

PART 3: SCOPE OF WORK

Document reference	Title	No of pages
C3.1	This cover page Works Information	1
	Total number of pages	

C3.1: WORKS INFORMATION

1 Description of the works

1.1 Executive overview

The Simulator at Majuba Power Station was last upgraded in 2008. The warrantee of the Simulator ended in 2011 and has not been upgraded or refurbished since. The lack of maintenance of the Simulator has caused many defects to accumulate over time. Training of panel operators takes place in the Simulator. As a result of the defects the training cannot be completed. If training is halted, the required quota of operating personnel cannot be reached and therefore operating personnel resources remain a risk.

There are two different simulators, namely the U3 and U4 simulators. The U3 simulator control models and HMI is a replica emulation of the reference Unit 3 representative of Siemens OMME system. The U4 simulator control models and HMI is a replica emulation of the reference Unit 4 representative of Siemens TXP OM650 system.

1.2 *Employer's objectives and purpose of the works*

The objective is to resolve the backlog of critical defects currently on the Simulator which is preventing training of power station personnel from being completed as required by the operating department. By resolving the Simulator defects we will be enhancing the availability of the Simulator and training.

The *Contractor* is to liaise with the Majuba training department to ensure that work as part of this scope does not collide with the training plan.

1.3 Responsibility of the *Contractor*

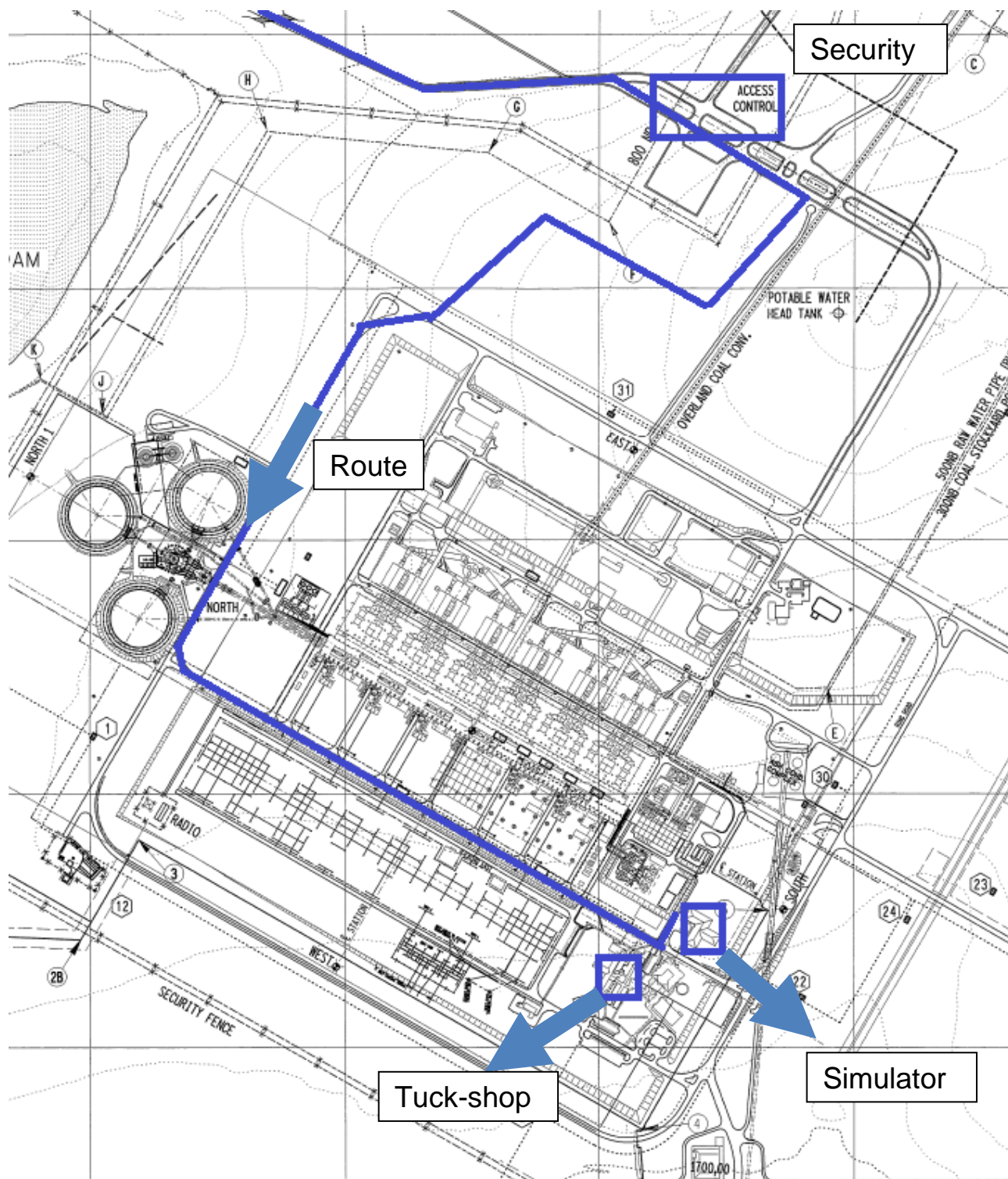
The contractor shall be responsible for the coordination and execution of the entire works. The Contractor must understand that even though the Employer has provided the specification of the simulator software to be ported and re-hosted, as well as new systems to be installed, the Contractor has to ensure and retain the responsibility that both simulators are fully functional and operations at the completion date.

1.4 Existing Simulator Availability

The works should be scheduled such that there is a downtime of no more than 2 weeks per simulator. Such that impact on the training program is minimised

1.5 Site Establishment

1. Majuba power station is located between Amersfoort and Volksrust. The closest town to the power station is 25 km. The second closest town to the power station is 45 km.
2. Station access: In order to gain access to the station a safety file and workers induction will be required. This needs to be planned in advance by the contractor together with the optimising manager.
3. Simulator building access: The contractor shall be given access to the simulator building, the simulator training facilities the instructor stations as well as the engineering stations. Access can be arranged with the C&I Engineering department. The engineering station room can be used to store tools and equipment.
4. There is parking available next to and in front of the simulator building.
5. The simulator building has restrooms for use by the contractor.
6. The contractor will not be supplied with a telephone.
7. The contractor may use the simulator engineering station as the administrative office.
8. The contractor shall be responsible for catering. A tuck-shop is available at the power station.



1.6 Technical Requirements of Works of Majuba Power Station Simulator

1. Contractor is to have had previous experience working on the Majuba Power Station simulators and process models. This includes the OMME HMI emulation for U3 Simulator and the TXP OM650 HMI emulation for U4 Simulator. Both systems are version 7.7. Evidence of work to be submitted.

NB: Special care must be taken to ensure that the scope of modelling, functionality and fidelity (accuracy) residing within the process models remains unchanged and are retained.

2. The simulator computer equipment shall function within the existing power supply infrastructure. The simulator is equipped with 220 V AC supply. No additional power supply equipment excluding computer power supply cables and computer power supply units would be required.
3. The contractor should adhere to Eskom's Cyber Security policy – 240-55410927.
4. Minimum specifications of the station PCs:
 - Windows XP
 - Pentium 4 3.4 GHz CPU
 - 64 bit support
 - No of CPUs: 1
 - RAM: 1024
 - HDD SATA: 80 GB
 - Graphics channels: 2 by 2
 - Ethernet: 1000/100/10 MBit/s
 - Keyboard type: US
 - Optical Mouse required: Yes
 - DVD-ROM

NB: The above specifications are based on Windows XP operating system. The contractor ensures that the real-time operation of the refurbished simulator is equal to or better than the existing simulator. The expected minimum CPU is i5 or similar together with an SSD to run the main OS.

5. The documentation of the modifications listed in the activity schedule is not provided as part of the tender documents due to confidentiality and quantity of documentation. Upon request, these documents can be obtained from Majuba Power Station.
6. Eskom is aware of the limitation of implementing new modifications on Unit 1-3 emulator. During the implementation of the project the Contractor should make aware to Eskom which modifications cannot be implemented (as per list in activity schedule).
7. All Windows licences for new equipment to be supplied by the contractor.
8. This works information should be sed in conjunction with the activity schedule.

1.7 Contractual Requirements of Works of Majuba Power Station Simulator

1. Contractor shall be liable for any damages caused to plant and material arising from or in connection with the contractors providing the works.
2. The tenderer is to submit a deviation schedule for any deviations from the activity schedule for assessment.
3. Contractor is to be tax compliant. A valid tax document to be submitted.
4. Required to be on the (Central Suppliers Database) CSD. A valid MAAA number must be submitted.

5. All candidates to attend a compulsory meeting for scope clarification.
6. The contractor shall be liable for all works covered by this scope of work for a period of twelve months after completion of the whole of the works.
7. The defect correction period is two weeks.
8. Contractor to submit a program which shows a plan/schedule/timetable of the work to be executed in this scope of work.
9. The contractor is to submit take-out prices which indicate the cost of removing scope. There is a column in the activity schedule for this.
10. The contractor is responsible for accommodation of workers.
11. The contractor is responsible for transportation of equipment and workers.
12. The contractor is to submit a program/schedule for the works which will be monitored by Eskom.
13. The contractor shall supply and install all new and existing cabling.
14. The contractor shall supply and install KKS labels for all new equipment.
15. The contractor will update all drawings, C&I circuit drawings and electrical drawings to reflect the status of the simulator control room after the removal of obsolete equipment and installation of the new equipment.
16. As part of commissioning a hardware test is done where all hardware runs continuously and unattended for a period of 200 hours.