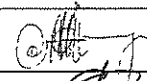



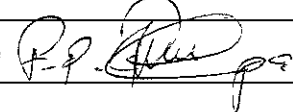

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PLANT AREA: MATLA POWER STATION			
TITLE: MATLA (STATUTORY) STRUCTURAL CIVIL INSPECTION FOR A PERIOD OF 5 YEARS			
REF: MEA - 06574	Reference Rev No:1	MULTIDISCIPLINARY: No	Plant Level: 1
COMPILED BY	Name: Fatty Mahlangu Systems Engineer/End User	Signature 	Date 08/04/2024
APPROVED	Name: Gavin Phelelo Line Manager	Signature 	Date 16/04/2024
APPROVED	Name: Lindokuhle Ngobese Group Manager	Signature 	Date 19/04/2024
REVIEWED	Name: Dorah Mkhonto Quality Department	Signature 	Date 22/04/2024
REVIEWED	Name: Occupational Health and Safety	Signature	Date
REVIEWED	Name: Lufuno Tshidzumba Environmental Department	Signature 	Date 24/04/2024
ACCEPTED	Name: Projects/Maintenance manager	Signature	Date
ACCEPTED	Name: N/A AIA	Signature	Date

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NB: Do not tamper with the template.

GENERAL


- Data books, reviews, reports, and diagrams/drawings shall be submitted to Engineering after the completion of the work. Engineering to forward the data books to Quality Department (Document Control)
- All QCP's to be submitted to Engineering and Quality for approval prior to outage/project or maintenance work commencement

	SCOPE OF WORK DESCRIPTION / ACTIVITY	PROCEDURE, SPECIFICATION, ENG. REQUIREMENTS / DOCUMENTATION	HOLD POINTS, WITNESS, REPORTS	RESPONSIBLE PARTY
1.1	Occupational Health and Safety	<ul style="list-style-type: none"> • Health and safety file should be approved by Safety risk management department prior to any work commences on site • All work is to be done in accordance with OHS Act 85 of 1993, Matla plant procedures and Plant Safety Regulations (240-150642762) • Matla power station SHEQ induction must be done before access to site can be granted • The contractor should ensure that all employees have acquired the required competency for the task they are performing • The contractor to ensure compliance to updated legal requirements and other requirements 	Eskom to witness	Contractor

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 Eskom	DATA POWER SECTION SCOPE OF WORK	Document Identifier	14593	Rev	6
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1.2	Environmental Management	<ul style="list-style-type: none"> • All activities listed in the National Environmental Act 107 of 1998, EIA Regulations as amended, must have environmental AUTHORISATION before commencement of work • The contractor shall comply with all applicable legal and other requirements • The polluter pays principle will be applied • The contractor manager shall ensure compliance with Eskom Matla Environmental procedures to ensure the prevention of pollution (refer OMOP 4090 and 4402) • The last payment will be processed based on the status of the last housekeeping check sheet (Annexure C OMOP 4402) of designated area. • EMS file based on ISO14001 will be required 	Eskom to witness	Contractor
1.3	Quality Management	<ul style="list-style-type: none"> • The contractor/executioner of work will be responsible for drawing up all QCP documentation and this must be approved by engineering and authorised by the Quality Department before commencing with the work • Contractors/executioner to adhere to QM 58 and OMOP4497 requirements • Number of NCR issued can affect your next tendering process • The QCP shall be signed progressively by the Engineer/Supervisor, Eskom QC Inspector, Contractor QC Inspector and/or AIA • No procuring of outage items without the approval of scopes by quality 	Hold point	Contractor

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		<ul style="list-style-type: none"> All outage scopes creep and scopes addition should be approved by quality No contractor should be in the possession of scopes for execution without the scopes approved by quality The contractor is subjected to quality auditing at any point in time during execution of scope 		
1 4	Inputs from other departments			
1 5	Commissioning reference			


DECOMMISSION AND/OR PLANT ISOLATION

	SCOPE OF WORK DESCRIPTION / ACTIVITY	PROCEDURE, SPECIFICATION, ENG. REQUIREMENTS / DOCUMENTATION	HOLD POINTS, WITNESS, REPORTS	RESPONSIBLE PARTY
1 1	<ul style="list-style-type: none"> Ensure that all relevant circuits are de-energized and isolated All circuit must be isolated accordingly where applicable 	All work shall be performed in accordance with the latest revision of PSR (36-681)	OPS – to ensure that all necessary earths are applied where necessary	OPS

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1 2	<ul style="list-style-type: none"> Where necessary ensure that supplies to cables are isolated and any other potential source. 	All work shall be performed in accordance with the latest revision of PSR (36-681).	OPS – to ensure that all necessary isolations, fuses, links etc are removed	OPS
	<ul style="list-style-type: none"> Inspect all cables/lines inside the relevant position and all other components to ensure that none are damaged while work is being carried out. 	All work shall be performed in accordance with the latest revision of PSR (36-681). RPs to ensure plant is safe prior to permit acceptance.	EMD – shall ensure plant is isolated accordingly with a permit to work in place.	EMD

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SCOPE OF WORK DESCRIPTION / ACTIVITY	PROCEDURE, SPECIFICATION, ENG. REQUIREMENTS / DOCUMENTATION	HOLD POINTS, WITNESS, REPORTS	RESPONSIBLE PARTY
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2	SCOPE OF WORK DESCRIPTION / ACTIVITY	PROCEDURE, SPECIFICATION, ENG. REQUIREMENTS / DOCUMENTATION	HOLD POINTS, WITNESS, REPORTS	RESPONSIBLE PARTY
	<p>This scope gives the requirements and specifications for the Inspection of the station structures, buildings and roads on a year basis for a period of 5yearsThe Inspections include but not limited to Visual & Non Destructive Test) The inspection will be done as per Inspection Manual for Civil Works at Eskom Power Stations The inspection will include all station civil structures (Concrete, steel, buildings and Roads) Cover all areas (sumps / pits / that cannot be accessed during normal operation but can be accessed during outages Drawings will be provided on request. Chimneys and cooling towers form part of mega structures. .The contractor will cover the following structures, roads and building but not limited to:</p> <ul style="list-style-type: none"> • Admin building • MMD workshop • Welding shop workshop • Training centre • Medical centre • Fire station • Transport department • EMD workshop • Civil maintenance workshop • Canteen 			
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- Engineering building
- Strategic stores
- Horticulture building
- Simulator building
- Ash and dust offices
- Rotec offices
- Security offices
- Hydrogen plant building
- GCD Offices
- Thandanani hall
- Slurry plant offices
- Switchgear buildings (X 10)
- Ablution blocks
- Roads (inclusive of gravel roads, interlock block paving, concrete, asphalt roads, both in the station, station perimeter and Matla Kriel Road Drainage efficiency and maintenance interventions to be included)
- Unit 1 to 6 Turbines House
- Unit 1 to 6 Boiler House
- Unit 1 to 6 Auxiliary Bay
- Smoke stack 1&2, (Chimney)
- Cooling towers (1 – 6),
- Liquid Containing Structures
- Bund walls
- Potable water tank (x 4 outside plant)

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- Potable water tank (x6 Unitize)
- Bund walls
- Machine foundations
- Slurry Plant,
- Dry Bulk Silo 1-3
- Water Treatment Plant
- Clarifiers and launders
- Lime Silo (North and South)
- Stairways, Handrails and walkways across the station
- Coal Plant (inclusive of coal stairthes, conveyor structures and unit bunkers (bunker structure and bunker liner plates))
- Pump Houses for the Dams
- Sewage system
- Sewage Treatment Plant
- Station drainage System (both open channel and subsoil)
- Ash Plant
- Precipitator structures
- Unit silos (X6)
- Dust plant concrete floor
- Dust Handling Plant
- Station parking car ports
- Cable Tunnel Structure (Unit 1 to 6)

Figure 1 & 2 below illustrate station layout. The purpose of the inspection is to conduct an assessment as per the OHS Act requirement for General and Health regulations of the current condition of infrastructure forming an integral part of the PS operations. The report shall serve to record the findings through photographs

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taken, which are indicative of the current condition of such infrastructure. The report must highlight areas, which are at a higher risk where maintenance activities (repairs) and detailed inspections should be prioritised As per the Eskom defect matrix for ranking the prioritization of defect severity

2.1	<p>The inspections shall focus on identifying defects that have the potential of resulting in failure of a structural element(s) if not addressed timeously. This included defects that were deemed to result in loss of strength/ capacity, stability or durability of structural components Attention must be given to the defects as identified on the Civil Manual</p> <p>It should be noted that even the areas inspected and are in good condition it should be noted as a comment in the reports the status quo of the structures / buildings / roads.</p> <p>All findings identified during the inspection that pose a safety hazard to personnel must be communicated to the plant Engineer. A brief report of all safety related</p>	<p>The visual inspections and NDTs conducted must be done according to Inspection Manual for Civil Works at Eskom Power Stations – 240-99527377and Inspection of Boiler Structure Supports- Conventional Fossil Fuel Fired Power Stations 240-77801161</p> <p>OHS Act 85 1993 Revised 22nd Edition</p>	R	Contractor
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	findings must be submitted by the contractor Engineer within a week of completing the Inspection.			
2.2	TESTING: <ul style="list-style-type: none"> - Depth of Carbonation - Concrete Strength on Cored Samples. - Chemical tests on concrete samples - shape Survey to determine the levels of deflection along set intervals of the height of each cooling tower in 11 5° arcs around its circumference. Deflection readings to correspond with construction tolerances and remedial actions to be given for the alignment of each cooling tower . - Possible Foundation Settlements (Where required) - Roads instrument assessment for functionality riding quality, skid resistance and rut depth. 		R	Contractor

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	- Roads instrument assessment for road structure Surface deflection, deflection bowl parameters, dynamic cone penetrometer (DCP) and rut depth.			
23	Visual Inspection of Underground Services A visual inspection of underground pipes will be required by means of a camera. This will be applicable to the following systems <ul style="list-style-type: none"> • Stormwater • Sewage The aim of the visual inspection is to determine the condition of the underground pipe networks, regions of blockages that requires maintenance interventions, and any soil ingress through cracked pipe walls		R	Contractor

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RE-COMMISSION

	SCOPE OF WORK DESCRIPTION / ACTIVITY	PROCEDURE, SPECIFICATION, ENG. REQUIREMENTS / DOCUMENTATION	HOLD POINTS, WITNESS, REPORTS	RESPONSIBLE PARTY
1.1	<ul style="list-style-type: none"> Re-commission all circuits which were placed out of service for maintenance purposes 	All workers shall need to have signed out and the responsible permit holder shall satisfy himself that there are no people still working on the line prior to energization as per PSR (36-681)	OPS & EMD to witness	OPS
1.2	<ul style="list-style-type: none"> Equipment used for earthing and isolation 	PTM shall ensure that all relevant equipment used for earthing and isolating is removed as per PSR (36-681) requirements and accounted for prior to energization of the line	OPS and EMD to ensure all permits are cleared and the plant is in service	OPS & EMD

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	MAELA POWER STATION SCOPE OF WORK	Document Identifier	14593	Rev	6
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BILL OF MATERIAL

	Full description of Material/Spares/Equipment	Specifications of Material/Spares/Equipment	Stock No	Part Number	Required Quantity
1	PR CIVIL ENGINEER (3 years 'experienced in chimney and cooling towers)				1
2	CIVIL ENGINEER				3
3	CORE DRILL TECHNICIAN				1
4	4* 2 BAKKIE				1
5	PHENOLPHTHALEIN				50L
	Engineers will be the ones taking pictures				
7	DRONES (High tech)	Should be able to access confined areas (Underground piping camera) and scan for cracks in the structures Reach a height of 300m			2
8	DRONE	(Elios 2/3) for internal inspections (Other drones will lose GPS signal)			1
8	DRONE PILOT				1
9	GERERAL LABOUR				2

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URS		X		
Philosophy (Outage)	X			
Condition Monitoring Report	X			
VA/PHD Viewer trends		X		
Corrective Actions	X			
CARAB reports			X	
Statutory Requirements	X			
Grid code requirements		X		
Waivers and Exemptions		X		
Calibration requirements			X	
Previous Outage SOW variations		X		
Post Mortems Actions from previous outages	X			
Pre-Outage plant walks	X			
Risk based inspection (RBI) report		X		
Simulation, TOIs, OON, SI		X		


COMMENTS

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ATTACHMENTS: DRAWINGS, SKETCHES, DIAGRAMS, INSTRUCTIONS, etc	
1	Station Layout
2	Google Earth Site Layout
3	
4	
5	
6	
7	
8	
9	
10	

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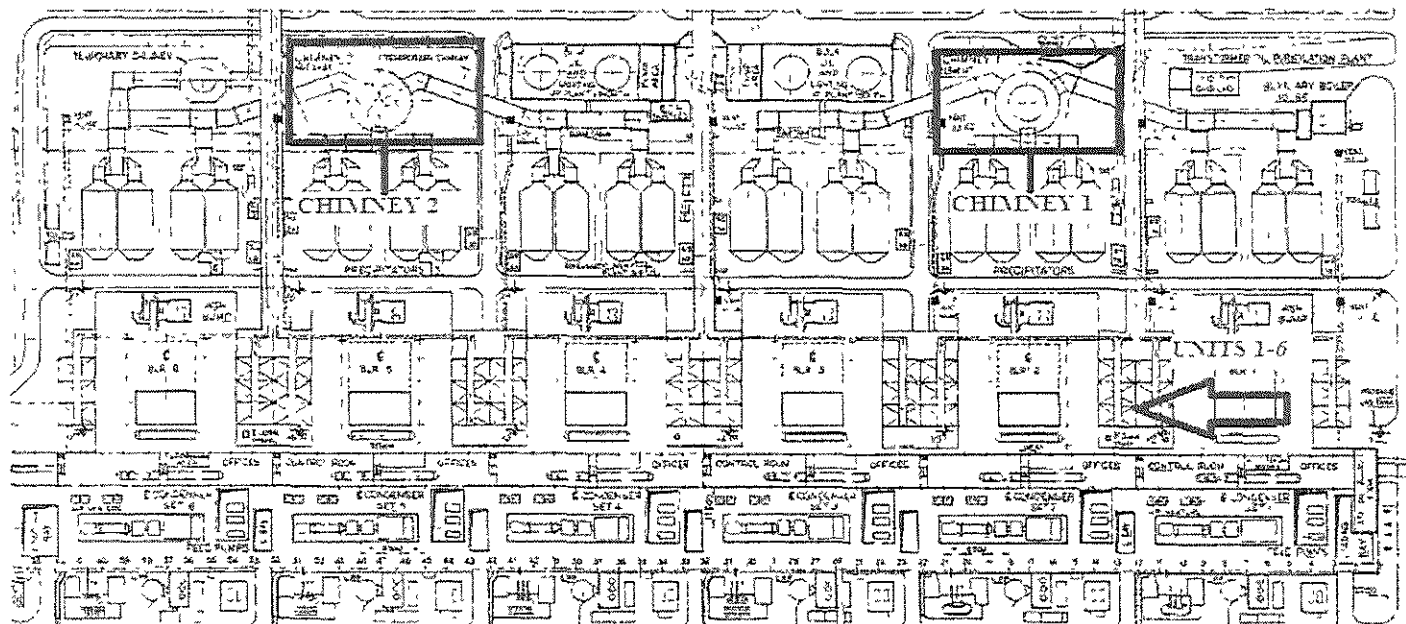



Figure 1 Station Layout

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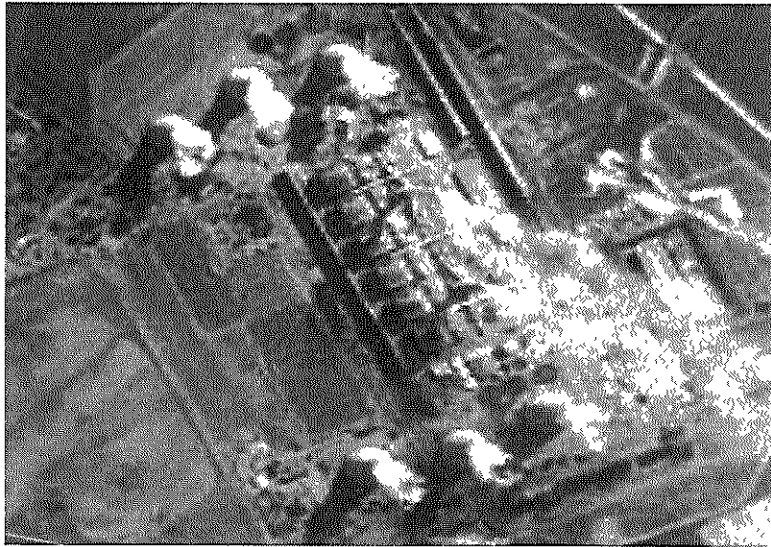


Figure 2 Google Earth site layout MATLA POWER STATION

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