	M	M	M	M	M	M	#	#	#	#	#	#	#	#	#	#
Work Safely in the Construction Industry - CPCCOHS1001/CPCWHS1001	M	M	M	M	M	M	M	M	M	M	M	M	#	#	#	#	#	#	#	#	#	#
UETDRSB001 - Perform substation switching operations to a given schedule									M													
UETDRRT013 - Perform rail traction switching operations to a given schedule			M																			
UETDRIS017 - Perform high voltage field switching operation to a given schedule						M																
UETDRDU013 - Joint, terminate and maintain high-voltage underground polymeric cable											M											
Qualification Requirements																						
UET30721 - Certificate III in ESI - Rail Traction		M	M																			
UET30621 - Certificate III in ESI - Distribution Overhead					M																	
UEE30820 - Cert III in Electrotechnology Electrician							M	M	1M	1M	1M											
UET30821 - Certificate III in ESI - Distribution Underground										1M	1M	M										
UET40522 Cert IV in ESI – Power Systems Substations								M														
UEE50420 - Diploma of Electrical Engineering									1M					1M	1M	1M	1M	1M	1M	1M	1M	1M
UEE53020 - Diploma of Electrical Systems Engineering									1M					1M	1M	1M	1M	1M	1M	1M	1M	1M
UET50221 - Diploma of ESI - Power Systems									1M					1M	1M	1M	1M	1M	1M	1M	1M	1M
UET60222 - Advanced Diploma of ESI - Power Systems									1M					1M	1M	1M	1M	1M	1M	1M	1M	1M
Bachelor of Engineering (Civil)																					1M	
Bachelor of Engineering (Electrical)									1M				1M	1M	1M	1M	1M	1M	1M	1M	1M	1M
Bachelor of Engineering (Mechanical)																		1M		1M	1M	1M
Bachelor of Engineering (Structural)																		1M		1M	1M	1M
Bachelor of Engineering (Telecommunications)																	1M			1M		1M
Bachelor of Engineering (Mechatronics)													1M	1M	1M	1M	1M			1M	1M	1M
Refresher Units (12 Months)																						
HLTAID009 - Provide cardiopulmonary resuscitation	M	M	M	M	M	M	M	M	M	M	M	M										
UETDRMP004 - Perform elevated work platform controlled descent escape	M	M		M	M																	
Refresher UETDRMP005 - Perform elevated work platform rescue.	M	M		M	M																	
Refresher UETDRMP007 - Perform rescue from a live low voltage panel				M	M		M	M	M													
Refresher UETDRMP006 - Perform pole top rescue	M	M		M	M																	
Key Notes																						

M	This item is mandatory
1M	At least one of the items in this cluster is mandatory
1M*	For construction of underground pit, duct route, and cable route construction only
#	If you work on track, a network access role and medical may be required
^	Only where the work involves certification as to the safety of rail infrastructure or any part or component of rail infrastructure
	Holding a National Role may not allow you to undertake work in certain jurisdictions.
	Equivalent competencies on the National Training Register will be accepted

National Power and Electrical Matrix 2

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	Overhead Conductor Systems						Traction and HV Cables						Traction and Distribution Substations				
	Overhead Conductor Systems - OCS Designer - National	Overhead Conductor Systems - Structural Designer - National	Overhead Conductor Systems - Testing & Commissioning Engineer - National	Overhead Conductor Systems - Maintenance Engineer - National	Overhead Conductor Systems - Construction Engineer - National	Overhead Conductor Systems - Asset Engineer - National	Traction & HV Electrical Cables Designer - National	Traction & HV Cables - Testing & Commissioning Engineer - National	Traction & HV Cables - Maintenance Engineer - National	Traction & HV Cables - Electrical Construction Engineer - National	Traction & HV Cables - Electrical Construction Engineer (underground pit, duct route, and cable route construction only) - National	Traction & HV Cables - Asset Engineer - National	Substation Electrical Designer - National	Substation - Testing & Commissioning Engineer - National	Substation - Maintenance Engineer - National	Substation - Electrical Construction Engineer - National	(National) Substation - Asset Engineer
Rail Safety Worker Requirements																	
Rail Safety Worker (Y/N)	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^
Medical Requirements																	
Railway Medical Categories (1 or 2 or 3 or 4)	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Competency Requirements																	
Safely Access the Rail Corridor - TLIF2080/TLIF0020	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Work Safely in the Construction Industry - CPCCOHS1001/CPCWHS1001	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Qualification Requirements																	
UEE50420 - Diploma of Electrical Engineering	1M		1M	1M	1M	1M	1M	1M	1M	1M		1M		1M	1M	1M	1M
UEE53020 - Diploma of Electrical Systems Engineering	1M		1M	1M	1M	1M	1M	1M	1M	1M		1M		1M	1M	1M	1M
UET50221 - Diploma of ESI - Power Systems	1M		1M	1M	1M	1M	1M	1M	1M	1M		1M		1M	1M	1M	1M
UET60222 - Advanced Diploma of ESI - Power Systems	1M		1M	1M	1M	1M	1M	1M	1M	1M		1M		1M	1M	1M	1M
Bachelor of Engineering (Electrical)	1M		1M	1M	1M	1M	1M	1M	1M	1M		1M	1M	1M	1M	1M	1M
Bachelor of Engineering (Mechanical)	1M		1M	1M	1M	1M				1M						1M	1M
Bachelor of Engineering (Structural)	1M	1M		1M	1M	1M				1M	1M*					1M	1M
Bachelor of Engineering (Telecommunications)						1M											1M
Bachelor of Engineering (Mechatronics)	1M		1M	1M	1M	1M				1M		1M				1M	1M
Key Notes																	
M	This item is mandatory																
1M	At least one of the items in this cluster is mandatory																
1M*	For construction of underground pit, duct route, and cable route construction only																
#	If you work on track, a network access role and medical may be required																
^	Only where the work involves certification as to the safety of rail infrastructure or any part or component of rail infrastructure																
	Holding a National Role may not allow you to undertake work in certain jurisdictions.																
	Equivalent competencies on the National Training Register will be accepted																

National Power and Electrical Matrix 3

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	Earthing, bonding, electrolysis, & lightning					Electrical control systems (SCADA)					Specialist Disciplines					
	EBEL Designer - National	EBEL - Testing & Commissioning Engineer - National	EBEL - Maintenance Engineer - National	EBEL - Construction Engineer - National	EBEL - Asset Engineer - National	SCADA Designer - National	SCADA - Testing & Commissioning Engineer - National	SCADA - Maintenance Engineer - National	SCADA - Construction Engineer - National	SCADA - Asset Engineer - National	EMC - National	Power System Equipment Specialist - National	Electrical Network Planning and Modelling - National	Operating and Safety Equipment - National	Maintenance Facility Engineer - National	Operations Engineer - National
Rail Safety Worker Requirements																
Rail Safety Worker (Y/N)	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^
Medical Requirements																
Railway Medical Categories (1 or 2 or 3 or 4)	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Competency Requirements																
Safely Access the Rail Corridor - TLIF2080/TLIF0020	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Work Safely in the Construction Industry - CPCCOHS1001/CPCWHS1001	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Qualification Requirements																
UEE50420 - Diploma of Electrical Engineering		1M	1M	1M	1M	1M	1M	1M	1M	1M				1M	1M	
UEE53020 - Diploma of Electrical Systems Engineering		1M	1M	1M	1M	1M	1M	1M	1M	1M				1M	1M	
UET50221 - Diploma of ESI - Power Systems		1M	1M	1M	1M	1M	1M	1M	1M	1M				1M	1M	
UET60222 - Advanced Diploma of ESI - Power Systems		1M	1M	1M	1M	1M	1M	1M	1M	1M				1M	1M	
Bachelor of Engineering (Electrical)	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M
Bachelor of Engineering (Telecommunications)					1M	1M	1M	1M	1M	1M						
Bachelor of Engineering (Mechatronics)				1M	1M	1M	1M	1M	1M	1M					1M	
Key Notes																
M	This item is mandatory															
1M	At least one of the items in this cluster is mandatory															
1M*	For construction of underground pit, duct route, and cable route construction only															
#	If you work on track, a network access role and medical may be required															
^	Only where the work involves certification as to the safety of rail infrastructure or any part or component of rail infrastructure															
	Holding a National Role may not allow you to undertake work in certain jurisdictions.															
	Equivalent competencies on the National Training Register will be accepted															

National Power and Electrical Matrix 3

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Role	Matrix	Descriptions
Traction Overhead Lineworker - National (In-training)	1	Traction Lineworker apprentice or trainee to install and maintain traction overhead lines and equipment under supervision. Also includes qualified non-traction line worker transitioning to qualified traction overhead line worker.
Traction Overhead Lineworker - National	1	Traction Lineworker are capable to install and maintain traction overhead lines and equipment.
Traction Switching Operator - National	1	Traction Switching Operator – National may locally operate traction overhead equipment and issue access permits.
Distribution Overhead Lineworker - National (In-training)	1	Distribution Lineworker apprentice or trainee to install and maintain distribution overhead lines and equipment under supervision. Also includes qualified non-distribution line worker transitioning to qualified distribution overhead line worker.
Distribution Overhead Lineworker - National	1	Distribution Lineworker are capable to install and maintain distribution overhead lines and equipment.
Distribution Switching Operator - National	1	Distribution Field Operator – National may locally operate distribution high voltage field equipment and issue access permits.
Substation Electrician - National	1	Substation Electrician – National may perform electrical work within a substation.
Substation Technician - National	1	Substation Technician – National may perform electrical work, requiring a Cert IV in ESI – Power Systems Substations, within a substation.
Substation Switching Operator - National	1	Substation Operator – National may locally operate distribution or traction high voltage substation and field equipment and issue access permits.
Cable Jointer (Level 1) - National	1	Applicable to XLPE cables for up to 6.6 kV, including 1500 V DC cables.
Cable Jointer (Level 2) - National	1	Applicable to 11 kV & 22 kV XLPE cables (does not apply to 25 kV cables).
Cable Jointer (Level 3) - National	1	Applicable to all high voltage cables.
Cable Jointer Note	1	A person who fulfils the requirement of the higher level cable jointing role will also be able to undertake the types of cable jointing work prescribed for the lower level roles, provided that the worker has received the relevant domain-specific training.
HV Protection - Designer - National	1	HV Protection Designer designs HV and traction system protection systems, including consideration of discrimination and fault localisation, speed of operation, and identification / elimination of blind spots. Determine appropriate settings for HV and traction system protection schemes.
HV Protection - Testing & Commissioning Engineer - National	1	Plan, oversight, and verify the testing and commissioning of HV and traction system protection systems.
HV Protection - Maintenance Engineer - National	1	Plan, oversight and provide technical support for the maintenance of HV and traction system protection systems.
HV Protection - Maintenance Engineer - National	1	Plan, oversight, and verify the installation of HV protection and traction system protection systems.
HV Protection - Asset Engineer - National	1	Oversight of changes to HV Protection asset configuration and the ongoing suitability of that configuration, monitor HV and traction system protection systems asset condition, and plan for life extension or replacement of asset.
Aerial Lines - Designer - National	1	Design HV aerial line layouts, and allocations including determination of static and dynamic geometric parameters and forces.
Aerial Lines - Testing & Commissioning Engineer - National	1	Plan, oversight, and verify the testing and commissioning of HV aerial lines.
Aerial Lines - Maintenance Engineer - National	1	Plan, oversight, and provide technical support for the maintenance of HV aerial lines.
Aerial Lines - Construction Engineer - National	1	Plan, oversight, and verify the construction of HV aerial lines.
Aerial Lines - Asset Engineer - National	1	Plan, asset configuration and verify of HV aerial lines. Monitor HV aerial lines asset condition and plan for life extension, replacement or de-commissioning of asset.
Overhead Conductor Systems - OCS Designer - National	2	Design OCS systems, layouts, and allocations including determination of static and dynamic geometric parameters and forces.
Overhead Conductor Systems - Structural Designer - National	2	Design support structures for OCS.
Overhead Conductor Systems - Testing & Commissioning Engineer - National	2	Plan, oversight, and verify the testing and commissioning of OCS.
Overhead Conductor Systems - Maintenance Engineer - National	2	Plan, oversight, and provide technical support for the maintenance of OCS.
Overhead Conductor Systems - Construction Engineer - National	2	Plan, oversight, and verify the construction of OCS.
Overhead Conductor Systems - Asset Engineer - National	2	Plan, asset configuration and verify of OCS. Monitor OCS asset condition and plan for life extension, replacement or de-commissioning of asset.
Traction & HV Electrical Cables Designer - National	2	Design traction and HV electrical cable systems layouts, and allocations including determination of static and dynamic geometric parameters and forces, and thermal effects.
Traction & HV Cables - Testing & Commissioning Engineer - National	2	Plan, oversight, and verify the testing and commissioningof traction and HV cable systems.
Traction & HV Cables - Maintenance Engineer - National	2	Plan, oversight, and provide technical support for the maintenance of traction and HV cable systems.
Traction & HV Cables - Electrical Construction Engineer - National	2	Plan, oversight, and verify the installation of traction and HV cable systems.
Traction & HV Cables - Electrical Construction Engineer (underground pit, duct route, and cable route construction only) - National	2	Plan, asset configuration and verify of traction and HV cable systems. Monitor traction and HV cable systems asset condition and plan for replacement or de-commissioning of asset.
Traction & HV Cables - Asset Engineer - National	2	Design substation layouts, and allocations including determination of static and dynamic geometric parameters and forces, and thermal effects.
Substation Electrical Designer - National	2	Plan, oversight, and verify the testing and commissioning of substations.
Substation - Testing & Commissioning Engineer - National	2	Plan, oversight, and provide technical support for the maintenance of substations.
Substation - Maintenance Engineer - National	2	Plan, oversight, and verify the electrical construction of substations.
Substation - Electrical Construction Engineer - National	2	Plan, asset configuration and verify of substations. Monitor substation asset condition and plan for life extension, replacement or de-commissioning of asset.
(National) Substation - Asset Engineer	2	Design earthing, bonding, electrolysis and lightning protection systems layouts and allocations including determination of step and touch potentials, static and dynamic geometric parameters and forces, and thermal effects.
EBEL Designer - National	3	Plan, oversight, and verify the testing and commissioning of earthing, bonding, electrolysis and lightning protection systems.
EBEL - Testing & Commissioning Engineer - National	3	Plan, oversight, and provide technical support for the maintenance of earthing, bonding, electrolysis and lightning protection systems.
EBEL - Maintenance Engineer - National	3	Plan, oversight, and verify the installation of earthing, bonding, electrolysis and lightning protection systems.
EBEL - Construction Engineer - National	3	Plan, asset configuration and verify of earthing, bonding, electrolysis and lightning protection systems. Monitor earthing, bonding, electrolysis and lightning protection systems asset condition and plan for life extension, replacement or de-commissioning of asset.
EBEL - Asset Engineer - National	3	Design SCADA systems layouts, and allocations including determination of static and dynamic geometric parameters and forces.
SCADA Designer - National	3	Plan, oversight, and verify the testing and commissioning of SCADA systems.
SCADA - Testing & Commissioning Engineer - National	3	Plan, oversight, and provide technical support for the maintenance of SCADA systems.
SCADA - Maintenance Engineer - National	3	Plan, oversight, and verify the installation of SCADA systems.
SCADA - Construction Engineer - National	3	Plan, asset configuration and verify of SCADA systems. Monitor SCADA systems asset condition and plan for life extension, replacement or de-commissioning of asset.
SCADA - Asset Engineer - National	3	Provide specialist advice, prepare reports, and identify technical requirements in relation to EMC systems.
EMC - National	3	Provide specialist advice, identify technical requirements. prepare reports, and prepare specifications in relation to power system equipment.
Power System Equipment Specialist - National	3	Provide specialist advice, *create models and analyse modelling outputs, prepare reports, and identify technical requirements in relation to electrical network planning and modelling.*
Electrical Network Planning and Modelling - National	3	Provide specialist advice, prepare reports, and identify technical requirements in relation to operating and safety equipment. Consult with users, ensure alignment with power system equipment and applicable network operating rules. Prepare operating and maintenance instructions.
Operating and Safety Equipment - National	3	Provide specialist advice, prepare reports, plans, and identify technical requirements in relation to maintenance facilities engineering. Design and commission systems for interlocking of access to hazardous areas (e.g., pantographs), shore supplies, and cranes, lifting jacks and the like.
Maintenance Facility Engineer - National	3	Provide specialist advice, prepare reports, and identify technical requirements in relation to the oversight of the on-going operation of high voltage and traction power systems to ensure safety, service delivery, and asset integrity.