
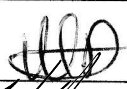




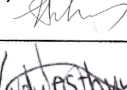
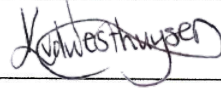
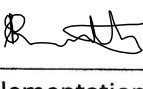


RESTRICTED	NTP Radioisotopes SOC Ltd			
	<i>This document is the property of NTP and shall not be used, reproduced, transmitted or disclosed without prior written authorisation.</i>			
Document No	NTP-SPE-4130	Rev No.	1	
Title	P1701 HVAC PROJECT: WORK SPECIFICATION			Page 1 of 10
CMS Unique ID	N/A			
Project Number	NTP-PRO-11-016			

ACTION	NAME & CAPACITY	SIGNATURE	DATE
Originated	M Mukwevho Project Manager		2021-03-04
Originated	T More HVAC Engineer		2021/03/04
Originated	JH le Roux C&I Chief Technician		2021-03-05
Checked	WJ van den Berg NECSA EES: Chief Electrical Engineer		2021-03-05
Checked	PJ de Bruin Technical Advisor		2021/03/05
Checked	A Mackay Senior Systems Engineer		2021/03/05
QA Approved	K van der Westhuysen Quality Assurance		2021/03/11
Approved	SST Ramathe Head: Group Program Execution		2021/03/11
Implementation Date:			
DISTRIBUTION LIST (1 = Original, 2 and upwards = Electronic Copy)			
1	QA Records (P1700)	2	Document Centre
		3	
Authentication of printed document: This document was printed by:			
NAME		SIGNATURE	DATE

NTP-PRG-0300-08 Rev 18

RESTRICTED


Document No.	NTP-SPE-4130	Rev No.	1	Page 2 of 10	
Title	P1701 HVAC PROJECT: WORK SPECIFICATION				
CMS Unique ID	N/A				
Project Number	NTP-PRO-11-016				

Table of Contents

1 PURPOSE..... 3

2 SCOPE 3

3 REFERENCES 3

4 ABBREVIATIONS AND DEFINITIONS..... 3

 4.1 The following abbreviations are used in this document:..... 3

 4.2 The following definitions are provided to ensure a uniform understanding of this document: 3

5 GENERAL..... 3

 5.1 Services requirements – Engineering scope of services:..... 3

 5.1.1 Stage 1 – Inception 4

 5.1.2 Stage 2 - Concept and Viability/Preliminary Design..... 4

 5.1.3 Stage 3 - Design Development/Detail Design..... 5

 5.1.4 Stage 4 - Documentation and Procurement..... 6

 5.1.5 Stage 5 - Contract Administration and Inspection 7

 5.1.6 Stage 6 - Close-Out 9

6 RESPONSIBILITIES 9


7 PROCESS 9

8 RECORDS..... 9

9 TASK HAZARD ASSESSMENT 10

10 LIST OF FORMS 10

11 REVISION HISTORY..... 10

Document No.	NTP-SPE-4130	Rev No.	1	Page 3 of 10	
Title	P1701 HVAC PROJECT: WORK SPECIFICATION				
CMS Unique ID	N/A				
Project Number	NTP-PRO-11-016				

1 PURPOSE

The purpose of this document is to outline the works specification for the engineering consultant when executing the HVAC project.

2 SCOPE

The scope of the document is to provide the details and the requirements of NTP to the engineering consultant when project work is executed and to provide the deliverable at each stage of execution.

3 REFERENCES

This document complies with the requirements of:

None

The following documents are referenced in this document:

NTP-SOW-4005 : HVAC Project Scope of Work

4 ABBREVIATIONS AND DEFINITIONS

4.1 The following abbreviations are used in this document:

ECSA : Engineering Council of South Africa
HVAC : Heating, Ventilation and Air Conditioning


4.2 The following definitions are provided to ensure a uniform understanding of this document:

None	:	None
------	---	------

5 GENERAL

5.1 Services requirements – Engineering scope of services:

The Consultant shall render contracted engineering services of NTP-SOW-4005: according to the following stages defined by the Engineering Council of South Africa (ECSA).

Document No.	NTP-SPE-4130	Rev No.	1	Page 4 of 10	
Title	P1701 HVAC PROJECT: WORK SPECIFICATION				
CMS Unique ID	N/A				
Project Number	NTP-PRO-11-016				

5.1.1 Stage 1 – Inception

The Consultant shall establish NTP’s requirements and preferences, assess user needs and options, The Consultant shall also:


- Attend project fortnightly initiation meetings.
- Advise on procurement policy for the project.
- Advise on the rights, constraints, consents and approvals.
- Define the scope of services and scope of work required.
- Conclude the terms of the agreement with NTP.
- Inspect the site and advise on the necessary surveys, analyses, tests and site or other investigations where such information will be required for Stage 2 including the availability and location of infrastructure and services.
- Determine the availability of data, drawings and plans relating to the project.
- Advise on criteria that could influence the project life cycle cost significantly.

Stage 1 deliverables of the Consultant shall include:

- Agreed scope of services and scope of work.
- Signed agreement.
- Report on project site and functional requirements.
- Schedule of required surveys, tests, analyses and site investigations.
- Schedule of consents and approvals.

5.1.2 Stage 2 - Concept and Viability/Preliminary Design

The Consultant shall prepare and finalise the project concept in accordance with the brief, including project scope, scale, character, form and function, plus preliminary programme and viability of the project. The Consultant shall also:

Document No.	NTP-SPE-4130	Rev No.	1	Page 5 of 10	
Title	P1701 HVAC PROJECT: WORK SPECIFICATION				
CMS Unique ID	N/A				
Project Number	NTP-PRO-11-016				

- Attend design' meetings fortnightly.
- Establish the concept design criteria.
- Prepare initial concept design and related documentation.
- Advise NTP regarding further surveys, analyses, tests, and investigations, which may be required.
- Establish regulatory authorities' requirements and incorporate into the design.
- Refine and assess the concept design to ensure conformance with all regulatory requirements and consents.
- Establish access, utilities, services, and connections required for the design.
- Coordinate design interfaces.
- Prepare process designs (where required), preliminary designs, and related documentation for approval by authorities and client and suitable for costing.
- Provide cost estimates and life cycle costs as required.
- Liaise, co-operate, and provide necessary information to NTP.


Stage 2 deliverables of the Consultant shall include:

- Concept design.
- Schedule of required surveys, tests and other investigations and related reports.
- Process design.
- Preliminary design.
- Cost estimates as required.

5.1.3 Stage 3 - Design Development/Detail Design

The Consultant shall develop the approved concept to finalise the design, outline specifications, cost plan, financial viability, and programme for the project. The Consultant shall also:

- Review documentation programme with NTP.
- Attend design meetings fortnightly

Document No.	NTP-SPE-4130	Rev No.	1	Page 6 of 10	
Title	P1701 HVAC PROJECT: WORK SPECIFICATION				
CMS Unique ID	N/A				
Project Number	NTP-PRO-11-016				

- Incorporate NTP's and authorities' detailed requirements into the design.
- Prepare design development drawings including draft technical details and specifications.
- Review and evaluate design and outline specification and exercise cost control.
- Prepare detailed estimates of construction cost.
- Liaise, co-operate, and provide necessary information to NTP.
- Submit the necessary design documentation to local and other authorities for approval.


Stage 3 deliverables of the Consultant shall include:

- Design development drawings.
- Outline specifications.
- Local and other authority submission drawings and reports.
- Detailed estimates of construction costs.

5.1.4 Stage 4 - Documentation and Procurement

The Consultant shall prepare procurement and construction documentation, confirm and implement the procurement strategies and procedures for effective and timeous procurement of necessary resources for execution of the project. The Consultant shall also:

- Attend design meetings fortnightly.
- Prepare specifications and preambles for the works.
- Accommodate services design.
- Check cost estimates and adjust designs and documents, if necessary, to remain within budget.
- Formulate the procurement strategy for contractors or assist NTP where relevant.
- Submit relevant documentation to facilitate contractor procurement by NTP.

Document No.	NTP-SPE-4130	Rev No.	1	Page 7 of 10	
Title	P1701 HVAC PROJECT: WORK SPECIFICATION				
CMS Unique ID	N/A				
Project Number	NTP-PRO-11-016				

- Review designs, drawings, and schedules for compliance with approved budget.
- Assist NTP in calling for tenders.
- Liaise, co-operate, and provide necessary information to NTP..
- Assist in the evaluation and recommendation of tenders.
- Perform due diligence inspections of recently completed installations by tenderers.
- Assist NTP with Assessing samples and products for compliance and design intent.


Stage 4 deliverables of the Consultant shall include:

- Specifications.
- Services co-ordination.
- Working drawings.
- Budget construction cost.
- Tender documentation.
- Tender evaluation and recommendation report, including a due diligence inspection report of recently completed installations by tenderers.
- Priced contract documentation.

5.1.5 Stage 5 - Contract Administration and Inspection

The Consultant shall manage, administer, and monitor the construction contracts and processes, including preparation and coordination of procedures and documentation to facilitate practical completion of the works. The Consultant shall also:


- Coordinate construction activities with NTP's production and maintenance activities, ensuring minimal disruption of NTP's normal business activities during construction.
- Issue construction documentation in accordance with the documentation schedule.
- Assist NTP with contract administration procedures in terms of the contract.
- Assist NTP with preparing schedules of predicted cash flow.

Document No.	NTP-SPE-4130	Rev No.	1	Page 8 of 10	
Title	P1701 HVAC PROJECT: WORK SPECIFICATION				
CMS Unique ID	N/A				
Project Number	NTP-PRO-11-016				

- Prepare pro-active estimates of proposed variations for client decision making.
- Attend fortnightly site, technical and progress meetings.
- Inspect works for conformity to contract documentation.
- Adjudicate and resolve financial claims by contractor(s).
- Assist in the resolution of contractual claims by the contractor.
- Assist NTP with establishing and maintaining a financial control system.
- Clarify details and descriptions during construction as required.
- Prepare valuations for payment certificates.
- Witness and review of all tests and mock-ups carried out both on and off site.
- Check and approve contractor drawings for design intent.
- Update and issue drawings register.
- Issue contract instructions as and when required.
- Review and comment on operation and maintenance manuals, guarantee certificates and warranties.
- Inspect the works and issue practical completion and defects lists.
- Arranging for the delivery of all test certificates, including the Electrical Certificate of Compliance, statutory and other approvals, as built drawings, and operating manuals.

Stage 5 deliverables of the Consultant shall include:

- Schedules of predicted cash flow.
- Construction documentation.
- Drawing register.
- Estimates for proposed variations.
- Contract instructions.
- Valuations for payment certificates.
- Progressive and draft final account(s).
- Practical completion certification and defects list.
- Electrical Certificates of Compliance.

Document No.	NTP-SPE-4130	Rev No.	1	Page 9 of 10	
Title	P1701 HVAC PROJECT: WORK SPECIFICATION				
CMS Unique ID	N/A				
Project Number	NTP-PRO-11-016				

5.1.6 Stage 6 - Close-Out

The Consultant shall fulfil and complete the project close-out, including necessary documentation to facilitate effective completion, handover, and operation of the project. The Consultant shall also:

- Inspect and verify the rectification of defects.
- Receive, comment-, and approve relevant payment valuations and completion certificates.
- Procure operations and maintenance manuals, guarantees and/or warranties.
- Procure as-built drawings and documentation.
- Conclude the final accounts where relevant.

Stage 6 deliverables of the Consultant shall include:

- Valuations for payment certificates.
- Works and completion lists.
- Operations and maintenance manuals, guarantees and/or warranties.
- As-built drawings and documentation.
- Final accounts.

6 RESPONSIBILITIES

None.


7 PROCESS

None.

8 RECORDS

Record	Retention Period	By Whom
None	None	None

RESTRICTED

Document No.	NTP-SPE-4130	Rev No.	1	Page 10 of 10	
Title	P1701 HVAC PROJECT: WORK SPECIFICATION				
CMS Unique ID	N/A				
Project Number	NTP-PRO-11-016				

9 TASK HAZARD ASSESSMENT

No Task Hazard Assessment is associated with this document.

10 LIST OF FORMS

Form Title	Form Number	Exhibit Number
None	None	None

11 REVISION HISTORY

Rev.	Date Approved	Nature of Revision	Originated by
1	See title page	First issue	M Mukwevho