	Business Management System Role Profile Senior Engineer - Design	Document Identifier	Z-09A	Rev	0
		Date	02/11/2015		
		Page	1 of 5		


Job Title	Senior Engineer - Design
Product Group/Support Service Name	Transformer & Switchgear Services
Department	Engineering
Section	Engineering Development
Main objective of the Role	Take full responsibility to provide a professional design service including, new developments, designs, reverse engineering special projects, research and investigations related to large Power Transformer and Hydro Turbines, Generators and related plant.
Job Grading Reference	Modification 20 June 2014
Grade	M17
Organisational Structure: (see attached approved structure)	

Key Performance Areas (KPA's)	Outputs required to perform the task to obtain the desired deliverables
PROVIDE A REVERSE ENGINEERING SERVICE	<ul style="list-style-type: none"> • Provide a professional Reverse Engineering and Reverse Engineering review service in line with approved and accepted processes, standards, company policies and procedures related to Reverse Engineering. • Reverse Engineer from 1st principles, FEA, material analysis in line with an approved and accepted process including IEC 076. • Reverse Engineer for manufacturing of Power Transformers and Reactors. • Inspect and review performance of Reverse Engineered designs. • Reverse Engineer design verification services, including mechanical and electrical stresses. • Ensure the Division is kept abreast of the latest Engineering trends, developments and technology available on Power Transformers and related engineering design software. <p>Supporting Documents for Measurement:</p> <ul style="list-style-type: none"> • Design Reports, Weekly Reports, Monthly Reports, Audit Reports, Customer Feedback, Meeting Schedule, Design review minutes, Standards and processes.
NEW DESIGN AND MODIFICATIONS ON TURBINE AND PLANT EQUIPMENT	<ul style="list-style-type: none"> • Provide a professional engineering service on modifications and new designs in line with approved and accepted processes, standards, company policies and procedures related to modifications and new designs. • Evaluate modification and new designs to Power Transformers and associated plant. • Research and develop new design principles. • Modifications and new designs from 1st principles, FEA, material analysis in line with an approved and accepted process to meet

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	Business Management System Role Profile Senior Engineer - Design	Document Identifier	Z-09A	Rev	0
		Date	02/11/2015		
		Page	2 of 5		

Key Performance Areas (KPA's)	Outputs required to perform the task to obtain the desired deliverables
	<p>IEC 076.</p> <ul style="list-style-type: none"> • New design and modification done taking into account manufacturing processes. • Inspect and review performance of designs. • Design and design verification services. • Design according to relevant standard. <p>Supporting Documents for measurement:</p> <ul style="list-style-type: none"> • Design reports, Weekly reports, Monthly reports, Audit reports, Design review minutes, Meeting schedule and standards and processes.
ENSURE THE DEVELOPMENT AND ENHANCEMENT & THE PLANNING/ SCHEDULING OF DESIGN SKILLS	<ul style="list-style-type: none"> • Ensure plans are in place and achieved in order to source and develop Design capacity, including their training. • Help to ensure continued provision of a design service in conjunction with Chief Design Engineer. • Implement a formalized development program with Trainee Engineers/Design Engineers to ensure professional and skilled Engineers that can provide a professional service and obtain professional registration. • Guides Trainee Engineers/Design Engineers in their development by advising and supporting them with regard to the assignments and interventions in their training programmes. • Meets at least every 2nd month with the Trainee Engineers/Design Engineers to review and document the personal performance and progress against that required by the training program, and identified development action plans. Compile corrective action plans to improve personal performance. • Planning, sourcing, scheduling, allocation and the management of Design Engineers and Trainee Engineers to optimize and achieve outage plan requirements and business plan objectives. <p>Supporting Documents for measurement:</p> <ul style="list-style-type: none"> • Action plans, development plans, job description, training plans allocation plan.
TECHNICAL INVESTIGATIONS & TECHNOLOGY IMPROVEMENTS	<ul style="list-style-type: none"> • Investigate rework, failure investigations, Technical problems and incidents associated with Transformer and Switchgear Services as may be requested. • Recommendations and findings shall be properly documented and approved. An action plan will be drawn up with responsibilities, dates and backed up with SDR's as may be required. • Source, maintain and operate specialized equipment related to engineering. This might include using measurement equipment and recordings as well as the Test Results. • Research and investigate Technology and method improvements.

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	Business Management System Role Profile Senior Engineer - Design	Document Identifier	Z-09A	Rev	0
		Date	02/11/2015		
		Page	3 of 5		

Key Performance Areas (KPA's)	Outputs required to perform the task to obtain the desired deliverables
	Supporting Documents for measurement: <ul style="list-style-type: none"> • Work requests, Investigation reports, Test Results, measurements, monthly report and audit reports.
BUSINESS PLAN OBJECTIVES	<ul style="list-style-type: none"> • Departmental business plan to be compiled in conjunction with Chief Design Engineer to meet the Department business plan objectives, action plans, key performance targets and financial plan. This is needed to support the Transformer and Switchgear Services objectives, and shall be submitted to the Engineering Manager for approval. • All objectives, targets, action plans and financial plans are achieved by the specified dates and reviewed via the monthly report submitted to the Engineering Manager. • Achieve Business Plan Targets; • Refer to Performance Compact Supporting Documents for measurement: <ul style="list-style-type: none"> • Business plan, action plans, minutes, monthly reports, due date report, rework reports, safety statistics, racial equity statistics, and financial reports.
SAFETY HEALTH ENVIRONMENT AND QUALITY	<ul style="list-style-type: none"> • Compliance with the Occupational Health and Safety Act and Eskom RoteK Industries SHE System requirements. • That the required personnel are trained, in terms of Eskom Plant Safety Regulations. • Continuous control and maintenance of ISO Quality system in accordance with the BMS. • Compliance with statutory leave, overtime, training and medical examination requirements. • Compliance with policies, procedures and instructions. • Compliance with PFMA and delegation of authority. • Assets controlled as per BMS.
KEY RELATIONSHIP MANAGEMENT	<ul style="list-style-type: none"> • Identify employee problem areas and compile and implement corrective action plans in order to ensure sound HR and IR relationships with Design Engineers and Trainee Engineers. • Develop strategic inter departmental relationships to ensure objectives are achieved. • Foster and maintain sound Customer, and inter departmental relationships to ensure a unified approach. Supporting Documents for measurement: <ul style="list-style-type: none"> • Departmental Forum meeting minutes, Customer feedback, minutes of meetings and month reports.
PERFORMANCE AND DEVELOPMENT	<ul style="list-style-type: none"> • Meets monthly with immediate subordinates and reviews projects allocated, business plan, quality, safety, training, technical and financial objectives. • Ensure subordinates compile and implement corrective action

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Key Performance Areas (KPA's)	Outputs required to perform the task to obtain the desired deliverables
	<p>plans to improve performance and achieve key targets.</p> <ul style="list-style-type: none"> Meets 6 monthly with immediate subordinates, and via the PDR system review their personal performance and performance of their section. Via the PDR system compiles corrective action plans to improve personal and section performance. Enhance technical knowledge on the plant and equipment to ensure high level of engineering confidence. Encourage self and subordinates to feature in seminars, papers and conferences on achievements. Encourage self and subordinates to become respected specialist in the industry field. <p>Supporting Documents for measurement:</p> <ul style="list-style-type: none"> Monthly meeting minutes, IDP Form, subordinates and personal development programs, papers and conference attendance reports.

Minimum Qualification Required	Minimum Experience Required
<ul style="list-style-type: none"> MSc/MEng Electrical Engineering with minimum Five (5) years' related experience. OR BSc/BEng, Electrical Engineering with minimum Eight (8) years' related specialist experience. AND Will be required to achieve ECSA Pr.Eng registration within three (3) years of appointment or have an action plan in place to achieve this which will be evaluated by the Engineering Manager and Chief Design Engineer. 	<ul style="list-style-type: none"> Experience specifically related to Transformer design using modern Experience specifically related to Mechanical Design using modern FEA Modelling, Thermodynamic and Fluid dynamic Modelling, 3D Scanning, and knowledge of high temperature steels Experience must include Mentoring of Trainee Engineer or Design Engineer Advanced Computer Skills including MS Word, MS Excel, MS Power Point, MS projects, CAD and FEA Software (SolidWorks, Nastran, Patran, Marc or similar) Experience of Quality Management Systems and relevant ISO Standards Experience of the OHSA, Construction Regulations and Environmental Regulations


Competencies (Skills, Knowledge and Attributes) Required:
Skills

- Above average Technical Competency in Mechanical Design using Modern Designs, Thermodynamic and Electrical Modelling, Test Procedures, and knowledge of high temperature materials.
- Above average Strategic, Analytical and Problem Solving Skills
- High level of Management Skills
- High level Investigative Skills and Technical Negotiating Skills
- High level of Computer Literacy in MS Word, MS Excel, MS Power Point, MS Projects

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	Business Management System Role Profile Senior Engineer - Design	Document Identifier	Z-09A	Rev	0
		Date	02/11/2015		
		Page	5 of 5		

- High level of skill in Design and Drawing Software and Solid Works
- Effective English Communication Skills, and able to communicate at all levels in the Organisation

Knowledge

- Above average Engineering and Technical knowledge of Transformer Design using modern Modelling, Thermodynamic and Design Modelling, Test, and knowledge of High Voltage.
- Knowledge of Quality Management Systems and relevant ISO Standards
- Knowledge of the OHSA, Construction Regulations and Environmental Regulations



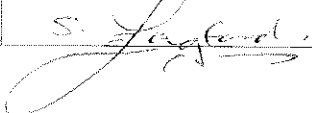
Attributes

- The person must have the ability to work accurate, pay attention to detail, work alone or in a team, be able to solve complex mathematical problems and suggests Engineering solutions which are practical and implementable
- The Incumbent will be required to travel extensively nationally and internally based on business requirements
- Must have the ability to effectively lead and direct a Team of Engineers

SHEQ Responsibilities

- Continuous Improvement: Ensure that your Administration Document is current, and includes your SHEQ objectives.
- Ensure that all legal appointments are valid and in place for your area of control.
- SHE Compliance: As a Section 8 & 9 appointee, you are to ensure that the duties of the employer as contemplated in the Occupational Health and Safety Act 85 of 1993 are properly discharged and all legal appointments are valid and in place for your area of control.
- Reduce Rework: Measure and report on Rework vs. Revenue for your department on a monthly basis and ensure you reduce rework to less than 0.5% of your turnover.
- ISO and OHSAS Certification: Ensure that all activities are carried out as per the documented processes and comply with the requirements of ISO and OHSAS certification.
- Audit Rating: Maintain an audit score of less than 2 and/or receive no major audit findings.

The list of tasks/duties and responsibilities contained in this document is not necessarily exhaustive, and the employer is entitled to instruct the employee to carry out additional duties or responsibilities, which may fall reasonably within the ambit of the role profile, or in accordance with operational requirements.

Designation	Name (Print)	Signature	Date
Compiled	HC Visser		2/11/2015
Authorised	I Fick		4/11/15
Human Capital Representative	Langford S.		3/11/2015

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