
	Occupational Health and Safety Risk Assessment (HIRA) Welbedacht Dam - Van Stadensrust 11 kV Capacitor Bank - Driedorp Boesmanskop 22kV line to Workshop Substation - Koria 11kV line from Work-shop Substation		Template Identifier	240-43921898	Rev	7
			Document Identifier	240-70044602	Rev	1
			Review Date	May 2024		

DATE OF REVIEW	October 2023	DEVELOPED BY NAME	EA Eiman, M Nkohla	SIGNATURE	
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N O	ACTIVITY / PROCESS / OPERATIONS / PRODUCTS/SERVICES	SAFETY & HEALTH HAZARDS including ENVIRONMENTAL ASPECTS	SAFETY & HEALTH RISK including ENVIRONMENTAL IMPACT	RISK RATING BEFORE CONTROLS			CONTROL MEASURES (Eliminate, Substitute, Engineering controls, signage/warning/administrative, PPE)	RISK RATING AFTER CONTROLS		
				LIKELIHOOD	CONSEQUENCE	RISK INDEX		LIKELIHOOD	CONSEQUENCE	RISK INDEX
1	Driving to and from site	Not adhering to legislation.	Safety Risk							
		Speeding	Safety Risk							
		Driving on dangerous pothole road.	Safety Risk							
		Dirt Roads.	Safety Risk							
		High speeds/ Driving recklessly.	Safety Risk							
		Fatigue.	Safety Risk							
		Other vehicles driving unsafely.	Safety Risk							
		Slow moving plant obstructing traffic movement/flow	Safety Risk							
		Animals on the road	Safety Risk							
		Exposure to Dust.	Safety Risk							
2	Transporting material, equipment and people on the same vehicle	Vehicle involved in an accident	Safety Risk							
3	Fire prevention	Uncontrolled Fires	Safety Risk							
4	Manual handling	Overexertion, sprains and strains	Safety Risk							
		Incorrect lifting and handling procedures	Safety Risk							
5	Work areas / environment	Snakes, Insects etc	Safety Risk							
		Adverse Weather Conditions	Safety Risk							
		Loose gravel and stone leading to slips, trips and falls	Safety Risk							
		Entrance to work area located on congested street	Safety Risk							
6	Use of hand tools	Defective hand tools	Safety Risk							
		Incorrect tool for the job	Safety Risk							

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				LIKELIHOOD	CONSEQUENCE	RISK INDEX		LIKELIHOOD	CONSEQUENCE	RISK INDEX
7	Use of plant and machinery	Exposed moving parts of machinery	Safety Risk							
		Use of untrained operators	Safety Risk							
		Operators not medically fit	Safety Risk							
8	Use portable electrical tools	Defective electrical tool,	Safety Risk							
		Unsafe, sub-standard tools	Safety Risk							
		Exposed cables and leads	Safety Risk							
		Trailing cables leading to trips and falls	Safety Risk							
		Untrained employees using portable electrical tools	Safety Risk							
9	Stacking and storage of material & Housekeeping	Unstable stacking of goods / materials / Unsafe Stacking Procedures	Safety Risk							
		Stacking & Storage area not identified and demarcated	Safety Risk							
		Pinch Points	Safety Risk							
		Unstable Aggregate or Sand	Safety Risk							
		Stacks collapsing	Safety Risk							
		Overexertion	Safety Risk							
		Walkways obstructed	Safety Risk							
		Lack of demarcation	Safety Risk							
10	Site establishment and de establishment	Movement of Mechanical aids including mobile cranes and plant.	Safety Risk							
		Erecting temporary site offices, amenities and stores	Safety Risk							
		Manual Handling of equipment and materials.	Safety Risk							
		Moving vehicles.	Safety Risk							
		Materials/Objects in the walkways.	Safety Risk							

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				LIKELIHOOD	CONSEQUENCE	RISK INDEX		LIKELIHOOD	CONSEQUENCE	RISK INDEX
		Uneven surfaces between vehicle and lay down area.	Safety Risk							
		Temporary Electrical Feeds.	Safety Risk							
		Movement of public to and from a Residential Property in close proximity to site area.	Safety Risk							
11	Off Loading Material	Use of truck mounted crane	Safety Risk							
		Tip truck reversing over personnel.	Safety Risk							
		Vehicle to vehicle collisions	Safety Risk							
		Man machine interaction,	Safety Risk							
		Working in close proximity of other existing live electrical circuits	Safety Risk							
		Lack of Work Plan and approval thereof	Safety Risk							
		Lack of / Improper Information, Training, PPE, Air monitoring	Safety Risk							
		Incompetent Operator	Safety Risk							
		Unauthorised to offload	Safety Risk							
		Incorrect plant used for offloading	Safety Risk							
		Lack of signage	Safety Risk							
12	Mechanical and Hand Excavations/Backfilling	Work area not demarcated	Safety Risk							
		Improper use of hand tools	Safety Risk							
		Substandard Machinery used for excavation.	Safety Risk							
		Unsuitable ground conditions for excavation work that may lead to excavation collapse	Safety Risk							
		Man machine interaction	Safety Risk							
		Trenches collapsing	Safety Risk							
		Noise generation (especially during rock breaking)	Safety Risk							

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				LIKELIHOOD	CONSEQUENCE	RISK INDEX		LIKELIHOOD	CONSEQUENCE	RISK INDEX
		Unbarricaded excavations/trenches	Safety Risk							
		Damage to existing services during excavations	Safety Risk							
		Incompetent Operator	Safety Risk							
		Unsafe / self-made hand tools used	Safety Risk							
		Working in direct sun / Heat stress	Safety Risk							
		Open trenches	Safety Risk							
		Manual Handling.	Safety Risk							
		Dust.	Safety Risk							
		Snakes.	Safety Risk							
		Movement of Mechanical aids on site.	Safety Risk							
13	Exposure of underground services	Underground water lines	Safety Risk							
		Underground Electrical cables	Safety Risk							
		Manual Excavations	Safety Risk							
		Machine Excavations	Safety Risk							
14	Temporary structure (Temporary works)	Inadequate designs	Safety Risk							
		Incompetent formwork erectors and inspectors	Safety Risk							
		Temporary structure collapse due to poor design	Safety Risk							
		Unsafe access to elevated areas	Safety Risk							
		Poor stacking and storage of Form work materials	Safety Risk							
		Manual handling	Safety Risk							
		Pinch points	Safety Risk							
		Work at Fall Positions	Safety Risk							
15	Concrete WorksConcrete Mixing and Pouring (Manually	Concrete spillages	Safety Risk							
		Use of hand tools	Safety Risk							
		Oil spillages	Safety Risk							

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				LIKELIHOOD	CONSEQUENCE	RISK INDEX		LIKELIHOOD	CONSEQUENCE	RISK INDEX
	and Mixer) and use of Concrete Pump	Dust generation	Safety Risk							
		Incompetent operators	Safety Risk							
		Miscommunication between operator and flagman	Safety Risk							
		Mixer operating near excavation	Safety Risk							
		Incompetent Concrete Pump Operator	Safety Risk							
		Unsafe operation or control of Concrete Pump - Hoses / pipes moving around uncontrolled	Safety Risk							
		Inhaling of Cement dust and skin contact with wet cement(cement Burns)	Safety Risk							
17	JACKHAMMER - digging of holes, braking up of rocks or stones, pavements	Flying debris	Safety Risk							
		Diesel fumes and dust	Safety Risk							
		Defective Equipment	Safety Risk							
		Awkward posture	Safety Risk							
		Underground services	Safety Risk							
18	COMPRESSOR (diesel) - supply jackhammer with air	Hot compressor exhaust	Safety Risk							
		Heavy lifting	Safety Risk							
		Diesel fumes	Safety Risk							
		Explosion / or rupture of the compressor - Pipe bursting	Safety Risk							
19	Generators (petrol)- Providing portable power for drilling and lighting at night / day time	Heavy lifting	Safety Risk							
		Petrol fumes	Safety Risk							
20	Use and Storage of HCS	Unsafe use and/or storage of flammables could result in fires or explosions	Safety Risk							
		Unsafe stacking and Storage of flammable could result in spillages	Safety Risk							

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		Improper storage of chemicals, transportation and handling	Safety Risk							
		Spilled chemical substances may also impact negatively on the health of employees	Safety Risk							
		Health hazards when ingesting, inhaling or skin contact with HCS	Safety Risk							
21	Compactors (diesel /petrol) - For compacting sand after laying cables/ planting poles	Vibration	Safety Risk							
		Diesel/Petrol Fumes, Dust	Safety Risk							
		Awkward posture	Safety Risk							
		Flying debris	Safety Risk							
		Heavy lifting	Safety Risk							
		Exposure to cement	Safety Risk							
		Defective Equipment	Safety Risk							
22	Vehicle Mounted cranes (diesel) loading and off-loading, equipment and planting of poles	Use of a vehicle mounted crane and truck	Safety Risk							
		Working in close proximity of other existing live electrical circuits	Safety Risk							
		Diesel fumes	Safety Risk							
		Defective slings and chains	Safety Risk							
23	Electrical/ Hydraulic and battery Drilling machine - drilling holes on wooden poles, steel and concrete walls	Noise	Safety Risk							
		Vibration	Safety Risk							
		Awkward Posture	Safety Risk							
		Using defective electrical drilling machines	Safety Risk							
24	Construction vehicles and mobile Plant operations material.	Driving on uneven terrain	Safety Risk							
		Long hours driving	Safety Risk							
		Diesel, Petrol and Oil spills	Safety Risk							
		Using Public Roads	Safety Risk							
		Construction vehicles not roadworthy	Safety Risk							
		Employees transport facilities not roadworthy	Safety Risk							
		Mobile plant used in the project unsafe or substandard	Safety Risk							

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				LIKELIHOOD	CONSEQUENCE	RISK INDEX		LIKELIHOOD	CONSEQUENCE	RISK INDEX
		Intoxicated operator	Safety Risk							
		Vehicles left unattended when not operated	Safety Risk							
		Speeding	Safety Risk							
		Not buckled up	Safety Risk							
		Overloading vehicles or Plant	Safety Risk							
26	Hot works (Grinding, Cutting, Welding, Drilling, Flame cutting, Soldering)	Incompetent employees conducting hot works	Safety Risk							
		No Hotwork permit	Safety Risk							
		Improper storage of welding material	Safety Risk							
		Hot works conducted in view of employees	Safety Risk							
		Unsafe/ damaged equipment used 1	Safety Risk							
		Hotwork near flammable materials	Safety Risk							
		Unsecured / unsafe storage of cylinders	Safety Risk							
		Sparks	Safety Risk							
		Fire	Safety Risk							
		Substandard PPE used	Safety Risk							
		Overhead Hotwork operations	Safety Risk							
		Hot works in wet conditions	Safety Risk							
		Incorrect Discs used when cutting	Safety Risk							
		No Guards in Place when cutting / Grinding.	Safety Risk							
		Incorrect fittings used when connecting pipes to cylinders	Safety Risk							
		No fire fighting equipment or fire fighter available	Safety Risk							
		Gauges not working on cylinders	Safety Risk							
		Hot work area not barricaded	Safety Risk							
27	Temporary electrical equipment/ installations	Illegal connections	Safety Risk							
		Poor cable management	Safety Risk							
		Sub standard equipment	Safety Risk							


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				LIKELIHOOD	CONSEQUENCE	RISK INDEX		LIKELIHOOD	CONSEQUENCE	RISK INDEX
		Incompetent Installer5.	Safety Risk							
		Unauthorised Access to DB's	Safety Risk							
28	Using of Big Bolt cutters- cutting of conductors/ steel bars,	Heavy equipment	Safety Risk							
		Falling Objects	Safety Risk							
		Cutting loose ends of conductor	Safety Risk							
29	Use of Lifting	Falling of tools from elevated positions	Safety Risk							
		Heavy equipment.	Safety Risk							
		Equipment under tension/strain	Safety Risk							
		Defective lifting gears	Safety Risk							
		Breaking of conductors, slings and poles under tension.	Safety Risk							
30	Stringing and Tensioning of conductors	Physical material handling	Safety Risk							
		Equipment under tension/strain	Safety Risk							
		Repetitive motion	Safety Risk							
		Crossing Services	Safety Risk							
31	Inspection	Falls on uneven terrain	Safety Risk							
		Criminal activities	Safety Risk							
		Attacks from Wild animals	Safety Risk							
32	Install & Earth of CT/VT Junction Box	The use of fastening straps, side cutters and pliers	Safety Risk							
		The use of spanners or adjustable wrenches	Safety Risk							
		Working in close proximity of existing live electrical circuits	Safety Risk							
33	Working at heights	Inadequate Fall Protection Plan in place	Safety Risk							
		Inadequate / unsafe or damaged fall prevention equipment used	Safety Risk							
		Workers not trained to work at height	Safety Risk							
		Falling objects	Safety Risk							
		Workers falling	Safety Risk							
		Inclement Weather	Safety Risk							

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35	Public health & safety and Pedestrians access to site	Unsafe pedestrian access	Safety Risk							
		Injuries to by standing public or pedestrians	Safety Risk							
		Public personal belongings or property damages	Safety Risk							
36	Steel work (Steel fixing / steel reinforcing	Manual handling and lifting of rebar at ground level and to elevated level	Safety Risk							
		Transportation of rebar on trailers	Safety Risk							
		Sharp & pointed objects	Safety Risk							
		Cutting of Rebar - causing sparks and fire	Safety Risk							
		Use of unsafe or damaged pliers	Safety Risk							
37	Emergency Preparedness (Fire Prevention, First aid)	Inadequate emergency Planning	Safety Risk							
		Inadequate first-aid arrangements	Safety Risk							
		Inadequate fire prevention and protection measures	Safety Risk							

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