

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.1 GENERAL SCOPE AND EMPLOYER'S OBJECTIVES

C3.1.1 Background and Purpose

Hessequa Municipality owns, operates and maintains electrical, mechanical, electromechanical, instrumentation, control and associated infrastructure forming part of its water, wastewater and other municipal service systems throughout the Hessequa municipal area.

The infrastructure includes, but is not limited to, water and wastewater treatment works, pump stations, reservoirs, borehole installations, booster stations, sewer installations and other municipal facilities containing pumps, electric motors, aerators, mixers, blowers, mechanical drives, motor control centres, electrical and control panels, instrumentation, telemetry and process-control systems, emergency generators and associated equipment.

The Employer has internal personnel and resources responsible for the operation, inspection, maintenance and repair of this infrastructure. The purpose of this Contract is to supplement that internal capacity by establishing a framework of suitably qualified and experienced Service Providers that may be called upon, as and when required, to undertake work that requires additional capacity, specialised skills, workshop facilities, specialist equipment, OEM or manufacturer support, or resources not reasonably available internally at the time the work is required.

The Contract is therefore intended to provide the Employer with responsive and appropriately qualified electromechanical support for the maintenance, repair, refurbishment, supply, installation, testing and commissioning of municipal plant and associated systems over the Contract period.

C3.1.2 Employer's Objectives

The principal objectives of the Contract are to:

- a) maintain the availability, reliability and serviceability of critical municipal electromechanical infrastructure;
- b) provide timely access to suitably qualified Service Providers for planned, corrective, urgent and emergency work;
- c) supplement, rather than unnecessarily replace, the Employer's existing internal maintenance and operational capacity;
- d) provide access to appropriate workshop facilities, test equipment, specialised personnel, OEMs, manufacturers and approved specialists where required;
- e) reduce plant downtime and minimise interruption to municipal water, wastewater and other essential services;
- f) promote systematic fault diagnosis and condition assessment before substantial repairs or replacement of equipment are authorised;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- g) ensure that repair, refurbishment and replacement decisions are technically justified, economical and appropriate to the condition and expected remaining service life of the equipment;
- h) ensure that work is executed in accordance with applicable legislation, standards, manufacturer's requirements and accepted engineering practice;
- i) establish consistent requirements for workmanship, inspection, quality control, testing, commissioning, reporting and handover;
- j) maintain adequate records of failures, assessments, repairs, components replaced, testing undertaken and equipment returned to service;
- k) provide transparent and auditable mechanisms for instructing, authorising, measuring and paying for work performed under the framework; and
- l) monitor the performance of appointed Service Providers throughout the Contract period.

C3.1.3 Nature and Extent of the Contract

The Contract is a **rates-based framework contract** for a period of three (3) years.

Work shall arise from the Employer's operational and maintenance requirements and shall be instructed from time to time in accordance with the Contract.

The work may include, as applicable:

- a) inspection and condition assessment;
- b) fault finding and diagnosis;
- c) dismantling, removal and transportation of equipment;
- d) cleaning, stripping and detailed inspection;
- e) testing and measurement;
- f) repair and refurbishment;
- g) replacement of defective or unserviceable components;
- h) rewinding and repair of electric motors;
- i) mechanical machining and associated workshop work;
- j) supply of approved materials, components, spares and equipment;
- k) installation and reinstatement;
- l) modification or upgrading of existing equipment where specifically instructed;
- m) specialist and OEM services;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- n) functional and performance testing;
- o) commissioning and return to service;
- p) emergency stabilisation and temporary measures where required to maintain or restore essential services; and
- q) preparation and submission of the associated technical, quality and completion records.

The precise scope applicable to any individual requirement shall be determined by the Employer and communicated through the applicable Task Order, work instruction or other authorised instruction permitted by the Contract.

Work shall not be regarded as authorised merely because it is technically desirable or arises during dismantling or assessment. Where additional defects or work requirements are identified, the Service Provider shall report them to the Employer and obtain the required authorisation before proceeding, except where immediate action is expressly permitted under the emergency provisions of the Contract.

C3.1.4 Municipal In-House Capacity and Supplementary Contractor Support

The Employer retains internal personnel capable of undertaking various routine operational, maintenance, fault-finding, removal, installation and minor repair activities.

Appointment under this Contract shall therefore not imply that all work associated with an item of plant or equipment will be performed by the Service Provider.

Depending on the nature of the requirement, the Employer may elect to:

- a) perform the work wholly with internal resources;
- b) perform part of the work internally and instruct the Service Provider to perform specified activities;
- c) remove equipment and deliver it to the Service Provider's workshop;
- d) require the Service Provider to attend the municipal site;
- e) procure or provide certain materials, components or equipment itself;
- f) instruct the Service Provider to procure approved materials or components;
- g) require specialist, manufacturer or OEM support where necessary; or
- h) combine municipal resources and Service Provider resources in executing a particular Task Order.

The Service Provider shall cooperate with the Employer's personnel and shall perform only the work authorised under the applicable instruction.

The Employer shall not be obliged to outsource work merely because an applicable rate appears in the Schedule of Rates.

C3.1.5 Lots Forming Part of the Contract

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

The Contract is divided into the following Lots:

Lot 1 – Pumps, Motors and Mechanical Equipment

This Lot generally covers pumps, electric motors and associated mechanical and electromechanical plant, including aerators, mixers, agitators, blowers, gearboxes, geared drives, screens, rakes, screw conveyors, compactors, couplings, shafts and associated equipment.

The detailed requirements applicable to Lot 1 are specified in **C3.5**.

Lot 2 – MCCs, Electrical Panels, Telemetry and Control Systems

This Lot generally covers motor control centres, electrical and control panels, motor starting and protection equipment, variable-speed drives, soft starters, instrumentation, PLC and process-control equipment, telemetry, remote monitoring, communication interfaces and associated specialist support.

The detailed requirements applicable to Lot 2 are specified in **C3.6**.

Lot 3 – Emergency Generators and Associated Control Systems

This Lot generally covers emergency and standby generating plant and associated mechanical, electrical, starting, charging, fuel, cooling, protection, controller, automatic mains failure and changeover systems.

The detailed requirements applicable to Lot 3 are specified in **C3.7**.

A Service Provider shall only be eligible to receive work under a Lot for which it has been appointed, subject to the Contract and the applicable Task Order allocation provisions.

C3.1.6 Nature and Variability of Work

The Employer's infrastructure comprises equipment of different ages, manufacturers, capacities, configurations and operating duties. The condition and precise repair requirements of equipment may not always be known before inspection, dismantling or testing.

Accordingly, the nature, quantity, location, timing and value of work required during the Contract period cannot be predetermined with certainty.

Work may range from minor inspection, testing or component replacement to substantial repair or refurbishment of equipment, and may include urgent failures of plant necessary for the continued provision of municipal services.

The equipment and asset information provided in the Contract is intended to indicate the general nature and range of infrastructure that may require support. It shall not be interpreted as a complete inventory of every item that may be subject to work under the Contract.

The Employer may require work on equipment of a similar type, function, capacity or nature that is not specifically identified in the asset information, provided that such work falls within the scope of the relevant Lot and the Contract.

C3.1.7 Condition Assessment and Staged Authorisation

Where the full extent of a defect cannot reasonably be established before equipment is removed, dismantled, stripped or tested, the work may be instructed in stages.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

The initial instruction may therefore be limited to activities necessary to safely access, remove, dismantle, inspect, test or assess the equipment.

Following such assessment, the Service Provider shall submit the required findings, measurements, test results, photographs and recommendations to enable the Employer to determine the further course of action.

The Employer may thereafter:

- a) authorise some or all of the recommended repairs;
- b) require further investigation or testing;
- c) provide or procure components itself;
- d) request alternative repair or replacement options;
- e) decide that repair is uneconomical and instruct that no further repair work be undertaken;
- f) instruct reassembly or return of the equipment without further repair; or
- g) issue such other instruction as permitted by the Contract.

No subsequent stage shall be undertaken without the Employer's required authorisation.

Detailed Task Order and work execution procedures are specified in **C3.3**.

C3.1.8 No Guarantee of Work, Quantities or Expenditure

Appointment to the framework shall not constitute a guarantee of any minimum quantity, value, frequency or continuity of work.

Quantities contained in the Pricing Data, where applicable, are estimated or notional quantities used for tendering, comparison, evaluation or rate establishment and shall not be construed as guaranteed quantities.

The Employer makes no representation that:

- a) every type of work described in the Contract will be required;
- b) every item appearing in the Schedule of Rates will be utilised;
- c) the quantities of work will correspond with any estimated or notional quantities;
- d) work will be distributed equally among appointed Service Providers;
- e) any particular Service Provider will receive a minimum number or value of Task Orders; or
- f) the full available budget, contract value or CIDB capacity of any Service Provider will be utilised.

Actual work shall depend on operational requirements, available funding, plant failures, planned maintenance requirements, the Employer's internal capacity, the applicable work allocation provisions, Service Provider performance and the other conditions of the Contract.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.1.9 General Scope Principle

The Scope of Work shall be read as a whole together with the Contract Data, Framework Appointment and Work Allocation Conditions, **applicable** Task Orders, Pricing Data and all other applicable Contract documents.

The descriptions contained in this Part C3 define the general nature and technical requirements of work that may be instructed and do not, by themselves, constitute an instruction to perform any particular work.

Unless otherwise expressly provided in the Contract, work shall only proceed upon the issue of the applicable authorised instruction by the Employer.

Where there is uncertainty regarding the extent of work required, the Service Provider shall obtain clarification from the Employer before proceeding.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.2 FRAMEWORK AND PANEL ADMINISTRATION

C3.2.1 General

This section establishes the administrative controls applicable to Service Providers appointed to the framework.

Throughout the Contract period, each Service Provider shall maintain the compliance, personnel, resources and support arrangements upon which its appointment was based and shall promptly disclose any material change thereto.

Where a change requires the Employer's approval, notification alone shall not constitute approval. The proposed change shall be submitted and determined in accordance with this section and **Annexure E: Framework Change Request and Approval Form**.

Work allocation shall be administered in accordance with **C1.4**, while individual Task Orders shall be administered in accordance with **C3.3**.

C3.2.2 Authorised Representatives and Communications

The Service Provider shall nominate an authorised representative responsible for contractual and administrative communication with the Employer and shall maintain current contact details for such representative.

The Service Provider shall also provide details of an alternative representative and after-hours or emergency contacts where required.

Any change to the authorised representative or contact arrangements shall be communicated promptly to the Employer.

Only instructions issued or confirmed by persons authorised in terms of the Contract may alter the scope, value, programme or other contractual requirements of work.

Discussions, meetings, telephone conversations, site observations or communications from persons without the necessary authority shall not constitute authority to undertake additional work or incur additional expenditure.

C3.2.3 Continued Contractual Compliance

The Service Provider shall maintain throughout the Contract period all registrations, approvals, insurances and statutory requirements applicable to its appointment and the work undertaken.

These shall include, where applicable:

- a) the required CIDB registration and grading designation;
- b) Central Supplier Database registration;
- c) tax compliance;
- d) required insurances;
- e) occupational health and safety compliance;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

f) professional, trade and statutory registrations; and

g) licences, certificates and approvals required for specialised work.

The Service Provider shall immediately notify the Employer of any expiry, suspension, cancellation, restriction or other material change affecting its compliance or ability to perform work under the Contract.

The Employer may require updated documentary evidence of compliance at any time.

Where a mandatory requirement is no longer satisfied, the Employer may withhold further work from the Service Provider until the requirement has been satisfactorily restored, without prejudice to any other remedy available under the Contract.

C3.2.4 Key Personnel

Key personnel identified in the Service Provider's tender submission and relied upon for eligibility, functionality evaluation, technical capability or specialist competence shall be regarded as committed resources for the Contract.

Such personnel shall not be replaced, substituted or materially reassigned without the **prior written approval of the Employer**.

Where replacement becomes necessary, the Service Provider shall submit a **Framework Change Request** in accordance with Annexure E, stating the reason for the change and providing sufficient information for the Employer to assess the proposed replacement.

The proposed replacement shall possess qualifications, experience, registrations, competency and capability **equal to or better than** those of the person being replaced, having regard to the requirements upon which the Service Provider was evaluated and appointed.

Where the person being replaced contributed to the Service Provider's functionality score, the Employer may assess the proposed replacement against the **same applicable functionality criteria used during tender evaluation**.

No substitution shall be approved where it would cause the Service Provider to:

- a) cease satisfying a mandatory tender or Contract requirement;
- b) fall below an applicable minimum functionality threshold; or
- c) materially reduce the technical capability upon which its appointment was based.

The Service Provider shall submit, as applicable:

- a) the name and role of the person being replaced;
- b) the reason for replacement;
- c) the name and proposed role of the replacement;
- d) curriculum vitae;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- e) qualifications and certificates;
- f) professional, trade or statutory registrations;
- g) relevant experience; and
- h) evidence of availability.

Unexpected temporary unavailability shall be reported immediately. Any interim arrangement necessary to maintain continuity shall remain subject to the Employer's acceptance and shall not constitute approval of a permanent substitution.

C3.2.5 Employer-Required Replacement of Personnel

The Employer may require the removal or replacement of any person assigned to work under the Contract who:

- a) does not possess the required competence, qualification, registration or authorisation;
- b) repeatedly performs work below the required standard;
- c) fails to comply with occupational health and safety requirements;
- d) engages in misconduct at a municipal facility;
- e) materially fails to comply with lawful instructions; or
- f) presents a material risk to municipal personnel, infrastructure, operations or the proper execution of the Contract.

The Service Provider shall provide a suitable replacement without unreasonable delay.

Replacement under this clause shall not entitle the Service Provider to additional payment and, where the person concerned constitutes key personnel, the replacement shall satisfy the requirements of **C3.2.4**.

C3.2.6 Changes to Evaluated Resources and Support Arrangements

Where workshop facilities, plant, tools, test equipment, subcontractors, specialist arrangements, OEM or manufacturer support, or other resources formed a material part of the Service Provider's tender submission or functionality evaluation, such resources or arrangements shall not be materially reduced, withdrawn or substituted without the Employer's prior written approval.

Any proposed replacement or alternative shall provide capability **equal to or better than** the resource or arrangement upon which the appointment was based.

The Employer may require supporting evidence and may assess the proposed replacement against the same applicable tender requirement or functionality criterion.

A material change under this clause shall be submitted using **Annexure E**.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.2.7 Temporary Unavailability

Where a Service Provider is temporarily unable to accept work for which it would otherwise be considered, it shall notify the Employer as soon as reasonably practicable, stating:

- a) the reason for the unavailability;
- b) the anticipated duration; and
- c) the expected date on which availability will be restored.

The effect of such unavailability on work allocation shall be dealt with in accordance with **C1.4**.

Where unavailability affects an emergency-duty arrangement, the applicable requirements of **C3.12** shall apply.

Temporary unavailability shall not be used to selectively decline particular work while remaining available for other work of substantially the same nature.

C3.2.8 Subcontractors, Specialists, OEMs and Manufacturers

Where subcontractors, specialists, OEMs or manufacturers are utilised, the Service Provider shall obtain the Employer's approval where such approval is required under the Contract.

The Service Provider shall remain responsible for the coordination, quality and performance of work undertaken on its behalf, except where the Contract expressly provides otherwise.

Where a subcontractor, specialist, OEM or manufacturer formed part of the Service Provider's tender submission or functionality evaluation, any material substitution shall be subject to **C3.2.6**.

Nothing in this clause authorises additional expenditure. Materials, specialist services, quotations and applicable handling fees shall be dealt with in accordance with the Pricing Data and other applicable provisions of the Contract.

C3.2.9 Change Control

Material changes affecting the basis upon which the Service Provider was appointed or the authorised requirements of a Task Order shall be subject to formal change control.

A **Change Request** shall be required where a proposed change affects, as applicable:

- a) key personnel;
- b) evaluated resources or facilities;
- c) subcontractors, specialists, OEMs or manufacturer arrangements requiring approval;
- d) an authorised Task Order scope;
- e) the quantity or extent of authorised work;
- f) an approved material, component or item of equipment;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- g) an approved technical solution or methodology where the change has a material consequence;
- h) the Task Order value;
- i) the agreed programme or completion date; or
- j) another material contractual requirement.

The Change Request shall be submitted on **Annexure E** and shall clearly identify:

- a) the existing approved position;
- b) the proposed change;
- c) the reason and justification for the change;
- d) supporting information;
- e) the technical implications;
- f) the financial implications, where applicable; and
- g) the programme implications, where applicable.

Where a proposed change arises from the inspection, dismantling, testing or assessment of equipment, the Change Request shall be supported by the applicable findings, measurements, test results, photographs, quotations or other evidence reasonably necessary for the Employer to make an informed decision.

Submission of a Change Request shall not constitute authority to proceed.

The Employer may:

- a) approve the request in whole or in part;
- b) approve it subject to conditions;
- c) reject it;
- d) request further information, testing or quotations;
- e) require an alternative proposal; or
- f) issue another instruction permitted by the Contract.

No additional work, expenditure, substitution or extension shall be payable or recognised merely because the Service Provider considered it necessary.

C3.2.10 Emergency Changes

Where immediate action is reasonably necessary to:

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- a) protect life or prevent injury;
- b) prevent material environmental harm;
- c) prevent substantial damage to municipal assets; or
- d) stabilise or restore an essential municipal service,

the Service Provider may, where prior approval cannot reasonably be obtained, undertake only the **minimum action necessary to make the situation safe or stabilise the affected service.**

The Employer shall be notified immediately or as soon as reasonably practicable.

Emergency action shall not constitute authority for permanent repair, replacement, improvement or additional work beyond that necessary to address the immediate condition. Further work shall be subject to the normal authorisation and change-control requirements of the Contract.

C3.2.11 Approval of Changes

A Change Request shall only become effective once approved in writing by a person having the necessary authority on behalf of the Employer.

The approval shall identify, as applicable:

- a) the change approved;
- b) any conditions attached to the approval;
- c) the approved financial effect or maximum authorised amount;
- d) any approved programme adjustment;
- e) any revised completion date; and
- f) the effective date.

Approval of a technical proposal shall **not automatically constitute approval of additional expenditure** unless the financial implication is expressly approved.

Similarly, approval of an amount shall not authorise work beyond the scope expressly approved.

No approval shall operate retrospectively merely because work has already been performed, except to the extent expressly permitted under **C3.2.10.**

Approved changes shall be referenced in the applicable Task Order, job cards, reports, invoices and close-out documentation.

C3.2.12 Change Register

A **Change Register** shall be maintained for changes submitted under this Contract.

As a minimum, the register shall record:

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- a) Change Request number;
- b) applicable Lot;
- c) Task Order number, where applicable;
- d) date submitted;
- e) category of change;
- f) brief description;
- g) status;
- h) value requested and value approved, where applicable;
- i) date of decision;
- j) approving authority; and
- k) revised Task Order value or completion date, where applicable.

Approved, rejected, withdrawn and superseded Change Requests shall remain identifiable in the register for audit purposes.

C3.2.13 Framework Administration Records

The Employer may maintain such records as are reasonably necessary for administration and oversight of the framework, including:

- a) appointed Service Providers and applicable Lots;
- b) current compliance information;
- c) authorised representatives;
- d) approved key personnel and personnel substitutions;
- e) approved evaluated resources and support arrangements;
- f) availability status;
- g) Task Orders issued;
- h) Change Requests and the Change Register;
- i) expenditure;
- j) warranties and outstanding defects; and
- k) performance information.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

The Service Provider shall provide information reasonably required by the Employer to keep such records current.

C3.3 TASK ORDER PROCEDURE AND CONTROL

C3.3.1 General

Except for emergency action permitted in accordance with the Contract, all work under the Contract shall be undertaken through an authorised Task Order issued by the Employer. Where emergency action is undertaken before a Task Order can reasonably be issued, the instruction and work undertaken shall be recorded and confirmed through a Task Order as soon as reasonably practicable.

A Task Order shall define the work authorised at the time of issue and shall constitute the principal control document for the scope, expenditure, programme and completion of the work.

A Task Order may authorise:

- a) a complete and clearly defined activity; or
- b) only a particular stage of work where the condition of the equipment or full extent of the required work cannot reasonably be determined beforehand.

The Service Provider shall not proceed beyond the scope, stage or financial limit authorised by the Employer.

The selection and allocation of Service Providers shall be governed by **C1.4**. This section governs the control and execution of work after a Task Order has been issued.

C3.3.2 Initiation of Work

A Task Order may arise from a plant failure, defect, planned maintenance requirement, inspection, test result, operational requirement, safety requirement, or other authorised municipal need.

Before issuing the Task Order, the Employer shall determine the extent of work that can reasonably be defined from the information available.

Where the nature or extent of a defect is uncertain, the initial Task Order shall, where appropriate, be limited to the inspection, testing, removal, dismantling or assessment necessary to establish the condition of the equipment.

This shall not constitute authority to undertake subsequent repair, refurbishment or replacement unless expressly included in the Task Order.

C3.3.3 Minimum Task Order Information

Each Task Order shall contain sufficient information to identify and control the work and shall, as applicable, state:

- a) the Contract and Task Order numbers;
- b) the applicable Lot;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- c) the appointed Service Provider;
- d) the municipal facility, site or location;
- e) the plant, equipment or asset concerned;
- f) the authorised scope or stage of work;
- g) applicable rates or other authorised pricing basis;
- h) authorised quantities, where applicable;
- i) the authorised value or financial limit;
- j) the date of instruction;
- k) required response or commencement;
- l) required or agreed completion date;
- m) the Employer's responsible representative;
- n) particular operational, technical or safety requirements; and
- o) required deliverables.

Where the work is being undertaken in stages, the Task Order shall identify the stage presently authorised.

C3.3.4 Service Provider Review and Acceptance

Upon receipt of a Task Order, the Service Provider shall review the instruction and promptly notify the Employer of any apparent ambiguity, omission, conflict or constraint that may materially affect execution.

The Service Provider shall not proceed on an assumption where clarification is reasonably required.

Where requested, the Service Provider shall confirm:

- a) acceptance of the Task Order;
- b) availability;
- c) proposed commencement;
- d) anticipated completion or turnaround time; and
- e) any material constraint known at that stage.

Acceptance of a Task Order shall not vary or expand the work authorised therein.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.3.5 Stage 1 – Initial Inspection, Testing and Diagnosis

Where applicable, the initial stage shall establish the nature and apparent extent of the defect or requirement.

The authorised activities may include:

- a) site attendance and visual inspection;
- b) operational checks;
- c) fault finding;
- d) electrical testing;
- e) mechanical inspection and testing;
- f) measurement of relevant operating parameters;
- g) isolation and making safe;
- h) preliminary diagnosis; and
- i) removal of equipment where expressly authorised.

The Service Provider shall record the relevant condition found, observations, measurements and test results.

Where the defect can be rectified entirely within the scope and financial authority already provided, the Service Provider may proceed in accordance with the Task Order.

Where further work exceeds the authorised scope, stage or financial limit, the Service Provider shall stop at the authorised point and refer the matter to the Employer.

C3.3.6 Stage 2 – Removal, Dismantling and Detailed Assessment

Where the extent of a defect cannot reasonably be determined through initial inspection and testing, the Employer may authorise removal, dismantling, stripping or further assessment.

The Service Provider shall preserve appropriate evidence of the condition of the equipment before and during dismantling, including photographs, measurements and test results relevant to the failure.

Dismantled components shall be suitably identified, protected and retained pending the Employer's decision.

Authority to remove, dismantle or strip equipment shall **not constitute authority to repair, rewind, machine, replace components or otherwise proceed with remedial work**, unless expressly stated in the Task Order.

C3.3.7 Condition and Assessment Report

Following an authorised assessment, the Service Provider shall submit a written **Condition and Assessment Report** appropriate to the nature of the equipment and work.

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HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

The report shall include, where applicable:

- a) equipment identification and available nameplate information;
- b) condition as found or received;
- c) reported fault or operating symptoms;
- d) inspections and tests undertaken;
- e) measurements and test results;
- f) defects identified;
- g) probable cause of failure, where reasonably determinable;
- h) condition of principal components;
- i) work required to restore the equipment to service;
- j) components requiring repair or replacement;
- k) repair, refurbishment or replacement options where appropriate;
- l) supporting photographs;
- m) anticipated turnaround time; and
- n) estimated cost based on the applicable Contract pricing provisions.

The report shall clearly distinguish between:

- i) work already authorised and completed;
- ii) work already authorised but outstanding; and
- iii) additional work requiring further authorisation.

C3.3.8 Employer's Decision Following Assessment

Following consideration of the Condition and Assessment Report, the Employer may:

- a) authorise the recommended repair or refurbishment;
- b) authorise only selected elements of the proposed work;
- c) require further inspection or testing;
- d) request additional information;
- e) require an alternative repair methodology;

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- f) request repair-versus-replacement options;
- g) provide or procure materials or components;
- h) require quotations for materials, OEM components or specialist services;
- i) determine that further repair is not technically or economically justified;
- j) instruct reassembly or return without further repair; or
- k) issue another instruction permitted by the Contract.

Where the Employer's decision results in a material change to the authorised Task Order, the change shall be processed in accordance with **C3.2 and Annexure E**.

No subsequent stage shall commence until the required authorisation has been issued.

C3.3.9 Stage 3 – Repair, Refurbishment or Replacement

Once authorised, the Service Provider shall undertake the approved repair, refurbishment, component replacement or other remedial work.

The work shall be limited to the approved scope and shall comply with the applicable technical requirements, approved proposal, manufacturer's requirements where applicable, and the quality requirements of the Contract.

Where additional defects are discovered during the work, the Service Provider shall:

- a) record the condition;
- b) preserve appropriate supporting evidence;
- c) notify the Employer;
- d) identify the technical and financial implications; and
- e) obtain the required authorisation before undertaking additional work.

Additional defects shall not automatically be incorporated into the authorised repair.

Where a formal change is required, **Annexure E** shall apply.

C3.3.10 Materials, Components and Specialist Inputs

Materials, replacement components and specialist inputs required for the Task Order shall be controlled in accordance with the applicable Pricing Data and **C3.14**.

An approved make, type, rating, material or component shall not be substituted without the Employer's approval.

Where a proposed alternative is necessary, the Service Provider shall submit sufficient technical information to demonstrate suitability and equivalence before the alternative is used.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Where instructed, quotations shall be obtained from suppliers, OEMs, manufacturers or specialists identified or nominated by the Employer.

C3.3.11 Stage 4 – Testing and Verification

Following completion of the authorised work, the Service Provider shall undertake the applicable tests and inspections necessary to demonstrate that the equipment is suitable to proceed to installation, commissioning or return to the Employer.

Testing shall verify, as applicable, that:

- a) the authorised work has been completed;
- b) repaired or replaced components have been correctly installed;
- c) applicable electrical and mechanical parameters are acceptable;
- d) safety and protection functions affected by the work are operational;
- e) the identified defect has been satisfactorily addressed; and
- f) the equipment is fit to proceed to the next authorised stage.

Test results shall be recorded.

Detailed testing requirements are specified in **C3.9**.

C3.3.12 Stage 5 – Reinstallation, Commissioning and Return to Service

Where included in the Task Order, the Service Provider shall reinstall, align, connect, configure, test and commission the equipment as applicable.

Return to service shall be coordinated with the Employer's responsible personnel and undertaken in accordance with applicable municipal operational and safety procedures.

Where reinstallation or commissioning is undertaken by the Employer using internal resources, the Service Provider shall provide the applicable repair, configuration and test information necessary for that purpose.

Successful workshop testing shall not, where site commissioning is required, constitute final acceptance of the equipment.

C3.3.13 Financial Control

The Task Order value or financial limit, together with subsequently approved changes, shall constitute the maximum authorised expenditure for the work.

The Service Provider shall monitor expenditure against the authorised amount and shall notify the Employer before the financial limit is reached where additional work may be necessary.

The Service Provider shall not exceed the authorised value in anticipation of subsequent approval.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Only work, quantities, materials, components and specialist inputs properly authorised and substantiated in accordance with the Contract shall be considered for payment.

An approved Change Request affecting value shall form part of the financial authority for the Task Order.

C3.3.14 Suspension or Discontinuation

The Employer may instruct that a Task Order, or any stage thereof, be suspended or discontinued.

Upon such instruction, the Service Provider shall:

- a) cease the affected work in a safe manner;
- b) protect municipal equipment, components and materials in its custody;
- c) record the stage reached;
- d) identify authorised work completed up to the instruction;
- e) preserve dismantled components and relevant evidence; and
- f) comply with the Employer's instructions regarding storage, reassembly, return or other disposition.

No further expenditure shall be incurred after suspension or discontinuation except that reasonably necessary to make the work safe, protect the Employer's property or comply with an express instruction.

C3.3.15 Completion and Close-Out

A Task Order shall not be regarded as complete merely because the equipment has been repaired, delivered or returned to operation.

The Service Provider shall submit the applicable close-out information, which may include:

- a) completed job card;
- b) Condition and Assessment Report;
- c) approved Change Requests;
- d) repair or refurbishment report;
- e) test results and certificates;
- f) commissioning records;
- g) records of materials and components installed;
- h) OEM or specialist reports;
- i) relevant photographs;

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HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- j) warranty information;
- k) updated equipment information where applicable;
- l) final measurement and quantity records; and
- m) completion documentation required by the Contract.

The Employer may withhold Task Order close-out pending submission of required documentation or correction of outstanding work or defects.

Detailed reporting and record requirements are specified in **C3.13**.

C3.3.16 Task Order Process Flow

The normal Task Order process shall be:

Need identified → Contractor allocated under C1.4 → Task Order issued → Inspection/diagnosis where required → Condition Assessment → Employer authorisation → Repair/refurbishment/replacement → Testing → Reinstallation/commissioning → Close-out

The above represents the normal process. Stages that are not applicable to a particular Task Order may be omitted, provided that no omission shall constitute authority to proceed beyond the scope or financial limit authorised by the Employer.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.4 GENERAL TECHNICAL REQUIREMENTS

C3.4.1 General

All work undertaken under the Contract shall be executed in accordance with the applicable Task Order, this Scope of Work, approved drawings and technical information, applicable legislation and standards, manufacturer's requirements and generally accepted engineering practice.

The Service Provider shall provide workmanship, materials, equipment, tools, test instruments, competent personnel and technical support appropriate to the work instructed, except for items expressly stated to be provided by the Employer.

The requirements of this section apply to all Lots unless a Lot-specific requirement expressly provides otherwise.

C3.4.2 Applicable Legislation, Standards and Codes

All work shall comply with the latest applicable editions, including amendments, of relevant legislation, regulations, standards and codes in force at the time the work is performed.

These shall include, where applicable:

- a) Occupational Health and Safety Act, 1993 (Act 85 of 1993), and applicable regulations;
- b) Electrical Installation Regulations;
- c) Electrical Machinery Regulations;
- d) General Machinery Regulations;
- e) Pressure Equipment Regulations, where applicable;
- f) applicable SANS standards;
- g) applicable IEC standards;
- h) applicable ISO standards;
- i) applicable municipal standards, specifications and procedures;
- j) manufacturer's and OEM requirements; and
- k) other statutory requirements applicable to the particular plant, equipment or installation.

Where requirements differ, the Service Provider shall notify the Employer before proceeding where clarification is reasonably necessary.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.4.3 Manufacturer's Requirements and Existing Equipment

Existing plant and systems comprise equipment from various manufacturers and of different ages, capacities and configurations.

Repair, replacement, modification and installation work shall maintain the required functionality, safety, reliability and compatibility of the affected equipment or system.

Where manufacturer's information is available, work shall be undertaken in accordance with the applicable manufacturer's requirements, tolerances and recommended procedures unless otherwise approved by the Employer.

The Service Provider shall not make an unauthorised modification that materially changes the rating, operating characteristics, protection, control philosophy or intended function of existing equipment.

C3.4.4 Materials and Components

Materials, components and equipment incorporated into the Works shall be new and of suitable quality unless the Task Order expressly provides otherwise.

Replacement components shall be:

- a) of the correct type, rating, duty and application;
- b) compatible with the existing equipment and operating environment;
- c) OEM components where specifically required; or
- d) technically equivalent alternatives where approved by the Employer.

Where an alternative is proposed, the Service Provider shall provide sufficient technical information to demonstrate equivalence and suitability before installation.

Approval of an alternative shall not relieve the Service Provider of responsibility for its suitability and performance.

Detailed requirements for procurement, verification, removed components and spares are specified in C2 and C3.14.

C3.4.5 Workmanship

Workmanship shall be of a professional standard appropriate to municipal electromechanical infrastructure and shall result in an installation or repaired item that is safe, reliable, serviceable and suitable for its intended duty.

Work shall be carried out so as to avoid unnecessary damage to existing equipment, structures, cables, pipework, instrumentation and surrounding installations.

Upon completion, equipment and work areas shall be left clean, secure and in a condition suitable for operation.

Temporary connections, bypasses, modifications or repairs shall not be left as permanent installations unless expressly approved by the Employer.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.4.6 Competent Personnel

Work shall be performed and supervised by persons possessing the qualifications, competency, experience, registrations and authorisations appropriate to the work concerned.

Where legislation requires work to be undertaken, supervised, inspected or certified by a specifically registered or authorised person, the Service Provider shall ensure that such person is provided.

Specialist work shall only be undertaken by personnel competent in the applicable equipment, technology or system.

The requirements of this clause are additional to the personnel and resource requirements of C3.2.

C3.4.7 Tools, Test Equipment and Instruments

The Service Provider shall provide the tools, equipment and test instruments reasonably necessary to execute and verify the work instructed, except where expressly provided otherwise.

Test and measuring instruments used for acceptance, certification or recorded measurements shall:

- a) be suitable for the intended measurement;
- b) have an appropriate range and accuracy;
- c) be maintained in serviceable condition; and
- d) where applicable, have current calibration traceable to an appropriate recognised standard.

Calibration certificates shall be made available to the Employer upon request.

C3.4.8 Existing Services and Plant

Before commencing work, the Service Provider shall familiarise itself with the affected plant, equipment and surrounding services to the extent reasonably necessary for safe execution.

Existing municipal infrastructure shall be protected against damage arising from the Service Provider's activities.

Any existing defect or damage likely to affect the work or for which the Service Provider could otherwise be held responsible shall be reported to the Employer before work proceeds, where reasonably practicable.

Damage caused by the Service Provider shall be reported immediately and rectified in accordance with the Contract.

C3.4.9 Isolation and Return to Service

Isolation, de-isolation and return to service of municipal plant shall be undertaken in accordance with the Employer's applicable operational and safety procedures.

The Service Provider shall not operate, isolate, energise, start, stop or return municipal equipment to service without the required authority.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Where work affects more than one discipline or system, the Service Provider shall coordinate the work with the Employer and other affected parties.

C3.4.10 Drawings and Technical Information

The Service Provider shall review drawings, manuals, nameplate information, settings, schedules and other technical information made available by the Employer where relevant to the instructed work.

Where existing information is found to be materially incorrect or inconsistent with the installation, the discrepancy shall be reported to the Employer.

Where work results in an approved material alteration to an installation, the Service Provider shall provide the information necessary to update the applicable drawings, equipment schedules, settings, asset records or other technical documentation.

C3.4.11 Interchangeability and Compatibility

Replacement equipment and components shall, as far as reasonably practicable, preserve compatibility and interchangeability with the Employer's existing equipment and systems.

Particular consideration shall be given to:

- a) physical dimensions and mounting arrangements;
- b) electrical ratings;
- c) mechanical duty and performance;
- d) protection requirements;
- e) control interfaces;
- f) communications and signal interfaces;
- g) environmental conditions;
- h) availability of spares and technical support; and
- i) maintainability.

No change that creates unnecessary proprietary dependence or materially reduces maintainability shall be introduced without the Employer's approval.

C3.4.12 Identification and Labelling

Equipment, cables, conductors, terminals, control devices, instruments and other components affected by the work shall be identified and labelled where required for safe operation and maintenance.

Existing identification shall be retained or reinstated unless an approved modification requires it to be changed.

New labels shall be durable, legible and appropriate to the operating environment.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.4.13 Protection and Preservation

Equipment removed from service or dismantled for inspection or repair shall be handled, stored and protected so as to prevent deterioration, contamination, corrosion, loss or damage.

Open pipework, cable entries, electrical enclosures, bearings, machined surfaces and other exposed equipment shall be appropriately protected during the work.

Municipal equipment and removed components shall remain identifiable and shall not be disposed of except in accordance with C3.14 or an express instruction from the Employer.

C3.4.14 Interfaces Between Lots

Where work involves equipment or systems falling within more than one Lot, the Employer shall determine the applicable scope and interface between Service Providers.

Each Service Provider shall cooperate with the Employer, municipal personnel and other appointed Service Providers to ensure that interfaces are properly coordinated.

Completion of one portion of work shall not compromise the safety, functionality or commissioning of another portion.

C3.4.15 Technical Deviations

The Service Provider shall not deviate materially from the specified equipment, technical requirements, approved methodology, drawings, settings or configuration without the Employer's prior approval.

Where a deviation is proposed, the Service Provider shall provide sufficient information to enable the Employer to assess the technical, operational, maintenance, financial and programme implications.

Where the deviation constitutes a material change to an authorised Task Order, **C3.2.9 and Annexure E** shall apply.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.5 LOT 1 – PUMPS, MOTORS AND MECHANICAL EQUIPMENT

C3.5.1 Scope

Lot 1 covers the inspection, fault diagnosis, maintenance, repair, overhaul, refurbishment, removal, installation, replacement, alignment, testing and commissioning of pumps, electric motors and associated mechanical equipment forming part of the Employer's water, wastewater and other electromechanical installations.

The scope includes, where applicable:

- a) centrifugal pumps;
- b) end-suction and split-case pumps;
- c) vertical multistage and high-head pumps;
- d) submersible sewage and wastewater pumps;
- e) submersible clean-water, booster and borehole pumps;
- f) electric motors;
- g) aerators;
- h) mixers and agitators;
- i) blowers;
- j) gearboxes and geared drives;
- k) screens and mechanical rakes;
- l) screw conveyors and compactors;
- m) shafts, couplings and mechanical drive components;
- n) valves, pipework, fittings and mechanical components directly associated with the equipment being worked on;
- o) borehole rising mains, headworks and associated mechanical components; and
- p) other associated mechanical equipment authorised under a Task Order.

Work shall include all activities reasonably necessary to return the affected equipment to a safe, serviceable and reliable operating condition within the authorised scope.

C3.5.2 General Requirements for Pump and Mechanical Repairs

Before dismantling equipment, the Service Provider shall, where reasonably practicable:

- a) record equipment identification and nameplate information;
- b) establish the reported fault and operating history available from the Employer;
- c) visually inspect the equipment and installation;
- d) record relevant existing condition and defects; and
- e) undertake appropriate preliminary tests.

Dismantled components shall be inspected for wear, corrosion, erosion, cavitation, cracking, distortion, overheating, mechanical damage and other defects relevant to the equipment concerned.

No component requiring replacement or material repair outside the authorised scope shall be replaced or repaired without approval in accordance with C3.3.

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HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.5.3 Pumps

Pump repairs and refurbishment shall restore the pump, as far as reasonably practicable, to the required operating condition and duty.

Depending on pump type and authorised scope, work may include:

- a) dismantling and cleaning;
- b) inspection of casing and covers;
- c) inspection and measurement of impellers;
- d) inspection of shafts and sleeves;
- e) bearings and bearing housings;
- f) wear rings and wear surfaces;
- g) mechanical seals, gland packing and sealing arrangements;
- h) bushes and sleeves;
- i) keys, locking devices and fasteners;
- j) couplings;
- k) guide rails and discharge connections for submersible installations;
- l) lubrication;
- m) clearances and tolerances;
- n) corrosion protection and coating;
- o) balancing where required; and
- p) testing following reassembly.

Impellers, shafts, wear rings and other critical components shall be assessed against the applicable manufacturer's tolerances where available.

Repair techniques that materially alter hydraulic characteristics, balance, strength or reliability shall not be used without approval.

C3.5.4 Pump Performance

Where the nature of the repair or Task Order requires performance verification, the repaired or installed pump shall be demonstrated to operate satisfactorily at the required duty.

Relevant parameters may include:

- a) flow;
- b) discharge pressure or head;
- c) suction conditions;
- d) motor current;
- e) rotational direction;
- f) vibration;
- g) noise;
- h) leakage; and
- i) bearing and operating temperatures.

Where original pump curves or design duties are available, these shall be used as the reference.

Where reliable original data is unavailable, acceptance shall be based on the specified Task Order requirements, available historical information and satisfactory operation in the actual installation.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.5.5 Submersible Sewage and Wastewater Pumps

Submersible sewage and wastewater pump work shall take account of the severe operating environment and shall include inspection of the complete pump assembly relevant to the authorised scope.

Particular attention shall be given to:

- a) mechanical seals and seal chambers;
- b) moisture ingress;
- c) oil condition and seal oil;
- d) bearings;
- e) impeller and volute wear;
- f) blockage and ragging damage;
- g) shaft condition;
- h) cable-entry sealing;
- i) lifting arrangements;
- j) guide rails and guide shoes;
- k) discharge pedestal/coupling condition; and
- l) corrosion and coating condition.

Following overhaul, the pump shall be subjected to appropriate leakage and electrical integrity tests before return to service.

C3.5.6 Borehole Pumping Equipment

Lot 1 includes the mechanical elements of municipal borehole pumping installations.

The scope may include:

- a) borehole/submersible pump assemblies;
- b) pump motors to the extent falling within Lot 1;
- c) rising mains and column pipework;
- d) couplings and connectors;
- e) borehole headworks;
- f) discharge pipework immediately associated with the borehole installation;
- g) valves and non-return valves;
- h) mechanical supports and fittings; and
- i) removal and reinstallation of the above where authorised.

Borehole pump extraction and installation shall be undertaken using equipment and methods appropriate to the depth, mass, rising-main arrangement and site conditions.

The Service Provider shall prevent the uncontrolled dropping of pumps, pipes, cables or components into the borehole.

Where extraction reveals damaged rising mains, excessive corrosion, failed joints, damaged cables or other defects outside the authorised scope, these shall be recorded and reported before additional work proceeds.

Electrical supply, protection, control, instrumentation and telemetry associated with boreholes shall fall under Lot 2 except for work expressly incidental to an authorised Lot 1 intervention.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.5.7 Electric Motors

Motor work may include inspection, testing, dismantling, repair, rewinding, refurbishment, bearing replacement, reassembly and testing.

Before repair or rewinding, the Service Provider shall record, where available:

- a) manufacturer;
- b) serial number;
- c) frame size;
- d) rated power;
- e) rated voltage;
- f) full-load current;
- g) frequency;
- h) speed/poles;
- i) insulation class;
- j) duty;
- k) enclosure/IP rating; and
- l) connection details.

Repairs shall not reduce the original motor's rated duty, insulation performance, enclosure protection, mechanical integrity or suitability for the application.

C3.5.8 Motor Rewinding

Where rewinding is authorised, the winding shall be reconstructed to maintain the motor's intended electrical and mechanical characteristics.

The Service Provider shall record the original winding data before stripping wherever reasonably possible.

Rewinding shall include appropriate:

- a) winding conductors;
- b) slot insulation;
- c) phase insulation;
- d) wedges and securing materials;
- e) lead connections;
- f) impregnation and varnishing; and
- g) curing.

Any proposed material alteration to the winding configuration, number of turns, conductor arrangement or electrical characteristics shall require approval.

Rewound motors shall be tested in accordance with the applicable standards and C3.9 before release.

C3.5.9 Bearings, Shafts and Bearing Housings

Bearings shall be of the correct type, internal clearance, load rating, speed rating and application.

Replacement bearings shall be sourced from reputable manufacturers and shall not be installed where there is evidence that associated shaft or housing damage would materially shorten bearing life.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Shafts and bearing housings shall be inspected for:

- a) wear;
- b) scoring;
- c) ovality;
- d) fretting;
- e) cracking;
- f) corrosion; and
- g) dimensional condition at bearing and seal locations.

Reclamation of shafts or bearing housings by machining, sleeving, metal spraying or other approved methods shall only be undertaken where technically appropriate and authorised.

C3.5.10 Mechanical Seals and Sealing Arrangements

Mechanical seals shall be selected to suit the pumped medium, operating pressure, temperature, shaft speed and equipment concerned.

Seal faces, elastomers, springs and associated materials shall be suitable for the application.

Where the original sealing arrangement is obsolete or repeatedly problematic, an alternative may be proposed with supporting technical information for the Employer's approval.

Gland-packed equipment shall be repacked using material appropriate to the pumped medium and operating conditions.

C3.5.11 Impellers and Rotating Components

Impellers and other rotating components shall be inspected for erosion, corrosion, cavitation, cracking, distortion, excessive wear and imbalance.

Material shall not be removed from an impeller or other rotating component in a manner that materially alters its hydraulic or mechanical performance.

Where repair of a rotating component may affect balance, appropriate balancing shall be undertaken before the equipment is returned to service.

C3.5.12 Couplings and Alignment

Couplings shall be inspected for wear, damage, deterioration and suitability.

Following removal, replacement or disturbance of coupled equipment, alignment shall be checked and corrected before commissioning.

Alignment shall be undertaken using methods appropriate to the equipment and required accuracy.

Where applicable, allowance shall be made for operating temperature, pipe strain, equipment movement and manufacturer's requirements.

Coupling guards shall be reinstated before equipment is returned to normal service.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.5.13 Aerators, Mixers and Agitators

Work on aerators, mixers and agitators may include motors, gearboxes, shafts, bearings, couplings, impellers, propellers, mounting arrangements and other associated mechanical components.

Repairs shall preserve the required rotational speed, direction, mechanical integrity and intended process duty.

Particular attention shall be given to:

- a) shaft straightness;
- b) bearing condition;
- c) gearbox condition and lubrication;
- d) mechanical seals;
- e) propeller/impeller condition;
- f) mounting integrity;
- g) vibration; and
- h) corrosion.

C3.5.14 Blowers

Blower maintenance and repair shall be appropriate to the blower type and manufacturer's requirements.

The scope may include:

- a) bearings;
- b) seals;
- c) belts and pulleys;
- d) couplings;
- e) lubrication;
- f) filters;
- g) drive arrangements;
- h) vibration and alignment; and
- i) associated mechanical components.

Internal overhaul of specialist blower elements shall be undertaken only by suitably competent personnel or an approved specialist where required.

C3.5.15 Gearboxes and Geared Drives

Gearboxes and geared drives shall be inspected for:

- a) lubricant condition and level;
- b) leakage;
- c) bearings;
- d) gears and gear teeth;
- e) shafts;
- f) seals;
- g) backlash where relevant;
- h) abnormal noise;
- i) overheating; and
- j) mounting and alignment.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Lubricants shall comply with the manufacturer's requirements or an approved technically equivalent specification.

Gearbox overhaul shall not alter the required ratio or duty unless specifically authorised.

C3.5.16 Screens, Rakes, Screw Conveyors and Compactors

Work on wastewater screening and solids-handling equipment may include:

- a) motors and geared drives;
- b) bearings;
- c) chains and sprockets;
- d) shafts;
- e) rollers and guides;
- f) screens and rakes;
- g) screws and flights;
- h) seals;
- i) mechanical overload devices;
- j) supports and mountings; and
- k) associated mechanical components.

Repairs shall restore safe and reliable operation without compromising guarding, overload protection or other safety features.

C3.5.17 Pipework, Valves and Associated Mechanical Components

Where directly associated with authorised Lot 1 work, the Service Provider may be required to remove, repair, modify or reinstate pipework, valves, fittings, supports and associated mechanical components.

Pipework shall be installed without imposing unacceptable strain on pumps or other equipment.

Flanged joints shall be properly aligned and use suitable gaskets, fasteners and tightening practices.

Valves shall be suitable for the pressure, medium and duty concerned and shall be installed in the correct orientation.

Any substantial alteration to municipal pipework beyond that directly associated with the electromechanical intervention shall require specific authorisation.

C3.5.18 Corrosion Protection

Surfaces disturbed by repair, fabrication or installation shall be restored with corrosion protection suitable for the environment and substrate.

Preparation and coating shall be appropriate to the operating conditions, including where applicable:

- a) potable-water environments;
- b) wastewater and sewage environments;
- c) corrosive treatment-process areas;
- d) outdoor/coastal exposure; and
- e) submerged or intermittently wet equipment.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Existing stainless-steel or other corrosion-resistant materials shall not be replaced with materially inferior materials without approval.

C3.5.19 Removal, Transport and Reinstallation

Equipment removed from Site shall be identified and protected against loss or damage.

Open pipework and exposed connections shall be temporarily protected while equipment is removed.

Following repair, equipment shall be reinstalled using appropriate fasteners, gaskets, seals, alignment practices and manufacturer's requirements.

Existing guards, supports, covers, cable arrangements and associated components disturbed during the work shall be properly reinstated.

C3.5.20 Testing and Return to Service

Equipment shall not be returned to service until the applicable repair and installation checks have been completed.

Testing shall be appropriate to the equipment and work undertaken and shall comply with **C3.9 – Testing, Inspection and Commissioning**.

Where practicable, final testing shall include operation under actual or representative duty conditions.

Abnormal vibration, excessive noise, leakage, overheating, incorrect rotation or other material defects identified during commissioning shall be rectified before final acceptance.

C3.6 LOT 2 – MCCs, ELECTRICAL PANELS, TELEMETRY AND CONTROL SYSTEMS

C3.6.1 Scope

Lot 2 covers the inspection, fault diagnosis, maintenance, repair, refurbishment, modification, supply, installation, configuration, integration, testing and commissioning of electrical, instrumentation, automation, telemetry and control equipment associated with the Employer's electromechanical installations.

The scope includes, where applicable:

- a) motor control centres (MCCs);
- b) electrical distribution and control panels;
- c) DOL, star-delta and other motor starters;
- d) variable speed drives (VSDs);
- e) soft starters;
- f) motor protection and control equipment;
- g) control wiring and field cabling;
- h) programmable logic controllers (PLCs);
- i) remote terminal units (RTUs) and remote I/O;
- j) telemetry and communications equipment;
- k) SCADA and process-control interfaces;
- l) instrumentation and field devices;
- m) automatic pump and process-control systems;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- n) reservoir, borehole, pump-station, water-treatment and wastewater-treatment monitoring and control systems;
- o) electrical energy and equipment-monitoring devices; and
- p) associated system configuration, programming, integration and commissioning.

Detailed Task Orders may include maintenance and repair of existing installations, extension of existing systems, replacement of obsolete or failed equipment, upgrading of installations or new installations falling within the scope of this Lot.

C3.6.2 Existing Systems and General Integration Philosophy

The Employer operates established telemetry, remote-monitoring, automation and process-control infrastructure across its municipal installations.

A substantial portion of the existing telemetry and monitoring infrastructure comprises systems supplied and/or supported by **Spectrum Communications and Hydrometrix**.

The intention of this Framework is principally to **maintain, support, restore and progressively extend the existing installed systems**, rather than to undertake wholesale replacement thereof.

Accordingly, where work interfaces with an existing system, the Service Provider shall:

- a) establish the existing system configuration and interface requirements before undertaking material modifications;
- b) maintain compatibility with the applicable existing system;
- c) preserve existing operational functionality;
- d) avoid unnecessary replacement of serviceable infrastructure;
- e) ensure that additions can be properly integrated into the existing architecture;
- f) coordinate with the Employer and, where necessary, the applicable existing system supplier, OEM or specialist; and
- g) ensure that modifications are properly tested, documented and handed over.

No material alteration to an existing system architecture, communications arrangement, control philosophy or established platform shall be undertaken without the Employer's approval.

C3.6.3 Coordination with Existing System Suppliers and Specialists

Where specialist knowledge, proprietary access, configuration information or system integration support is required, the Service Provider shall coordinate its activities with the Employer and the applicable existing supplier, OEM, authorised representative or specialist.

Such coordination may include:

- a) confirming interface requirements;
- b) obtaining configuration or communications information;
- c) defining responsibilities between parties;
- d) programming and configuration;
- e) integration of new equipment;
- f) communications testing;
- g) SCADA integration;
- h) system commissioning; and
- i) fault diagnosis.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

The Service Provider shall not make unauthorised changes that compromise the operation, compatibility, reliability, supportability or integrity of an existing system.

Commercial treatment of approved external specialist involvement shall be in accordance with C2.

C3.6.4 Motor Control Centres and Electrical Panels

Work on MCCs and electrical/control panels may include:

- a) inspection and fault diagnosis;
- b) cleaning and preventative maintenance;
- c) replacement of defective components;
- d) repair or replacement of starters;
- e) contactors, overloads, relays and protection devices;
- f) control transformers and power supplies;
- g) busbars and internal connections;
- h) terminals and terminations;
- i) control wiring;
- j) indication and control devices;
- k) panel ventilation and heating;
- l) modifications and extensions;
- m) circuit identification and labelling;
- n) testing; and
- o) commissioning.

Before material alteration of an existing panel, the Service Provider shall establish the existing circuit arrangement, protection requirements and control philosophy.

Modifications shall be executed neatly and shall not materially reduce the original panel's safety, segregation, enclosure protection, maintainability or electrical rating.

Unused wiring resulting from an approved modification shall be removed where reasonably practicable or otherwise safely terminated, identified and documented.

C3.6.5 Motor Starters and Control Equipment

Motor-control equipment shall be suitable for the motor rating, starting duty, operating conditions and required control philosophy.

Replacement or modified starters shall maintain appropriate:

- a) short-circuit protection;
- b) overload protection;
- c) phase-loss and phase-failure protection where applicable;
- d) under-voltage protection where applicable;
- e) control-circuit protection;
- f) interlocking;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- g) emergency-stop functionality;
- h) local/remote selection where required; and
- i) automatic/manual operating functionality.

Protection settings shall be appropriate to the equipment and shall not be altered without technical justification.

Final settings shall be recorded where settings are adjustable.

C3.6.6 Variable Speed Drives

VSDs shall be selected and configured for the motor, load, supply conditions, control method and operating environment.

Work may include:

- a) fault diagnosis;
- b) replacement;
- c) configuration and parameterisation;
- d) input/output configuration;
- e) communications integration;
- f) control-loop integration;
- g) protection settings;
- h) speed limits;
- i) ramp settings;
- j) local/remote control;
- k) reinstatement of existing process-control functions; and
- l) testing and commissioning.

Before replacing an existing VSD, the Service Provider shall, where reasonably practicable, record or obtain the existing parameters and configuration.

Replacement VSDs shall be compatible with the applicable motor, control system, communications requirements and process duty.

Parameter files or configuration records shall be provided to the Employer as part of close-out where the equipment permits this.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.6.7 Soft Starters

Soft starters shall be selected and configured for the connected motor, starting duty, supply conditions and driven equipment.

Settings shall be established to provide satisfactory starting without unnecessary mechanical or electrical stress.

Where a soft starter is replaced or reconfigured, relevant settings shall be recorded and provided as part of the Task Order close-out documentation.

C3.6.8 PLCs, RTUs and Programmable Control Equipment

Work on PLCs, RTUs and programmable control equipment may include:

- a) fault diagnosis;
- b) replacement of failed modules;
- c) replacement or extension of I/O;
- d) configuration;
- e) programming modifications;
- f) communications configuration;
- g) integration of new field equipment;
- h) control-logic modifications;
- i) testing; and
- j) commissioning.

Before modifying an existing program or configuration, the Service Provider shall obtain or create a backup of the existing configuration where technically possible.

No control-logic modification shall be undertaken without approval of the intended functional change.

The Service Provider shall preserve existing interlocks, alarms, permissives, protection functions and operating sequences unless their modification forms part of the authorised work.

Following an authorised modification, the current program/configuration and sufficient information to identify the revision shall be provided to the Employer.

C3.6.9 Telemetry and Communications Systems

Telemetry and communications work may include:

- a) RTUs;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- b) radios;
- c) modems and communications devices;
- d) antennas and feeders;
- e) communications power supplies;
- f) remote I/O;
- g) network interfaces;
- h) signal interfaces;
- i) reservoir and remote-level monitoring equipment;
- j) communications configuration;
- k) fault diagnosis; and
- l) approved extension of existing telemetry networks.

New telemetry installations or extensions shall, unless otherwise instructed, be compatible with the applicable existing municipal telemetry architecture.

The Service Provider shall verify communications performance following repair, modification or installation.

Where an existing communications path, frequency arrangement, network configuration or proprietary interface is affected, the Service Provider shall coordinate the work with the Employer and relevant system supplier or specialist as required.

C3.6.10 SCADA and Process-Control Interfaces

Work affecting SCADA or process-control interfaces may include:

- a) point additions or modifications;
- b) alarm configuration;
- c) status and analogue indications;
- d) command interfaces;
- e) trends and historical data interfaces;
- f) communications interfaces;
- g) screen or mimic modifications;
- h) integration of new equipment; and

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

i) testing and commissioning.

Changes shall maintain consistency with the Employer's existing operating philosophy and established system conventions as far as reasonably practicable.

New or modified points shall be tested from the field device through to the applicable operator interface where the scope permits.

C3.6.11 Instrumentation

Instrumentation may include:

- a) level switches and probes;
- b) level transmitters;
- c) ultrasonic level instruments;
- d) pressure switches and transmitters;
- e) flow switches, flow meters and transmitters;
- f) process switches and sensors;
- g) signal isolators and converters;
- h) associated power supplies;
- i) analogue and digital signal interfaces; and
- j) other process instruments forming part of the Employer's electromechanical systems.

Instrumentation shall be suitable for the process medium, measurement range, environmental conditions and required control or monitoring function.

Replacement instruments shall be compatible with the existing signal and control system unless an approved modification provides otherwise.

Where applicable, instruments shall be configured, calibrated and functionally tested before acceptance.

C3.6.12 Borehole Electrical, Instrumentation and Control Systems

Lot 2 includes the electrical, protection, instrumentation, automation and telemetry systems associated with municipal borehole pumping installations.

The scope may include:

- a) electrical supply and control panels;
- b) motor protection;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- c) dry-run protection;
- d) VSDs and soft starters;
- e) submersible pump cables, joints and terminations;
- f) level probes and level instrumentation;
- g) pressure instrumentation;
- h) flow measurement;
- i) PLCs and RTUs;
- j) telemetry and communications equipment;
- k) SCADA integration; and
- l) associated configuration, testing and commissioning.

Electrical and control modifications shall be coordinated with any pump or mechanical work undertaken under Lot 1.

C3.6.13 Field Cabling and Wiring

New or replacement cabling shall be suitable for:

- a) voltage and current requirements;
- b) signal type;
- c) installation method;
- d) environmental exposure;
- e) mechanical conditions; and
- f) electromagnetic compatibility requirements where relevant.

Power, control, instrumentation and communications wiring shall be appropriately segregated.

Cable entries shall maintain the required enclosure protection.

Cables and conductors shall be properly terminated and identified at relevant termination points.

Temporary wiring shall not remain as part of the permanent installation unless specifically approved and made compliant with the permanent-installation requirements.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.6.14 Control Philosophy and Interlocks

Existing control philosophies, operating sequences, interlocks, permissives and protection functions shall be preserved unless modification is specifically authorised.

Where a Task Order requires modification of a control philosophy, the Service Provider shall establish the intended operating sequence with the Employer before implementation.

Changes affecting automatic operation shall be functionally tested under appropriate operating or simulated conditions before final acceptance.

Safety and equipment-protection interlocks shall not be bypassed or disabled except temporarily for authorised testing under controlled conditions.

Any temporary bypass shall be removed before normal operation resumes.

C3.6.15 Backups, Passwords and Configuration Information

For programmable or configurable equipment affected by the work, the Service Provider shall, where technically possible and applicable:

- a) obtain or create a backup before material modification;
- b) preserve the original configuration;
- c) retain a copy of the final commissioned configuration;
- d) identify the equipment and revision to which the backup relates; and
- e) provide the final backup/configuration to the Employer.

Passwords, configuration files and access information created specifically for municipal equipment under the Contract shall be provided to the Employer and shall not be withheld as a means of restricting future access to municipal assets.

Proprietary third-party software, licences and intellectual property shall remain subject to applicable licence and contractual conditions.

C3.6.16 Testing and Commissioning

Following maintenance, repair, modification or installation, the affected equipment and system shall be tested to the extent appropriate to the work undertaken.

Testing may include:

- a) visual inspection;
- b) electrical integrity testing;
- c) protection-function testing;
- d) input/output testing;
- e) instrument calibration or verification;
- f) local control;
- g) remote control;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- h) automatic operation;
- i) alarms;
- j) interlocks and permissives;
- k) communications;
- l) telemetry;
- m) SCADA indication and control; and
- n) operation of the associated plant.

Where work affects an integrated control system, testing shall extend beyond the individual component sufficiently to demonstrate that the affected interface operates correctly.

Testing and commissioning shall additionally comply with **C3.9**

C3.7 LOT 3 – EMERGENCY GENERATORS AND ASSOCIATED CONTROL SYSTEMS

C3.7.1 Scope

Lot 3 covers the inspection, servicing, fault diagnosis, maintenance, repair, refurbishment, supply, installation, testing and commissioning of emergency standby generator sets and their associated equipment and control systems.

The scope may include:

- a) diesel engines and associated systems;
- b) alternators;
- c) starting systems and batteries;
- d) cooling systems;
- e) fuel systems;
- f) lubrication systems;
- g) exhaust systems;
- h) generator control panels;
- i) automatic mains failure (AMF) controls;
- j) automatic transfer switches (ATS);
- k) changeover equipment;
- l) protection, monitoring and alarm systems;
- m) battery chargers and auxiliary supplies;
- n) associated electrical cabling and terminations;
- o) acoustic enclosures and associated ventilation equipment;
- p) fuel tanks and directly associated generator fuel equipment; and
- q) other equipment forming an integral part of the emergency generator installation.

The Service Provider shall maintain and repair generator installations so that they remain safe, reliable and capable of performing their intended standby duty.

C3.7.2 General Requirements

Before undertaking maintenance or repair, the Service Provider shall, where applicable:

- a) identify the generator set and record relevant nameplate information;
- b) establish the available operating and maintenance history;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- c) inspect the general condition of the installation;
- d) identify visible leaks, deterioration, damage or abnormal conditions;
- e) review available alarms or fault indications; and
- f) undertake appropriate preliminary operational checks.

Any material defect identified outside the authorised scope shall be recorded and reported to the Employer in accordance with C3.3.

No major repair, component replacement or modification outside the authorised scope shall proceed without approval.

C3.7.3 Routine Service

Routine servicing shall be undertaken in accordance with the manufacturer's recommendations and the applicable Task Order.

As applicable to the particular generator set, routine servicing shall include inspection and/or servicing of:

- a) engine oil and oil level;
- b) engine-oil filter;
- c) fuel filters and fuel system;
- d) air filter;
- e) coolant level and condition;
- f) radiator and cooling system;
- g) hoses, clamps and connections;
- h) drive belts;
- i) engine and alternator mountings;
- j) battery condition and terminals;
- k) battery charger;
- l) starting system;
- m) exhaust system;
- n) fuel leaks, oil leaks and coolant leaks;
- o) control panel and indications;
- p) alarms and shutdowns;
- q) generator output;
- r) AMF/ATS functionality, where applicable; and
- s) general condition and cleanliness of the generator installation.

Consumables and filters shall be appropriate to the applicable generator and manufacturer's requirements.

Service records shall identify the generator, operating hours where available, work undertaken, consumables replaced, defects identified and relevant test results.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.7.4 Major Service

Where a major service is instructed, the work shall include the applicable routine-service requirements together with the additional maintenance activities required by the manufacturer's recommended service interval or the applicable Task Order.

Depending on the generator type, operating hours and maintenance requirements, this may include:

- a) replacement of additional filters and service components;
- b) coolant replacement;
- c) drive-belt replacement or adjustment;
- d) detailed cooling-system inspection;
- e) detailed fuel-system inspection;
- f) valve-clearance inspection or adjustment where required;
- g) inspection of engine ancillary equipment;
- h) detailed starting-system inspection;
- i) alternator inspection;
- j) electrical connection inspection;
- k) control and protection checks;
- l) detailed AMF/ATS testing; and
- m) other scheduled maintenance prescribed for the applicable service interval.

A major service shall not automatically include engine overhaul, alternator overhaul or replacement of major defective components unless specifically authorised.

C3.7.5 Fault-Finding and Condition Assessment

Fault-finding shall identify, as far as reasonably practicable, the cause of the reported failure or abnormal operation.

The assessment may include:

- a) visual inspection;
- b) review of controller alarms and event information;
- c) starting-system tests;
- d) battery and charging-system tests;
- e) engine-system checks;
- f) fuel-system checks;
- g) cooling-system checks;
- h) alternator tests;
- i) output voltage and frequency checks;
- j) protection and control checks;
- k) AMF/ATS checks;
- l) wiring and connection checks; and
- m) operational testing.

Where corrective work is required following diagnosis, the Service Provider shall report the findings and proposed corrective action to the Employer before proceeding beyond the authorised scope.

Subsequent corrective repair work shall be valued in accordance with the applicable C2 pricing mechanism.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.7.6 Diesel Engines

Engine maintenance and repair shall be undertaken in accordance with the applicable manufacturer's requirements and generally accepted diesel-engine maintenance practices.

The scope may include:

- a) lubrication system;
- b) fuel system;
- c) air-intake system;
- d) cooling system;
- e) starting system;
- f) engine sensors and switches;
- g) belts and ancillary drives;
- h) mountings;
- i) gaskets and seals;
- j) turbocharger, where applicable; and
- k) other engine components forming part of the generator set.

Any proposed major engine overhaul shall be supported by sufficient diagnosis and technical justification before authorisation.

C3.7.7 Alternators

Alternator work may include inspection, testing, cleaning, repair and refurbishment of:

- a) stator and rotor assemblies;
- b) bearings;
- c) excitation systems;
- d) automatic voltage regulators;
- e) terminal connections;
- f) winding insulation;
- g) temperature-sensing equipment;
- h) anti-condensation heaters, where fitted; and
- i) associated components.

Following repair affecting the alternator, appropriate electrical and operational tests shall be undertaken before return to service.

Repairs shall maintain the required voltage, frequency, rating, insulation performance and suitability for the generator duty.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.7.8 Starting Batteries and Charging Systems

Starting batteries shall be suitable for the applicable generator starting duty and environmental conditions.

Inspection and maintenance shall include, where applicable:

- a) battery condition;
- b) terminal condition and tightness;
- c) corrosion;
- d) electrolyte condition where applicable;
- e) open-circuit and charging voltage;
- f) battery charger operation;
- g) starting performance; and
- h) associated cables and connections.

Replacement batteries shall be of suitable capacity and type for the applicable generator set.

C3.7.9 Fuel Systems

Fuel-system work may include:

- a) day tanks and integral fuel tanks;
- b) fuel lines;
- c) filters and water separators;
- d) pumps;
- e) valves;
- f) level indication;
- g) leak detection where installed; and
- h) associated generator fuel-system components.

Fuel leaks shall be rectified before the installation is returned to normal service.

Where contamination or degraded fuel is suspected, the Service Provider shall report the condition and recommend appropriate corrective action.

Bulk fuel supply itself shall not form part of a service unless expressly instructed.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.7.10 Cooling Systems

Cooling systems shall be inspected for adequate coolant condition, circulation, leakage and heat rejection.

The scope may include:

- a) radiators;
- b) coolant;
- c) hoses;
- d) clamps;
- e) thermostats;
- f) water pumps;
- g) fans and fan drives;
- h) expansion tanks; and
- i) associated temperature sensors and switches.

Radiators and ventilation paths shall be maintained sufficiently clean and unobstructed to permit proper cooling.

C3.7.11 Exhaust and Ventilation Systems

Exhaust systems shall be maintained in a safe and gas-tight condition and shall be adequately supported.

Inspection shall include, where applicable:

- a) exhaust piping;
- b) flexible sections;
- c) silencers;
- d) supports;
- e) joints;
- f) heat protection; and
- g) discharge arrangements.

Generator-room or enclosure ventilation shall provide adequate airflow for combustion and cooling.

Material defects affecting safe operation shall be reported and rectified within the authorised scope.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.7.12 Generator Control Panels

Generator control panels may include engine controls, generator protection, monitoring, alarms, starting controls, battery charging interfaces and communications equipment.

Repairs or modifications shall preserve the intended protection and operating functionality.

Where configurable controllers are affected, existing settings shall be recorded or backed up where technically possible before material changes are made.

Final settings or configuration information affected by the work shall be recorded as part of close-out.

C3.7.13 AMF, ATS and Changeover Systems

AMF, ATS and changeover equipment forming part of an emergency generator installation falls within Lot 3.

The system shall provide the intended transfer between the normal and standby supplies without compromising electrical safety, interlocking or equipment protection.

Work may include:

- a) mains-failure sensing;
- b) generator-start signals;
- c) transfer controls;
- d) electrically or mechanically operated changeover equipment;
- e) contactors or circuit breakers forming part of the transfer system;
- f) electrical and mechanical interlocking;
- g) timers and transfer delays;
- h) return-to-mains sequence;
- i) generator cool-down sequence;
- j) manual/automatic selection;
- k) status indications and alarms; and
- l) associated control wiring.

Under no circumstances shall modifications permit unintended parallel operation between the standby generator and municipal or utility supply unless the installation has been specifically designed and authorised for such operation.

C3.7.14 Protection, Monitoring and Alarms

Generator protection and monitoring shall be appropriate to the particular generator installation.

Functions may include, where fitted:

- a) low oil pressure;
- b) high coolant temperature;
- c) overspeed;
- d) failed start;
- e) over-voltage and under-voltage;
- f) over-frequency and under-frequency;
- g) overcurrent;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- h) earth fault;
- i) battery/charger failure;
- j) low fuel;
- k) emergency stop; and
- l) other OEM protection functions.

Existing protection shall not be disabled or bypassed as a permanent means of restoring operation.

Temporary bypassing required for authorised testing shall be controlled and removed before the equipment is returned to normal service.

C3.7.15 Generator Installation and Replacement

Where a generator set or major associated equipment is replaced or newly installed, the installation shall be suitable for the required duty and site conditions.

The Service Provider shall consider, as applicable:

- a) required electrical capacity;
- b) connected and starting loads;
- c) voltage and frequency;
- d) phase arrangement;
- e) earthing requirements;
- f) fault level and protection;
- g) generator foundation and mounting;
- h) vibration isolation;
- i) ventilation;
- j) exhaust routing;
- k) fuel storage and supply;
- l) access for maintenance;
- m) AMF/ATS integration;
- n) control and monitoring interfaces; and
- o) environmental conditions.

Project-specific design requirements shall be established through the applicable Task Order or secondary competition where required.

C3.7.16 Testing and Commissioning

Following servicing, repair or modification, the generator shall be functionally tested to an extent appropriate to the work undertaken.

Testing may include:

- a) manual starting;
- b) automatic starting;
- c) oil-pressure verification;
- d) coolant-temperature monitoring;
- e) battery charging;
- f) output voltage;
- g) frequency;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- h) phase sequence;
- i) alarms and shutdowns;
- j) emergency stop;
- k) AMF operation;
- l) ATS/changeover operation;
- m) return-to-mains operation;
- n) cool-down sequence; and
- o) operation under load where required.

Where the Task Order requires a **load test**, the generator shall be tested using the connected site load or an appropriate load bank, as instructed or approved by the Employer.

The test shall be of sufficient duration and loading to demonstrate satisfactory operation for the purpose of the particular intervention.

Relevant operating parameters and defects identified during testing shall be recorded.

Testing and commissioning shall additionally comply with **C3.9**.

C3.7.17 Return to Standby Service

Before a generator installation is returned to normal standby service, the Service Provider shall confirm, as applicable, that:

- a) tools and temporary equipment have been removed;
- b) guards and covers have been reinstated;
- c) fluid levels are correct;
- d) valves and switches are in their required operating positions;
- e) batteries and chargers are operational;
- f) the generator controller is in the required operating mode;
- g) AMF/ATS equipment is returned to automatic operation where applicable;
- h) emergency-stop devices are functional;
- i) material alarms or defects have been addressed or reported; and
- j) the installation is available for its intended standby function.

The Employer's authorised representative shall be informed of any outstanding condition that may affect generator availability or reliability.

C3.8 QUALITY CONTROL AND WORKMANSHIP STANDARDS

C3.8.1 General

The Service Provider shall be responsible for the quality of all work, materials, equipment and services provided under each Task Order.

All work shall be executed in a professional and workmanlike manner by competent personnel and shall comply with the applicable requirements of the Contract, Part C3, the Task Order, approved technical information and applicable manufacturer and statutory requirements.

The Service Provider's quality-control arrangements shall be appropriate to the nature, complexity and risk of the work undertaken.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Inspection or acceptance by the Employer shall not relieve the Service Provider of responsibility for the quality, correctness or performance of its work.

C3.8.2 Quality Control

The Service Provider shall implement appropriate quality-control measures throughout the execution of each Task Order.

Depending on the nature of the work, these shall include:

- a) verification of equipment and component identification before work commences;
- b) inspection and recording of existing condition;
- c) verification of materials and replacement components before installation;
- d) dimensional, electrical or mechanical checks during repair or assembly;
- e) verification of settings, configuration and adjustments;
- f) inspection of completed workmanship;
- g) testing in accordance with C3.9; and
- h) retention of records necessary to demonstrate compliance.

Quality control shall be undertaken progressively and shall not be deferred solely to final inspection.

C3.8.3 Inspection and Test Plans

For routine or low-risk work, the Service Provider's normal quality-control records and the requirements of the applicable Task Order shall generally be sufficient.

For major refurbishment, new installation, significant modification, EPC/design-and-build work or other work identified by the Employer, the Service Provider may be required to submit an **Inspection and Test Plan (ITP)** before commencing the relevant work.

The ITP shall identify, as applicable:

- a) the work or component to be inspected or tested;
- b) applicable acceptance criteria;
- c) inspection or test method;
- d) responsibility for inspection or testing;
- e) records to be produced; and
- f) hold, witness or review points required by the Employer.

No separate payment shall be due for normal quality-control documentation required for proper execution of the work unless expressly provided in the Task Order.

C3.8.4 Hold and Witness Points

The Employer may identify activities that shall not proceed beyond a specified stage without inspection, witnessing or approval.

Typical hold or witness points may include:

- a) inspection following dismantling and before repair;
- b) approval of major components before replacement;
- c) inspection before closing or sealing equipment;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- d) motor winding inspection before impregnation or final assembly, where required;
- e) pump or rotating-equipment inspection before final assembly;
- f) panel inspection before energisation;
- g) review of PLC, RTU or control-system modifications before implementation;
- h) factory or workshop testing;
- i) site acceptance testing; and
- j) final commissioning.

Where a hold point has been expressly established, the Service Provider shall not proceed beyond it without the required release.

C3.8.5 Materials and Components

Materials, equipment and components incorporated into the Works shall comply with C3.4 and the applicable Lot-specific requirements.

The Service Provider shall verify that items supplied are of the correct:

- a) manufacturer and type where specified;
- b) rating and capacity;
- c) dimensions and configuration;
- d) material;
- e) duty and application;
- f) environmental rating; and
- g) compatibility with the existing installation.

Where requested, relevant certificates, datasheets, delivery documentation or other evidence of conformity shall be provided to the Employer.

C3.8.6 Workmanship

Completed work shall:

- a) be neat, secure and mechanically sound;
- b) be suitable for the intended operating environment;
- c) maintain required clearances, alignment and accessibility;
- d) maintain applicable enclosure and ingress protection;
- e) be properly terminated, fastened, sealed and supported;
- f) retain or reinstate required guards and safety devices;
- g) be appropriately identified and labelled;
- h) be free from unnecessary temporary arrangements; and
- i) not materially impair operation or maintenance of adjacent plant.

Makeshift repairs shall not be accepted as permanent work unless the Employer has expressly approved the arrangement as a permanent solution.

C3.8.7 Workshop Repairs and Refurbishment

Equipment removed to a workshop shall remain identifiable throughout the repair process.

The Service Provider shall maintain sufficient control to ensure that:

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- a) municipal equipment and components are not mixed with those belonging to other clients;
- b) dismantled components remain traceable to the applicable equipment;
- c) condition and measurements relevant to the repair are recorded;
- d) approved replacement components are used;
- e) equipment is protected from contamination, corrosion and damage; and
- f) required inspections and tests are completed before release.

The Employer may inspect municipal equipment at the Service Provider's or approved specialist's premises upon reasonable notice.

C3.8.8 Non-Conforming Work

Where work, materials, equipment or components do not comply with the Contract requirements, the Service Provider shall promptly:

- a) identify the non-conformity;
- b) prevent unintended use or acceptance where necessary;
- c) notify the Employer where the non-conformity is material;
- d) determine and implement appropriate corrective action; and
- e) re-inspect or retest the affected work following correction.

Non-conforming work shall be repaired, replaced or otherwise corrected at the Service Provider's cost where the non-conformity is attributable to the Service Provider.

Acceptance of a non-conforming item by concession shall require the Employer's written approval.

C3.8.9 Defective Work and Repeat Failures

Where equipment or work fails as a consequence of defective workmanship, incorrect installation, unsuitable materials supplied by the Service Provider or failure to comply with the approved scope, the Service Provider shall rectify the defect in accordance with the Contract.

Where a repeat failure occurs, the Service Provider may be required to undertake a root-cause assessment rather than merely repeat the previous repair.

The assessment shall identify, where applicable:

- a) the failure mode;
- b) probable root cause;
- c) whether the previous repair contributed to the failure;
- d) any underlying installation or operating condition contributing to the failure; and
- e) recommended corrective action.

This clause shall not make the Service Provider responsible for failures arising solely from circumstances outside its contractual responsibility.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.8.10 Employer Inspection

The Employer may inspect work at the Site, workshop, specialist facility or other location where work under a Task Order is being undertaken.

The Service Provider shall provide reasonable access to the affected municipal equipment and relevant quality records.

The Employer may require work to be exposed or made accessible for inspection where there is reasonable cause to question compliance.

Where such inspection establishes defective or non-compliant work attributable to the Service Provider, the associated corrective work shall be at the Service Provider's cost.

C3.8.11 Quality Records

Quality records shall be proportionate to the nature of the work and may include:

- a) inspection records;
- b) condition-assessment records;
- c) measurements and tolerances;
- d) test results;
- e) calibration records;
- f) photographs;
- g) component or material certificates;
- h) equipment settings and configuration records;
- i) ITP records and releases;
- j) non-conformance and corrective-action records; and
- k) workshop or factory test reports.

Required records shall form part of the Task Order close-out documentation in accordance with **C3.13**.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.9.5 Lot 1 – Pumps, Motors and Mechanical Equipment

Testing following Lot 1 work shall be appropriate to the equipment concerned.

C3.9.5.1 Pumps

Pump testing may include:

- a) correct rotation;
- b) free rotation before starting;
- c) leakage and sealing;
- d) bearing condition;
- e) vibration and abnormal noise;
- f) motor current;
- g) suction and discharge conditions;
- h) pressure or head;
- i) flow, where measurement is available or required;
- j) operating temperature; and
- k) satisfactory operation at the required duty.

Where a pump has undergone major refurbishment and suitable facilities are available or required by the Task Order, workshop performance testing may be required before delivery.

C3.9.5.2 Electric Motors

Motor testing following repair or rewinding shall include, as applicable:

- a) visual and mechanical inspection;
- b) insulation-resistance testing;
- c) winding resistance;
- d) phase balance;
- e) continuity;
- f) earth continuity where applicable;
- g) no-load current;
- h) running direction;
- i) bearing condition;
- j) vibration and abnormal noise; and
- k) other tests required by the applicable standard or manufacturer.

Where a motor has been rewound, the Service Provider shall provide a test report identifying the motor and recording the applicable post-repair test results.

C3.9.5.3 Mechanical Equipment

Aerators, mixers, blowers, gearboxes, screens, conveyors and other mechanical equipment shall be tested sufficiently to verify:

- a) correct assembly;
- b) alignment;

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- c) lubrication;
- d) direction of rotation;
- e) guarding;
- f) abnormal noise or vibration;
- g) operating temperature where relevant; and
- h) satisfactory operation of the affected equipment.

C3.9.6 Lot 2 – MCCs, Electrical Panels, Telemetry and Control Systems

Testing following Lot 2 work shall verify both the affected component and, where applicable, its interface with the wider control system.

C3.9.6.1 Electrical Panels and MCCs

Testing may include:

- a) visual inspection;
- b) mechanical integrity;
- c) conductor and terminal tightness;
- d) protective conductor continuity;
- e) insulation resistance;
- f) phase sequence;
- g) control-circuit operation;
- h) protection settings and operation;
- i) local and remote controls;
- j) indications and alarms;
- k) interlocks and permissives; and
- l) operation of the connected equipment.

C3.9.6.2 VSDs, Soft Starters and Motor Control

Testing shall include, as applicable:

- a) verification of configuration and settings;
- b) motor data;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- c) starting and stopping;
- d) speed control;
- e) current and loading;
- f) ramping;
- g) protection functions;
- h) local/remote selection;
- i) external control signals;
- j) alarms; and
- k) satisfactory operation of the driven equipment.

C3.9.6.3 PLCs and RTUs

Following programming, configuration or I/O work, testing shall include, as applicable:

- a) verification of the final program/configuration;
- b) input testing;
- c) output testing;
- d) control logic;
- e) alarms;
- f) interlocks and permissives;
- g) automatic sequences;
- h) communications; and
- i) operation of affected field equipment.

C3.9.6.4 Instrumentation

Instrumentation shall be calibrated or verified to the extent appropriate to the work undertaken.

Testing may include:

- a) zero and span;
- b) measurement range;
- c) signal output;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- d) scaling;
- e) alarm and trip points;
- f) local indication;
- g) PLC/RTU indication; and
- h) SCADA indication where applicable.

C3.9.6.5 Telemetry and SCADA

Where telemetry or SCADA is affected, testing shall extend from the applicable field device or RTU through the communications system to the relevant receiving or operator interface, where reasonably practicable.

Testing may include:

- a) communications availability;
- b) analogue values;
- c) digital statuses;
- d) alarms;
- e) remote commands;
- f) trends or data recording where applicable; and
- g) restoration of existing functionality.

Where work interfaces with the Employer's existing telemetry or process-control platforms, integration testing shall be coordinated in accordance with C3.6.

C3.9.7 Lot 3 – Emergency Generators and Associated Control Systems

Testing following generator servicing, repair or modification shall be appropriate to the intervention and may include:

- a) manual starting;
- b) automatic starting;
- c) starting batteries and charging system;
- d) oil pressure;
- e) coolant temperature;

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HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- f) output voltage;
- g) frequency;
- h) phase sequence;
- i) alarms and shutdowns;
- j) emergency stop;
- k) AMF operation;
- l) ATS/changeover operation;
- m) return-to-mains sequence;
- n) generator cool-down sequence; and
- o) operation under load where required.

A load-bank test shall be undertaken where expressly required by the Task Order, following major work where necessary to demonstrate performance, or where satisfactory testing using the connected load cannot reasonably demonstrate the required generator performance.

C3.9.8 Site Acceptance and Functional Testing

Following installation or reinstallation, the Service Provider shall undertake sufficient site testing to demonstrate that the equipment operates correctly within the actual installation.

Site testing shall verify, as applicable:

- a) correct installation;
- b) correct direction of rotation;
- c) mechanical and electrical connections;
- d) protection;
- e) controls;
- f) interlocks;
- g) instrumentation;
- h) communications;
- i) automatic operation;
- j) process response; and
- k) satisfactory interaction with associated plant.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Workshop testing shall not replace site acceptance testing where the performance of the equipment depends materially on its installed condition or interfaces.

C3.9.9 Commissioning

New installations, major replacements, substantial refurbishments and material modifications shall be commissioned before final acceptance.

Commissioning shall be planned and coordinated with the Employer and shall include, where applicable:

- a) pre-commissioning inspections;
- b) verification that installation work is complete;
- c) confirmation of settings and configurations;
- d) controlled energisation or start-up;
- e) functional testing;
- f) safety and protection checks;
- g) testing under representative operating conditions;
- h) correction of defects identified during commissioning; and
- i) demonstration of satisfactory operation.

The Employer may require commissioning to be witnessed by its authorised representative.

C3.9.10 Test Equipment and Calibration

Test instruments used for measurements forming part of acceptance or certification shall comply with C3.4.7.

Where calibration is applicable, current calibration evidence shall be available for inspection by the Employer.

The Employer may reject test results where the equipment used is unsuitable, defective or materially outside its required calibration status.

C3.9.11 Test Results and Records

Test results shall be recorded sufficiently to identify:

- a) the Task Order;
- b) site and equipment;
- c) equipment identification;

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HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- d) date of testing;
- e) tests performed;
- f) measured results where applicable;
- g) acceptance criteria where relevant;
- h) defects or deviations identified;
- i) corrective action undertaken;
- j) final status; and
- k) person responsible for the test.

Formal test certificates or reports shall be provided where required by legislation, the applicable standard, this Scope of Work or the Task Order.

C3.9.12 Failed Tests and Defects

Where equipment or work fails an applicable test or does not satisfy the required acceptance criteria, it shall not be regarded as complete.

The Service Provider shall identify and rectify defects attributable to its work and repeat the applicable inspection or test.

Where the failure indicates that additional work outside the authorised scope is required, the Service Provider shall report the finding and obtain further authorisation in accordance with C3.3 before proceeding.

C3.9.13 Return to Service

Equipment shall only be returned to normal operation when:

- a) the authorised work has been completed to the extent required for safe operation;
- b) applicable inspections and tests have been satisfactorily completed;
- c) temporary test connections and unauthorised bypasses have been removed;
- d) guards, covers and protective devices have been reinstated;
- e) required settings and operating modes have been restored;
- f) the work area has been made safe; and
- g) the Employer's applicable operational requirements for return to service have been satisfied.

HESSEQUA MUNICIPALITY

**HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE
MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND
COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL
SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS**

Any outstanding defect, limitation or temporary condition that may affect operation shall be clearly communicated to the Employer before handover.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.10 OCCUPATIONAL HEALTH AND SAFETY REQUIREMENTS

C3.10.1 General and Statutory Compliance

The Service Provider shall execute all work in a manner that protects its employees, municipal personnel, other contractors, members of the public, property, plant and the environment from hazards arising from the Works.

The Service Provider shall comply with the **Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), as amended**, and all regulations promulgated thereunder that are applicable to the work undertaken.

Without limiting the generality of the above, the following legislation and regulations shall apply where relevant to the nature, location and scope of a Task Order:

- a) Construction Regulations, 2014;
- b) Electrical Installation Regulations, 2009, as amended;
- c) Electrical Machinery Regulations, 2011;
- d) General Machinery Regulations, 1988, as amended;
- e) Driven Machinery Regulations, 2015;
- f) General Safety Regulations, 1986, as amended;
- g) Hazardous Chemical Agents Regulations, 2021;
- h) Hazardous Biological Agents Regulations, 2022;
- i) Pressure Equipment Regulations, 2009;
- j) Noise-Induced Hearing Loss Regulations, 2003;
- k) Ergonomics Regulations, 2019;
- l) Environmental Regulations for Workplaces, 1987;
- m) applicable SANS standards incorporated by legislation or otherwise applicable to the work; and
- n) any other applicable South African legislation, regulation, statutory requirement, municipal safety procedure or permit requirement relevant to the Task Order.

The Service Provider shall determine the statutory requirements applicable to the particular work and shall provide all legally required competent persons, appointments, registrations, permits, procedures, inspections, records and certificates.

Compliance with this section shall not relieve the Service Provider of any statutory duty imposed upon it as an employer, contractor, designer, supplier, manufacturer, installer or other duty holder.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.10.2 Application of the Construction Regulations

The Framework comprises work of varying nature and complexity. The application of the **Construction Regulations, 2014** shall therefore be determined by the nature and scope of each Task Order.

Where a Task Order constitutes **construction work** as contemplated in the Construction Regulations, the applicable provisions of those Regulations shall apply.

The Service Provider shall comply with the applicable requirements relating to, amongst others:

- a) appointments and competency;
- b) construction health and safety plans;
- c) risk assessments and method statements;
- d) fall protection;
- e) structures and temporary works, where applicable;
- f) excavation work, where applicable;
- g) construction vehicles and mobile plant;
- h) electrical installations and machinery;
- i) notification or permitting requirements, where legally applicable; and
- j) health and safety files and records.

Routine servicing, fault-finding or maintenance shall not be subjected to construction-specific administration merely by virtue of being undertaken under this Framework where the Construction Regulations are not legally applicable to the particular work.

C3.10.3 Site-Specific Risk Assessment and Safe Work Planning

Before commencing work, the Service Provider shall identify and assess the hazards associated with the particular Task Order, Site, equipment and proposed method of work.

The risk assessment shall be proportionate to the nature and risk of the work and shall address, where applicable:

- a) electrical hazards;
- b) rotating and moving machinery;
- c) stored mechanical, hydraulic, pneumatic or electrical energy;
- d) automatic and remote starting;
- e) confined spaces;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- f) working at heights;
- g) lifting and rigging;
- h) excavations and open chambers;
- i) wastewater, sewage and biological hazards;
- j) hazardous chemical agents;
- k) hot work;
- l) fire and explosion;
- m) fuels and flammable substances;
- n) traffic and mobile plant;
- o) manual handling and ergonomics;
- p) noise;
- q) slips, trips and falls;
- r) remote or unattended installations; and
- s) interaction with municipal personnel, other contractors and members of the public.

Required controls shall be implemented before the affected work commences and reviewed where conditions or the scope of work materially change.

C3.10.4 Safe Work Procedures and Permit Requirements

The Service Provider shall establish and implement safe work procedures appropriate to the activities undertaken.

These shall include, where applicable:

- a) electrical work and electrical isolation;
- b) lock-out and prevention of unintended energisation;
- c) work on rotating or driven machinery;
- d) pump and motor removal and installation;
- e) lifting and rigging;
- f) confined-space entry;
- g) working at heights;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- h) hot work;
- i) handling fuels and hazardous substances;
- j) work at wastewater and sewage installations;
- k) generator operation and testing; and
- l) other hazardous activities applicable to the Task Order.

Where the Employer operates a permit-to-work, isolation, confined-space, hot-work or other site-control system, the Service Provider shall comply with that system.

C3.10.5 Isolation, Lock-Out and Stored Energy

Before work is undertaken on plant or equipment that may expose persons to hazardous energy, the affected equipment shall be isolated, locked out and made safe in accordance with the applicable requirements of the **General Machinery Regulations, Electrical Machinery Regulations, Driven Machinery Regulations**, other applicable legislation and the Employer's approved procedures.

Isolation shall address all relevant sources of hazardous energy, including:

- a) electrical supplies;
- b) mechanical energy;
- c) rotating equipment;
- d) hydraulic and pneumatic pressure;
- e) gravity and suspended loads;
- f) pressurised pipework;
- g) stored energy;
- h) automatic or remote-start signals; and
- i) process-related hazards.

The Service Provider shall verify the effectiveness of the isolation before commencing work.

No person shall remove, defeat or interfere with an isolation or lock-out applied by another authorised person except in accordance with the applicable approved procedure.

C3.10.6 Electrical Safety

Electrical work shall comply, as applicable, with the **Electrical Installation Regulations, Electrical Machinery Regulations, SANS 10142-1**, and other applicable statutory and technical requirements.

Electrical work shall only be undertaken, supervised, inspected and certified by persons having the competency, registration or authorisation legally required for the particular work.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

The Service Provider shall:

- a) regard electrical equipment as live until proven otherwise;
- b) verify isolation before commencing work;
- c) use appropriately rated and serviceable test instruments, tools and PPE;
- d) maintain suitable barriers and access control;
- e) maintain electrical clearances and protection;
- f) reinstate covers, barriers, earth connections and protective devices before energisation;
- g) ensure temporary electrical supplies and connections are safe and suitable; and
- h) comply with the Employer's applicable electrical operating and safety procedures.

Where work constitutes an addition, alteration, repair or other electrical installation work for which inspection, testing or certification is legally required, the Service Provider shall provide the required **Certificate of Compliance and/or test documentation**, as applicable.

Live electrical work shall not be undertaken unless permitted by law, technically justified, specifically authorised and executed under an approved safe work procedure.

C3.10.7 Machinery, Guards and Automatic or Remote Starting

Work on pumps, motors, aerators, mixers, blowers, screens, conveyors, generators and other machinery shall comply with the applicable **General Machinery Regulations and Driven Machinery Regulations**.

Guards, covers, interlocks, emergency stops and other machinery safety devices shall not be permanently removed, bypassed or defeated.

Particular care shall be exercised where equipment may start automatically or remotely through:

- a) PLC control;
- b) telemetry or SCADA;
- c) level or pressure control;
- d) timers;
- e) automatic process sequences;
- f) AMF/ATS systems; or
- g) other remote commands.

All sources capable of initiating equipment operation shall be identified and controlled before work commences.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Any temporary bypass or inhibited function used for authorised testing shall be recorded and removed before the equipment is returned to normal service.

C3.10.8 Confined Spaces

Work in wet wells, chambers, tanks, sumps, pits and other confined spaces shall comply with the applicable requirements of the **General Safety Regulations**, the **Hazardous Biological Agents Regulations** where applicable, and the Employer's confined-space procedures.

Where applicable, provision shall be made for:

- a) formal entry authorisation or permit;
- b) atmospheric testing before and during entry;
- c) ventilation;
- d) isolation of incoming electrical, mechanical and process hazards;
- e) competent supervision;
- f) standby personnel;
- g) communication;
- h) suitable PPE and respiratory protective equipment;
- i) safe access and egress; and
- j) appropriate rescue arrangements.

No person shall enter a wet well, tank, chamber or similar confined space merely because physical access is possible.

C3.10.9 Wastewater, Sewage and Biological Hazards

Work involving exposure or potential exposure to sewage, wastewater, sludge or other biological agents shall comply with the applicable requirements of the **Hazardous Biological Agents Regulations, 2022**.

The Service Provider shall assess the exposure risk and implement appropriate controls, including where applicable:

- a) PPE;
- b) hygiene and washing facilities;
- c) prevention of ingestion and direct contact;
- d) appropriate protection of cuts and wounds;
- e) decontamination procedures;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- f) handling and containment of contaminated equipment;
- g) cleaning of tools and equipment; and
- h) safe transport of equipment removed from contaminated installations.

Contaminated pumps, screens, pipes or other equipment shall not be transported or introduced into workshops without appropriate containment and hygiene controls.

C3.10.10 Hazardous Chemical Agents

Where work involves oils, fuels, solvents, cleaning chemicals, treatment chemicals, paints, coatings, gases or other hazardous chemical agents, the Service Provider shall comply with the applicable requirements of the **Hazardous Chemical Agents Regulations, 2021**.

The Service Provider shall ensure, where applicable:

- a) appropriate risk assessment;
- b) suitable storage and handling;
- c) access to relevant safety data sheets;
- d) appropriate PPE;
- e) ventilation;
- f) spill-control arrangements; and
- g) appropriate disposal of contaminated materials.

C3.10.11 Lifting and Rigging

Lifting machinery, lifting tackle and lifting operations shall comply with the applicable requirements of the **Driven Machinery Regulations, 2015**.

The Service Provider shall use lifting equipment and accessories suitable for the mass, configuration and conditions of the lift.

Before undertaking a material lift, the Service Provider shall establish, as applicable:

- a) equipment mass;
- b) centre of gravity;
- c) suitable lifting points;
- d) capacity of the lifting equipment;
- e) condition and certification of lifting equipment and tackle;
- f) lifting method; and

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

g) site conditions affecting the lift.

Existing municipal lifting beams, monorails, davits, cranes, lifting eyes or other lifting facilities shall not be assumed to be suitable without appropriate verification.

Persons shall not position themselves beneath suspended loads.

C3.10.12 Working at Heights

Work at height shall be planned and undertaken using suitable access and fall-prevention or fall-arrest measures.

Where the **Construction Regulations, 2014** apply, the applicable fall-protection requirements shall be complied with.

Ladders shall only be used where appropriate to the nature, risk and duration of the activity.

Scaffolding, elevated work platforms, ladders and fall-protection equipment shall be suitable for the intended use, properly inspected and compliant with applicable statutory requirements.

C3.10.13 Hot Work and Fire Prevention

Welding, cutting, brazing, grinding and other work capable of producing heat, sparks or ignition shall comply with applicable requirements of the **General Safety Regulations**, site fire-control requirements and the Employer's permit procedures.

Where applicable, the Service Provider shall provide:

- a) hot-work authorisation;
- b) removal or protection of combustible materials;
- c) suitable fire-fighting equipment;
- d) ventilation;
- e) atmospheric or gas testing;
- f) appropriate PPE; and
- g) a fire watch.

Hot work shall not proceed in a hazardous atmosphere or near flammable substances unless the hazards have been appropriately eliminated or controlled.

C3.10.14 Generator, Fuel and Exhaust Safety

Work on emergency generators and associated fuel systems shall comply with the applicable **General Machinery Regulations, Electrical Machinery Regulations, Hazardous Chemical Agents Regulations** and other applicable statutory requirements.

The Service Provider shall control risks associated with:

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- a) unintended starting;
- b) rotating machinery;
- c) electrical generation;
- d) fuel leakage;
- e) fire and ignition;
- f) hot surfaces;
- g) exhaust gases;
- h) battery systems; and
- i) noise.

Generator operation and load testing shall only be undertaken where adequate ventilation and exhaust arrangements are available.

Generator sets shall not be operated in conditions that could expose persons to unsafe concentrations of exhaust gases.

Fuel spills or leaks shall be contained and dealt with immediately.

C3.10.15 Personal Protective Equipment

The Service Provider shall provide, maintain and enforce the use of PPE appropriate to the hazards of the work and in accordance with applicable statutory requirements.

PPE shall be suitable for the intended purpose and operating environment and shall be maintained in serviceable condition.

PPE shall not be relied upon as a substitute for reasonably practicable elimination, isolation, engineering or other higher-order controls.

C3.10.16 Site Access, Barricading and Protection of Others

The Service Provider shall control its work area to prevent unauthorised persons from being exposed to hazards arising from its activities.

Where required, appropriate provision shall be made for:

- a) barricading;
- b) warning signs;
- c) temporary guarding or covers;
- d) lighting;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- e) pedestrian control;
- f) traffic control; and
- g) securing open panels, chambers, wet wells, excavations or equipment.

Sites shall not be left in an unsafe or unsecured condition when unattended.

The Service Provider shall comply with the Employer's applicable access-control and security requirements.

C3.10.17 Housekeeping

Work areas shall be maintained in a reasonably clean and orderly condition throughout execution.

Tools, cables, oils, grease, removed components, packaging and waste shall not be allowed to create unnecessary hazards.

Access routes, operating areas, electrical equipment and emergency equipment shall remain reasonably unobstructed.

On completion, the Service Provider shall remove its waste, temporary equipment and surplus materials unless otherwise instructed by the Employer.

C3.10.18 Incidents, Unsafe Conditions and Stop-Work

All accidents, incidents, near misses, occupational exposures, damage to municipal assets and material unsafe conditions associated with the Service Provider's activities shall be reported and managed in accordance with the **OHS Act**, applicable regulations and the Employer's procedures.

Where an incident is legally reportable, the Service Provider shall fulfil the applicable statutory reporting and investigation requirements and provide relevant records to the Employer.

The Employer may stop work where an immediate or material health and safety risk exists.

The Service Provider shall likewise stop affected work where continuation would expose persons, property or plant to unacceptable risk.

Work shall only resume once the relevant hazard has been adequately controlled and any required authorisation has been obtained.

C3.10.19 Emergency and Reactive Work

The urgent nature of emergency or reactive work shall **not reduce the Service Provider's statutory health and safety obligations**.

Where immediate intervention is necessary to protect life, property, the environment or continuity of essential municipal services, the Service Provider shall implement the minimum controls reasonably necessary to undertake the intervention safely.

No person shall be required or permitted to undertake work under unsafe conditions merely for the purpose of accelerating restoration of service.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Where an emergency necessitates a material departure from the normal approved work method, the circumstances, controls implemented and work undertaken shall be recorded and reported to the Employer as soon as reasonably practicable.

C3.10.20 Health and Safety Records

The Service Provider shall maintain health and safety records appropriate to the nature and statutory requirements of the work undertaken.

Records may include:

- a) risk assessments;
- b) safe work procedures and method statements;
- c) statutory and contractual appointments;
- d) competency and training records;
- e) permits and authorisations;
- f) toolbox talks;
- g) inspection records;
- h) lifting-equipment and lifting-tackle records;
- i) test and calibration records relevant to safety;
- j) incident and investigation records;
- k) occupational exposure records where applicable; and
- l) other records required by legislation or the applicable Task Order.

Records relevant to a Task Order shall be made available to the Employer upon reasonable request and incorporated into the health and safety file or Task Order close-out documentation where required.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.11 ENVIRONMENTAL REQUIREMENTS

C3.11.1 General

The Service Provider shall execute the Works in a manner that prevents or minimises pollution, environmental damage, nuisance and unnecessary disturbance arising from its activities.

The Service Provider shall comply with all environmental legislation, approvals, licences, authorisations, municipal requirements and conditions applicable to the particular Task Order and Site.

Environmental controls shall be proportionate to the nature, scale, location and environmental risk of the work undertaken.

Compliance with this section shall not relieve the Service Provider of any statutory environmental duty or liability arising from its activities.

C3.11.2 Applicable Environmental Legislation

Without limiting the generality of C3.11.1, the Service Provider shall comply, where applicable, with the requirements of:

- a) the **National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended (NEMA)**;
- b) the **National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), as amended**;
- c) the **National Water Act, 1998 (Act No. 36 of 1998), as amended**;
- d) the **National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), as amended**;
- e) applicable Western Cape provincial environmental requirements;
- f) applicable municipal by-laws;
- g) environmental authorisations, licences, permits or approvals applicable to the Site or Works; and
- h) any other environmental legislation or statutory requirement applicable to the particular activity.

Where a Task Order is undertaken at a facility operating under an environmental authorisation, water-use authorisation, waste-management requirement or other environmental approval, the Service Provider shall comply with the applicable conditions communicated by the Employer.

C3.11.3 Environmental Risk Assessment

Before undertaking work presenting a material environmental risk, the Service Provider shall identify the environmental aspects associated with its activities and implement appropriate controls.

Relevant risks may include:

- a) oil and fuel spills;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- b) chemical spills;
- c) sewage and wastewater releases;
- d) contaminated equipment and materials;
- e) discharge of polluted water;
- f) waste generation;
- g) hazardous waste;
- h) dust, fumes and emissions;
- i) noise;
- j) disturbance of soil or vegetation;
- k) work adjacent to watercourses or drainage systems; and
- l) fire or other incidents capable of causing environmental harm.

Where conditions materially change during execution, the environmental controls shall be reviewed accordingly.

C3.11.4 Pollution Prevention

The Service Provider shall take reasonable measures to prevent pollution arising from the Works.

No oil, fuel, grease, solvent, paint, chemical, sewage, contaminated water or other potentially polluting substance shall be intentionally discharged onto the ground, into stormwater systems, watercourses or municipal drainage systems except where specifically authorised and legally permissible.

Plant, equipment and temporary storage arrangements shall be maintained so as to minimise leakage and accidental release.

C3.11.5 Fuel, Oil and Chemical Management

Fuel, lubricants, oils, solvents, cleaning chemicals, coatings and other potentially polluting substances shall be handled and stored in a manner appropriate to the quantity and environmental risk involved.

Where applicable:

- a) containers shall be suitable and maintained in good condition;
- b) containers shall be clearly identified;
- c) temporary storage shall be located away from stormwater drains and watercourses where reasonably practicable;
- d) appropriate secondary containment shall be provided where warranted by the quantity or risk;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- e) spill-control materials shall be readily available; and
- f) refuelling and transfer activities shall be controlled to minimise spills.

Used oil and other contaminated liquids shall be collected and managed in accordance with applicable waste requirements.

C3.11.6 Spill Prevention and Response

The Service Provider shall have suitable means available to contain and clean up spills reasonably foreseeable from its activities.

In the event of a spill or accidental release, the Service Provider shall:

- a) take immediate reasonable action to stop or control the source where safe to do so;
- b) prevent further spread;
- c) protect stormwater systems, soil and water resources;
- d) contain and recover the spilled material where practicable;
- e) notify the Employer promptly where the incident is material or may affect municipal operations or the environment;
- f) clean and rehabilitate the affected area as required; and
- g) manage contaminated cleanup material as waste in accordance with applicable requirements.

Where an incident is legally reportable, the Service Provider shall comply with the applicable statutory notification and reporting requirements.

C3.11.7 Waste Management

Waste generated by the Service Provider shall be minimised and managed in accordance with the applicable requirements of the **National Environmental Management: Waste Act** and municipal requirements.

Waste shall, where practicable, be separated according to its nature and managed through appropriate reuse, recycling, recovery or disposal routes.

Waste shall not be:

- a) burned on Site;
- b) buried on Site;
- c) dumped at an unauthorised location;
- d) discharged into a municipal sewer or stormwater system without authorisation; or
- e) left at the Site following completion of the work unless expressly accepted by the Employer.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

The Service Provider shall use appropriately authorised waste facilities or service providers where legally required.

C3.11.8 Hazardous and Contaminated Waste

Potentially hazardous or contaminated waste may include:

- a) used oil;
- b) oily rags and absorbents;
- c) fuel-contaminated materials;
- d) solvents and cleaning chemicals;
- e) paints and coatings;
- f) chemical containers;
- g) contaminated filters;
- h) batteries;
- i) electronic components;
- j) sewage-contaminated materials; and
- k) other waste classified or regulated as hazardous.

Such waste shall be contained, stored, transported and disposed of through an appropriate lawful route.

Where required by law or the Task Order, the Service Provider shall provide disposal certificates, waste manifests or other evidence of lawful disposal.

C3.11.9 Removed Municipal Equipment and Components

Equipment and components removed from municipal installations shall **not automatically constitute waste**.

Pumps, motors, cables, switchgear, instruments, batteries, generator components, metals and other removed items shall remain the property of the Employer unless otherwise expressly determined.

The Service Provider shall therefore not scrap, sell, recycle or dispose of removed municipal equipment or materials without written authorisation.

The Employer shall determine whether removed items are to be:

- a) repaired;
- b) retained as spares;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- c) returned to municipal stores;
- d) retained for inspection or investigation;
- e) recycled or recovered; or
- f) disposed of.

This clause shall be read with **C3.14 – Materials, Spares and Procurement Controls**.

C3.11.10 Wastewater and Sewage-Contaminated Equipment

Pumps, screens, rakes, pipes and other equipment removed from sewage or wastewater installations shall be handled so as to prevent unnecessary release of sewage, sludge or contaminated liquids.

Where reasonably practicable, contaminated equipment shall be drained, contained or cleaned before transport.

Vehicles and containers used to transport contaminated equipment shall be suitable for the purpose and shall prevent avoidable leakage during transport.

Wastewater or contaminated wash water generated by cleaning shall not be discharged indiscriminately and shall be managed in accordance with the Employer's requirements and applicable legislation.

C3.11.11 Water Resources and Stormwater Protection

Particular care shall be taken where work is undertaken adjacent to:

- a) rivers and watercourses;
- b) wetlands;
- c) dams and reservoirs;
- d) boreholes;
- e) stormwater systems;
- f) drainage channels; or
- g) other environmentally sensitive water-related infrastructure.

No potentially polluting substance shall be allowed to enter a water resource or stormwater system as a result of the Service Provider's activities.

Where work may trigger requirements under the **National Water Act** or an existing water-use authorisation, the Service Provider shall comply with the requirements communicated by the Employer and shall not undertake unauthorised activities.

C3.11.12 Excavation, Soil and Vegetation

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Where an authorised Task Order involves excavation or disturbance of existing ground, the Service Provider shall limit disturbance to the area reasonably necessary for the Works.

Excavated material shall be managed so as not to obstruct drainage or unnecessarily damage adjacent property or vegetation.

Unless otherwise specified, disturbed areas shall be reinstated to a stable and reasonably comparable condition following completion.

No unnecessary clearing or removal of vegetation shall be undertaken.

C3.11.13 Noise, Dust, Fumes and Nuisance

The Service Provider shall take reasonable measures to minimise unnecessary noise, dust, fumes, odours and other nuisance arising from its activities.

Particular consideration shall be given to work:

- a) near residential properties;
- b) at night;
- c) at occupied municipal facilities;
- d) involving generators, grinding, cutting or other noisy equipment; and
- e) capable of generating fumes, dust or odours.

Nothing in this clause shall prevent necessary emergency work, but reasonably practicable measures shall still be implemented to minimise disturbance.

C3.11.14 Generator Emissions and Fuel Systems

Generator maintenance, testing and repair shall be undertaken so as to minimise unnecessary fuel leakage, smoke and exhaust emissions.

Generators shall not be operated for longer than reasonably necessary for testing and commissioning unless required by the Task Order.

Exhaust gases shall be discharged safely and shall not be directed into occupied buildings or enclosed work areas.

Fuel-system defects capable of causing leakage shall be rectified before the generator is returned to normal service, within the authorised scope.

C3.11.15 Environmental Authorisations and Sensitive Sites

Where work is undertaken at a Site subject to an environmental authorisation, environmental management programme, permit, licence or other site-specific environmental condition, the Employer shall make the relevant requirements available where they materially affect the Service Provider's work.

The Service Provider shall comply with such requirements.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

The Service Provider shall not undertake additional clearing, excavation, discharge, construction or other environmentally significant activity outside the authorised Task Order merely for convenience of execution.

Where the Service Provider identifies that the proposed work may require an environmental approval not already in place, it shall notify the Employer before undertaking the affected activity.

3.11.16 Environmental Incidents and Non-Compliance

Environmental incidents, material spills, unauthorised discharges and material environmental non-compliance arising from the Service Provider's activities shall be reported to the Employer as soon as reasonably practicable.

The Service Provider shall take immediate reasonable measures to prevent or minimise further environmental harm.

Where the incident or non-compliance is attributable to the Service Provider, corrective and rehabilitation measures shall be undertaken at the Service Provider's cost to the extent provided for under the Contract and applicable law.

Statutory reporting obligations shall remain the responsibility of the party upon whom such obligations are imposed by law.

C3.11.17 Environmental Records

Environmental records shall be proportionate to the nature and risk of the work and may include:

- a) environmental risk assessments;
- b) permits and approvals;
- c) spill or incident reports;
- d) waste records;
- e) disposal certificates;
- f) waste manifests;
- g) photographs;
- h) records of contaminated materials; and
- i) other records required by applicable legislation or the Task Order.

Relevant records shall be provided as part of the Task Order close-out documentation where required.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.12 RESPONSE TIMES, EMERGENCY CALL-OUTS AND PERFORMANCE STANDARDS

C3.12.1 General

The Service Provider shall maintain sufficient availability, competent personnel, transport, tools, communications and technical support to respond to work instructed under the Framework within the response requirements specified herein and in the applicable Task Order.

Work may be classified by the Employer as:

- a) **Emergency Work (E);**
- b) **Urgent Work (U);** or
- c) **Routine/Planned Work (R).**

The classification shall determine the required response priority and shall not, by itself, determine the method of allocation, valuation or payment for the work.

For purposes of this section:

Acknowledgement Time means the period between the authorised instruction being communicated to the Service Provider and the Service Provider confirming receipt and intended response.

Attendance Time means the period between the authorised instruction being communicated to the Service Provider and the arrival at Site of personnel reasonably competent and equipped to commence the required assessment or intervention.

A response or attendance time shall **not constitute a guaranteed repair or restoration time** unless a specific completion requirement is expressly stated in the Task Order.

C3.12.2 Classification of Work

The Employer shall determine the applicable classification having regard to the operational circumstances and may revise the classification where conditions materially change.

Classification	Description	Typical Circumstances
Emergency Work (E)	Failure or condition requiring immediate intervention to protect life, property, the environment, municipal assets or continuity of an essential municipal service	Critical pump failure, significant sewage overflow or imminent overflow, critical water-supply failure, unsafe electrical/mechanical condition, failure of essential standby generation, critical control-system failure
Urgent Work (U)	Significant defect or failure requiring priority intervention, but where limited redundancy, storage, standby capacity or other	Duty equipment failure with standby available, degraded process operation, significant but non-critical MCC/control fault, equipment at material risk of further failure

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

	temporary operational measures remain available	
Routine/Planned Work (R)	Work that can reasonably be scheduled without immediate material risk to municipal operations	Routine servicing, preventative maintenance, planned repairs, inspections, minor defects, planned refurbishment or replacement

Classification by the Employer shall be based on the operational consequence of the condition and not merely on the type or value of work required.

C3.12.3 Acknowledgement Requirements

The Service Provider shall acknowledge an authorised instruction within the following maximum periods:

Classification	Maximum Acknowledgement Time
Emergency Work	30 minutes
Urgent Work	1 hour
Routine/Planned Work	By the end of the same Working Day, or the next Working Day where issued after normal working hours

The acknowledgement shall, where applicable, confirm:

- a) receipt of the instruction;
- b) the person responsible for coordinating the response;
- c) anticipated mobilisation or attendance time; and
- d) any immediately apparent information or clarification required from the Employer.

Acknowledgement alone shall not constitute compliance with an applicable Site attendance requirement.

C3.12.4 Site Attendance Requirements

Where physical attendance is required, the following maximum attendance periods shall normally apply:

Classification	Maximum Site Attendance Time
Emergency Work	4 hours
Urgent Work	8 hours
Routine/Planned Work	As agreed in the Task Order or approved work programme

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Attendance shall be by personnel reasonably competent and equipped to commence the required assessment or intervention.

The Service Provider shall not satisfy the attendance requirement merely by dispatching personnel who are not reasonably capable of assessing or commencing work on the reported fault.

Where exceptional circumstances beyond the reasonable control of the Service Provider prevent compliance with the required attendance period, the Service Provider shall notify the Employer without delay, state the reason and provide the earliest reasonably achievable attendance time.

C3.12.5 Emergency Availability

Service Providers undertaking Emergency Work shall maintain a functional after-hours contact and escalation arrangement throughout the Framework Period.

The Service Provider shall ensure that:

- a) emergency contact details remain current;
- b) authorised municipal representatives are able to make contact outside normal working hours;
- c) an alternative or escalation contact is available where the primary contact cannot be reached; and
- d) appropriate personnel can be mobilised when Emergency Work is accepted.

Reliance upon a single individual without an appropriate alternative or escalation arrangement shall not constitute adequate emergency availability.

C3.12.6 Acceptance and Inability to Respond

Where a Service Provider is unable to respond within the applicable Emergency or Urgent attendance requirement, it shall advise the Employer immediately.

The Employer may thereafter allocate or reallocate the work in accordance with **C1.4**.

A Service Provider that cannot respond shall have no entitlement to compensation for work allocated to another Service Provider as a consequence thereof.

Repeated inability to respond to work for which the Service Provider was appointed may be considered in performance management and future allocation decisions in accordance with the Contract.

C3.12.7 Initial Site Assessment

Upon attendance at Emergency or Urgent Work, the Service Provider shall establish, as far as reasonably practicable:

- a) the nature of the failure;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- b) the apparent or probable cause;
- c) immediate health and safety risks;
- d) environmental risks;
- e) the effect on municipal service delivery;
- f) the condition of the affected equipment;
- g) whether immediate restoration is reasonably practicable;
- h) whether temporary stabilisation is possible;
- i) additional personnel, equipment, spares or specialist support required; and
- j) the recommended next course of action.

Where the defect cannot be rectified within the authorised scope, the Service Provider shall communicate its initial findings to the Employer without unnecessary delay.

The requirements of **C3.3 relating to staged diagnosis, Condition and Assessment Reports and further authorisation** shall apply where additional work or expenditure is required.

C3.12.8 Emergency Stabilisation

For Emergency Work, the immediate objective shall be to make the situation safe and, where reasonably practicable, stabilise or restore the affected essential municipal service.

Emergency stabilisation may include:

- a) isolation of unsafe equipment;
- b) prevention of further equipment damage;
- c) temporary restoration of essential functionality;
- d) prevention or limitation of sewage overflow;
- e) temporary operation of standby equipment;
- f) restoration of emergency generation;
- g) restoration of essential control, instrumentation or telemetry functionality;
- h) an Employer-authorised temporary bypass or alternative operating arrangement; or
- i) other minimum intervention reasonably necessary to protect persons, municipal assets, the environment or essential services.

Temporary measures shall be clearly identified as such and shall not be represented as permanent repairs.

The emergency provisions of **C3.2, C3.3 and C3.10** shall continue to apply.

C3.12.9 Repair and Restoration

The Service Provider shall proceed diligently with authorised repair and restoration work.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Unless expressly specified in a Task Order, **no universal maximum repair or restoration period shall apply**, as completion may depend upon:

- a) the nature and extent of the failure;
- b) dismantling and further diagnosis;
- c) availability of components or materials;
- d) OEM or specialist involvement;
- e) workshop repairs;
- f) lifting, access or site constraints;
- g) additional defects identified during the work;
- h) Employer operational requirements; or
- i) further authorisation required under C3.3.

Where immediate restoration is not possible, the Service Provider shall provide the Employer with a reasonable estimate of the anticipated repair or restoration period and shall advise the Employer of material changes thereto.

Response-time compliance and repair-duration performance shall be assessed separately.

C3.12.10 Routine and Planned Work

Routine/Planned Work shall be undertaken on the date or within the period stated in the Task Order or otherwise agreed with the Employer.

The Service Provider shall plan the required personnel, equipment, materials and specialist support so as to minimise avoidable disruption and repeat mobilisation.

Where an agreed date cannot reasonably be achieved, the Service Provider shall notify the Employer as soon as practicable, state the reason and propose a revised date.

Repeated failure to attend agreed Routine/Planned Work without reasonable cause may constitute poor performance.

C3.12.11 Travel and Mobilisation Control

Where travel or mobilisation is separately payable under C2, only travel **authorised and reasonably necessary for execution of the applicable Task Order** shall be payable.

Unless otherwise expressly approved:

- a) the applicable point of departure shall be the Service Provider's accepted operational premises relevant to the Framework;
- b) travel arising solely from the Service Provider's internal personnel arrangements, accommodation arrangements or other internal logistics shall not automatically be payable;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- c) unnecessary or duplicated journeys shall not be payable;
- d) repeated mobilisation shall require reasonable justification where the work could reasonably have been coordinated in a single mobilisation; and
- e) the Employer may verify claimed distances against job records, vehicle records, mapping information or other reasonable evidence.

The Service Provider shall use a reasonably direct and practical route.

The **actual authorised distance travelled shall constitute the maximum payable distance**, subject to the applicable C2 rate and any specific Task Order limitation.

C3.12.12 Control of Time-Based Work

Where C2 expressly permits time-based billing, only productive and authorised time reasonably attributable to the Task Order shall be payable.

Time-based billing shall remain subject to the applicable Task Order scope and financial ceiling.

Unless expressly authorised, payable time shall not include:

- a) internal contract administration;
- b) invoice preparation;
- c) avoidable delays attributable to the Service Provider;
- d) delays arising from unavailable contractor tools or equipment;
- e) time spent correcting defective work attributable to the Service Provider;
- f) unnecessary personnel;
- g) duplicated effort not reasonably required for the intervention; or
- h) additional work undertaken without the required authorisation.

Where the Service Provider reasonably anticipates that fault-finding or other time-based work will materially exceed the authorised extent or financial ceiling, it shall advise the Employer and obtain further authorisation before proceeding.

This clause shall not override a fixed or output-based rate where C2 provides such a rate for the applicable work.

C3.12.13 Personnel and Resources

The Service Provider shall deploy personnel, tools and equipment appropriate to the reported fault and applicable Lot.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

The number and competency of personnel attending shall be proportionate to the work and associated risks.

The Employer shall not be liable for unnecessary personnel or resources mobilised solely at the Service Provider's discretion.

Where the initial assessment establishes that additional personnel, lifting equipment, specialist support, OEM involvement or other resources are required, these shall be dealt with in accordance with the Task Order and authorisation provisions of the Contract.

C3.12.14 Communication and Progress Updates

For Emergency Work, the Service Provider shall maintain reasonable communication with the Employer until the immediate emergency has been stabilised, the equipment has been returned to service, or responsibility has been formally handed back to the Employer.

Updates shall be provided at significant stages, including where applicable:

- a) mobilisation;
- b) arrival at Site;
- c) initial diagnosis;
- d) identification of a material additional defect;
- e) requirement for further expenditure or authorisation;
- f) requirement for OEM or specialist support;
- g) implementation of a temporary measure;
- h) restoration of service;
- i) completion of permanent repair; and
- j) identification of outstanding work or operational limitations.

The frequency and form of updates shall be proportionate to the incident.

C3.12.15 Emergency and Reactive Work Records

Each Emergency or Urgent intervention shall be supported by an appropriate job record containing, where applicable:

- a) Task Order or emergency instruction reference;
- b) Site;
- c) equipment identification;
- d) date and time of instruction;
- e) date and time acknowledged;
- f) date and time of mobilisation;
- g) arrival time;
- h) personnel attending;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- i) reported fault;
- j) findings and diagnosis;
- k) work undertaken;
- l) materials and components used;
- m) temporary measures implemented;
- n) time of stabilisation or restoration;
- o) outstanding defects or work;
- p) photographs where appropriate; and
- q) the Employer representative to whom the equipment or Site was handed back.

Detailed reporting and record requirements shall comply with **C3.13**.

C3.12.16 Performance Indicators

The Employer may assess Service Provider performance using the following indicators:

Performance Indicator	Measure
Emergency acknowledgement	Instructions acknowledged within 30 minutes
Emergency attendance	Required Site attendance achieved within 4 hours
Urgent acknowledgement	Instructions acknowledged within 1 hour
Urgent attendance	Required Site attendance achieved within 8 hours
Routine/Planned attendance	Attendance achieved on agreed date or within agreed period
Reporting compliance	Required job and close-out records submitted complete and within the required period
First-time resolution	Faults resolved without avoidable repeat attendance where the fault was reasonably capable of first-time resolution
Repeat failure	Repeat failures attributable to defective workmanship, installation or repair
Quality compliance	Work accepted without material non-conformity attributable to the Service Provider
OHS compliance	Performance against applicable health and safety requirements

Performance assessment shall take reasonable account of circumstances outside the Service Provider's control, including Employer-caused delays, inaccessible Sites, upstream utility failures, unavailable proprietary components and approved OEM or specialist dependencies.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.12.17 Minimum Response Performance Standard

Unless otherwise stated in the Contract or applicable Task Order, the Service Provider shall achieve a minimum of **90% compliance** with the applicable:

- a) Emergency acknowledgement requirement;
- b) Emergency attendance requirement;
- c) Urgent acknowledgement requirement; and
- d) Urgent attendance requirement,

measured over the applicable performance-review period.

Performance shall be assessed over a reasonable number of applicable instructions and shall not be distorted by isolated events demonstrably outside the Service Provider's reasonable control.

Repeated or material failure to meet the required performance standards without reasonable cause may constitute poor performance and may be dealt with in accordance with the Contract.

C3.12.18 Relationship with Work Allocation

Compliance with this section forms part of the Service Provider's performance obligations under the Framework.

Performance history, availability and demonstrated ability to respond may be taken into account where permitted by the **work-allocation provisions of C1.4**.

Nothing in this section:

- a) guarantees any Service Provider a minimum number or value of Task Orders;
- b) prevents the Employer from reallocating Emergency or Urgent Work where the initially contacted Service Provider cannot respond;
- c) authorises expenditure beyond an approved Task Order or emergency instruction; or
- d) overrides the rotation, secondary-competition or other allocation mechanisms established in C1.4.

C3.13 REPORTING, JOB CARDS AND RECORDS

C3.13.1 General

The Service Provider shall maintain adequate records of all work undertaken under each Task Order.

Records shall be proportionate to the nature and complexity of the work and shall provide sufficient information to:

- a) identify the work undertaken;
- b) verify the basis of payment;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- c) record defects and corrective work;
- d) demonstrate testing and completion; and
- e) maintain relevant municipal asset and maintenance records.

Information shall not be unnecessarily duplicated between job cards, reports and other records.

C3.13.2 Job Cards

A job card or equivalent approved work record shall be completed for each Site intervention.

The job card shall record, as applicable:

- a) Task Order or authorised instruction number;
- b) Site and equipment/asset identification;
- c) date and relevant attendance times;
- d) personnel attending;
- e) reported fault or instructed work;
- f) findings or diagnosis;
- g) work undertaken;
- h) materials or components used;
- i) tests undertaken;
- j) equipment status on completion; and
- k) outstanding defects or recommended further work.

For Emergency and Urgent Work, the job card shall also record the instruction, acknowledgement and arrival times required for measurement of the response requirements under C3.12.

Where reasonably available, the Employer's representative shall acknowledge the completed job card.

Such acknowledgement confirms the record of attendance and work performed and shall not constitute approval of unauthorised expenditure or acceptance of defective work.

C3.13.3 Condition and Assessment Reports

Where inspection, fault-finding or dismantling identifies additional work requiring further authorisation, the Service Provider shall provide the Condition and Assessment Report required under C3.3.

The report shall be concise and shall include, as applicable:

- a) equipment and Site identification;
- b) condition and defects identified;
- c) probable cause of failure, where reasonably determinable;
- d) photographs or relevant test results;
- e) recommended corrective action; and
- f) estimated cost or pricing basis where requested.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

A separate Condition and Assessment Report shall not be required where the job card contains sufficient information for the Employer to make the required decision.

C3.13.4 Photographic Records

Photographs shall be provided where reasonably necessary to demonstrate:

- a) equipment condition or failure;
- b) dismantled or damaged components;
- c) work undertaken;
- d) equipment or nameplate details;
- e) hidden work before closure; or
- f) completed installation or repair.

Photographs shall be identifiable to the applicable Site, equipment or Task Order where reasonably practicable.

Routine work shall not require excessive photographic reporting.

C3.13.5 Materials, Time and Travel Records

Where materials, time or travel are separately payable under C2, the Service Provider shall maintain sufficient supporting records to verify the amount claimed.

Material records shall identify the items supplied and, where required under C2, provide the relevant supplier invoice or other cost evidence.

Time records shall identify the personnel or applicable resource category, time spent and work undertaken.

Travel records shall identify the applicable journey and distance claimed.

Unsupported or duplicated claims may be rejected by the Employer.

C3.13.6 Test and Commissioning Records

Testing and commissioning records shall be provided in accordance with C3.9.

Depending on the work undertaken, these may include:

- a) electrical or mechanical test results;
- b) motor or pump test reports;
- c) Certificates of Compliance;
- d) instrument calibration records;
- e) protection or equipment settings;
- f) control-system functional tests;
- g) generator test records; and

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- h) commissioning records.

Formal certificates required by legislation or applicable standards shall be provided where required.

C3.13.7 Configuration and Technical Records

Where work affects programmable or configurable equipment, the Service Provider shall provide the relevant final settings, configuration or backup information in accordance with C3.6.

This may include PLC or RTU programs, VSD parameters, instrument settings, telemetry configurations and other information reasonably necessary for future maintenance of the municipal asset.

Where a Task Order materially changes an installation, the Service Provider shall provide updated or marked-up drawings and relevant asset information.

Formal as-built drawings shall be required for new installations or substantial modifications where specified in the Task Order.

C3.13.8 Service Records

For scheduled maintenance, the Service Provider shall record, as applicable:

- a) equipment serviced;
- b) date and service type;
- c) operating hours where relevant;
- d) consumables replaced;
- e) defects identified;
- f) relevant test results; and
- g) further maintenance recommended.

The purpose of the record shall be to maintain a usable maintenance history for the asset.

C3.13.9 Outstanding Defects

Any material defect or incomplete work remaining when equipment is returned to service shall be clearly reported to the Employer.

The Service Provider shall identify:

- a) the outstanding defect;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- b) any limitation or risk associated with continued operation;
- c) temporary measures in place; and
- d) recommended corrective action.

Equipment shall not be represented as fully repaired where a material defect remains known to the Service Provider.

C3.13.10 Close-Out Documentation

The documentation required to close a Task Order shall depend on the nature of the work.

As applicable, it may comprise:

- a) completed job card;
- b) Condition and Assessment Report;
- c) test or commissioning records;
- d) statutory certificates;
- e) relevant photographs;
- f) warranties;
- g) configuration or backup files;
- h) updated or as-built drawings; and
- i) records specifically required by the Task Order.

The Employer may require outstanding material documentation to be submitted before final acceptance or payment of the affected work.

C3.13.11 Submission Periods

Unless otherwise specified in the Task Order:

- a) records for **Emergency and Urgent Work** shall be submitted within **one (1) Working Day** after the intervention or stabilisation;
- b) records for **Routine/Planned Work** shall be submitted within **three (3) Working Days** after completion; and
- c) close-out documentation for **major repairs, refurbishment, new installations or project work** shall be submitted within **ten (10) Working Days** after completion or commissioning.

Where the complete close-out documentation cannot reasonably be produced within the above period, the Service Provider shall submit the available records and advise the Employer when the outstanding documents will be provided.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Statutory submission requirements shall take precedence where applicable.

C3.13.12 Monthly Reporting

Where requested by the Employer, the Service Provider shall submit a concise monthly summary of work undertaken under the Framework.

The summary may include:

- a) Task Orders received and completed;
- b) outstanding work;
- c) Emergency and Urgent response performance;
- d) equipment awaiting parts or specialist support;
- e) repeat failures or material defects; and
- f) other significant matters requiring the Employer's attention.

The monthly report shall summarise existing records and shall **not require duplication of information already submitted under individual Task Orders.**

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.14 MATERIALS, SPARES AND PROCUREMENT CONTROLS

C3.14.1 General

All materials, spares, components and equipment supplied under the Contract shall be:

- a) new and unused unless refurbishment, reconditioning or reuse is expressly authorised;
- b) suitable for the intended duty and operating environment;
- c) compatible with the existing installation;
- d) of appropriate quality and rating;
- e) compliant with the applicable technical specifications, standards and statutory requirements; and
- f) obtained from reputable manufacturers, suppliers or approved specialist sources.

The Service Provider shall verify the suitability of items before procurement and installation.

C3.14.2 Compatibility with Existing Equipment

Replacement components shall, as far as reasonably practicable, maintain compatibility with the Employer's existing equipment and systems.

Particular consideration shall be given to:

- a) physical dimensions and mounting arrangements;
- b) electrical ratings;
- c) hydraulic or mechanical duty;
- d) protection requirements;
- e) control and signal interfaces;
- f) communications protocols;
- g) software and configuration compatibility;
- h) availability of future spares and support; and
- i) interchangeability with existing equipment.

A component shall not be substituted merely because it is technically capable of performing a similar function where the substitution would create unnecessary modification, incompatibility or future maintenance difficulties.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.14.3 OEM and Equivalent Components

Where an OEM component is specified or is necessary to maintain compatibility, warranty, safety or system integrity, the applicable OEM component shall be used unless an alternative is approved by the Employer.

Where an equivalent is permitted, the Service Provider shall demonstrate that the proposed alternative is suitable for the intended application.

The Employer may require relevant:

- a) technical datasheets;
 - b) drawings;
 - c) performance information;
 - d) certificates;
 - e) compatibility information; or
 - f) other reasonable technical evidence
- before approving a proposed equivalent.

Approval of an equivalent shall not relieve the Service Provider of responsibility for its suitability and performance.

C3.14.4 Approval Before Procurement

Materials and components forming part of an already authorised and clearly defined Task Order may be procured without further approval where they comply with the approved scope and pricing mechanism.

Prior Employer approval shall be obtained before procurement where:

- a) the item materially exceeds the authorised scope or financial limit;
- b) an alternative or substitute is proposed for a specified item;
- c) OEM or specialist procurement is required outside the original authorised basis;
- d) a significant design or system change will result; or
- e) the Task Order specifically requires approval before purchase.

The Service Provider shall not commit the Employer to additional expenditure without the required authorisation.

C3.14.5 Specialist and OEM Procurement

Where specialist or OEM materials, equipment or services are required, procurement shall be undertaken in accordance with the applicable C2 pricing mechanism and Task Order authorisation.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Where required for cost verification, the Service Provider shall provide the applicable supplier or OEM quotation before procurement and supporting invoice or equivalent evidence when claiming payment.

The Service Provider shall not artificially split, bundle or route purchases through related parties for the purpose of increasing contractual handling fees or mark-ups.

C3.14.6 Availability and Lead Times

The Service Provider shall advise the Employer where the required material or component has a material lead time that may affect restoration or completion.

Where appropriate, the Service Provider shall identify reasonable alternatives, including:

- a) compatible equivalent components;
- b) repair or refurbishment of the existing component;
- c) temporary measures; or
- d) alternative procurement sources.

No alternative shall be implemented without the required technical approval.

C3.14.7 Free-Issue Materials and Equipment

The Employer may supply materials, components or equipment as **free-issue items** for incorporation into the Works.

Where free-issue items are provided, the Service Provider shall:

- a) inspect the items upon receipt;
- b) report visible damage, shortage or apparent unsuitability before installation;
- c) take reasonable care of the items while in its possession;
- d) use the items only for the authorised Task Order; and
- e) account for unused items on completion.

Where the Employer supplies the material or equipment, the Service Provider shall only be entitled to the applicable labour, installation or other rates permitted under C2.

C3.14.8 Removed Components

Components and equipment removed from municipal installations shall remain the property of the Employer unless the Employer expressly determines otherwise.

Removed items shall not be scrapped, sold, exchanged, retained or disposed of by the Service Provider without authorisation.

The Employer may instruct that removed items be:

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- a) returned to the Site;
- b) delivered to municipal stores;
- c) retained for inspection or failure investigation;
- d) repaired or refurbished;
- e) retained as spares; or
- f) disposed of through an authorised process.

This requirement applies irrespective of whether a replacement component has been supplied.

C3.14.9 Exchange and Core Components

Where an OEM or specialist repair arrangement requires the return of an existing component on an exchange or core basis, the Service Provider shall obtain the Employer's approval before surrendering the municipal component.

The Service Provider shall identify:

- a) the component to be surrendered;
- b) the replacement or exchange component;
- c) the commercial benefit of the exchange arrangement; and
- d) any applicable warranty.

The value or credit associated with the exchanged municipal component shall be reflected in the applicable procurement cost.

C3.14.10 Storage and Protection

Materials and equipment in the Service Provider's custody shall be stored and handled in a manner appropriate to their nature.

The Service Provider shall take reasonable measures to prevent:

- a) damage;
- b) deterioration;
- c) corrosion;
- d) contamination;
- e) moisture ingress;
- f) loss or theft; and

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

g) unauthorised use.

Equipment shall remain appropriately identified where traceability to a particular Task Order or municipal asset is required.

C3.14.11 Warranties

Manufacturer, supplier and OEM warranties obtained for materials, components or equipment supplied under the Contract shall, where applicable, be passed to or made available for the benefit of the Employer.

The Service Provider shall provide relevant warranty documentation as part of the Task Order close-out records.

The Service Provider shall not knowingly take action that unnecessarily invalidates an existing manufacturer's warranty.

C3.14.12 Critical Spares

Where recurring failures, long lead times or operational criticality justify holding a spare, the Service Provider may recommend that the Employer procure or retain a critical spare.

Such recommendation shall identify:

- a) the equipment concerned;
- b) the recommended spare;
- c) reason for holding the spare;
- d) indicative lead time; and
- e) any storage or shelf-life considerations.

The decision to establish or replenish municipal critical-spares stock shall remain with the Employer.

C3.14.13 Ownership of Materials Paid for by the Employer

Materials, components and equipment specifically procured for and paid for by the Employer under a Task Order shall be accounted for and shall not be diverted to other work.

Unused material shall be dealt with as instructed by the Employer.

The Service Provider shall maintain sufficient records to enable material expenditure to be reconciled against the applicable Task Order where required.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.15 SITE-SPECIFIC REQUIREMENTS AND EXISTING INSTALLATIONS

C3.15.1 General

The Works will be undertaken at various municipal facilities and installations throughout the Hessequa municipal area, including water, wastewater, electricity and other municipal infrastructure.

Sites may include, amongst others:

- a) water treatment works;
- b) wastewater treatment works;
- c) sewage pump stations;
- d) water pump stations and booster stations;
- e) borehole installations;
- f) reservoirs and associated installations;
- g) electrical substations and distribution installations;
- h) municipal buildings and facilities;
- i) emergency generator installations; and
- j) other sites containing electromechanical equipment falling within the applicable Lot.

The nature, condition, configuration and operational importance of installations vary between Sites.

C3.15.2 Existing Installations

Unless the Task Order provides otherwise, the Service Provider shall assume that work will generally interface with **existing operational municipal infrastructure**.

Before commencing work, the Service Provider shall familiarise itself with the affected installation sufficiently to execute the authorised work safely and correctly.

Existing equipment shall not be unnecessarily removed, replaced, modified or rendered incompatible with the surrounding installation.

Where existing conditions differ materially from the information supplied with the Task Order, the Service Provider shall notify the Employer before proceeding with work materially affected by such difference.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.15.3 Verification of Site Conditions

Dimensions, equipment ratings, connection arrangements, access requirements and other information material to execution shall be verified by the Service Provider where reasonably necessary before manufacture, procurement or installation.

The Service Provider shall not rely solely on drawings, schedules or historical information where a reasonable Site verification would identify a material discrepancy.

Where Site verification is not reasonably possible before Emergency Work, the Service Provider shall proceed on the best available information while complying with the authorisation and safety requirements of the Contract.

C3.15.4 Existing Drawings and Information

Existing drawings, manuals, schedules, asset information and other technical records may be made available by the Employer where available and relevant.

Such information shall be used together with reasonable Site verification.

Where the Service Provider identifies a material discrepancy between available records and the actual installation, the discrepancy shall be reported to the Employer.

Changes resulting from the Service Provider's work shall be recorded in accordance with C3.13.

C3.15.5 Continuity of Municipal Services

Many installations covered by the Framework provide essential municipal services.

The Service Provider shall plan and execute work so as to minimise avoidable interruption to:

- a) water supply;
- b) wastewater collection and treatment;
- c) electricity supply;
- d) pumping operations;
- e) treatment processes;
- f) telemetry and control systems;
- g) standby generation; and
- h) other affected municipal operations.

No planned shutdown of operational plant or equipment shall be undertaken without approval from the Employer's authorised representative.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.15.6 Shutdowns and Operational Coordination

Where work requires shutdown, isolation or interruption of operational equipment, the Service Provider shall coordinate the work with the Employer.

The Employer shall retain control over the timing of operational shutdowns and return to service.

The Service Provider shall ensure that the personnel, materials, tools, lifting equipment and other resources reasonably required for the authorised work are available before a planned shutdown commences.

Where practicable, work requiring shutdown shall be organised to minimise the duration of the interruption.

C3.15.7 Operation of Municipal Plant

The Service Provider shall not operate, switch, isolate, start, stop or materially alter municipal plant except:

- a) where necessary for authorised work;
- b) within the competence and authorisation of the persons concerned; and
- c) in coordination with the Employer's authorised representative.

Nothing in the Contract shall be interpreted as transferring general operational control of a municipal facility to the Service Provider unless expressly provided in the applicable Task Order.

C3.15.8 Existing Equipment to Remain in Service

Equipment not forming part of the authorised work shall, as far as reasonably practicable, remain protected and operational.

The Service Provider shall take reasonable care not to:

- a) damage adjacent equipment;
- b) disturb unrelated wiring or pipework;
- c) alter existing settings unnecessarily;
- d) interrupt unrelated communications or telemetry;
- e) compromise existing protection; or
- f) reduce the reliability of unaffected plant.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Any damage to existing municipal equipment caused by the Service Provider shall be reported immediately and dealt with in accordance with the Contract.

C3.15.9 Interfaces Between Lots and Other Contractors

A Task Order may involve equipment or systems that interface between Lots or with work undertaken by municipal personnel, OEMs, specialists or other contractors.

Typical interfaces may include:

- a) pump and motor work under Lot 1 interfacing with MCC and control work under Lot 2;
- b) borehole pump work under Lot 1 interfacing with protection, instrumentation and telemetry under Lot 2;
- c) generator work under Lot 3 interfacing with MCC, SCADA or wider electrical control systems under Lot 2; and
- d) specialist/OEM work coordinated through the applicable Service Provider.

The Employer shall determine the required allocation or coordination of such work.

Each Service Provider shall cooperate reasonably with the Employer and other authorised parties to ensure proper integration and commissioning.

C3.15.10 Site Access and Working Areas

Access to municipal Sites shall be subject to the Employer's applicable access, security, operational and health and safety requirements.

The Service Provider shall restrict its activities, personnel, vehicles, materials and equipment to areas reasonably necessary for execution of the Works.

Access routes, emergency equipment and operational areas shall not be unnecessarily obstructed.

Sites and working areas shall be left secure and in a safe condition when unattended.

C3.15.11 Security of Municipal Installations

The Service Provider shall take reasonable precautions to maintain the security of municipal Sites and infrastructure while undertaking work.

Gates, doors, panels, control rooms, equipment enclosures and other secured areas shall not be left unnecessarily open or unattended.

Keys, access devices, passwords and other access information provided for execution of the Works shall:

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- a) be used only for authorised purposes;
- b) not be disclosed to unauthorised persons; and
- c) be returned or otherwise dealt with as instructed by the Employer.

C3.15.12 Site Reinstatement

On completion of work, the Service Provider shall reinstate areas disturbed by its activities to a safe and serviceable condition.

This shall include, as applicable:

- a) removal of temporary equipment and waste;
- b) reinstatement of guards and covers;
- c) closing of panels and enclosures;
- d) reinstatement of access arrangements;
- e) cleaning of the work area; and
- f) reasonable reinstatement of surfaces or structures disturbed by the work.

Any material damage caused by the Service Provider outside the authorised work shall be reported to the Employer.

C3.15.13 Site and Asset Schedules

Where provided, the Employer's site and asset schedules shall identify known installations and equipment relevant to the Framework.

Such schedules are intended primarily to assist Tenderers and Service Providers in understanding the general nature and extent of the municipal asset base.

Unless expressly stated otherwise:

- a) asset quantities are indicative and may change during the Framework Period;
- b) omission of an existing municipal asset from a schedule shall not necessarily exclude work on that asset where it falls within the scope of the applicable Lot;
- c) inclusion of an asset shall not guarantee that work will be instructed in respect thereof; and
- d) the actual scope of each intervention shall be determined by the applicable Task Order.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.16 EXISTING ASSET BASE AND OPERATING ENVIRONMENT

C3.16.1 General

The Employer operates a geographically distributed portfolio of water, wastewater and associated electromechanical infrastructure throughout the Hessequa municipal area.

The Framework provides for the maintenance, repair, refurbishment, replacement, modification, installation, testing and commissioning of electromechanical equipment and associated control systems at these facilities, in accordance with the scope of the applicable Lot.

The information contained in this section is provided to indicate the general scale, nature, geographic distribution and operating environment of the existing municipal asset base and to assist Tenderers in understanding the infrastructure that may require services under the Framework.

The information is based on the Employer's available asset and GIS records and constitutes baseline information only. It shall not be interpreted as a complete or warranted asset register.

C3.16.2 Geographic Distribution

The infrastructure covered by the Framework is distributed throughout the Hessequa municipal area, including the following principal towns and service areas:

Principal Area	Approximate Reference Coordinates
Albertinia	34.20° S, 21.58° E
Riversdale	34.11° S, 21.27° E
Garcia	34.02° S, 21.23° E
Heidelberg	34.10° S, 20.97° E
Slangrivier	34.15° S, 20.86° E
Witsand	34.38° S, 20.82° E
Gouritsmond	34.34° S, 21.87° E
Stilbaai	34.37° S, 21.41° E
Jongensfontein	34.43° S, 21.33° E
Melkhoutfontein	34.32° S, 21.44° E

The coordinates are provided for general geographic orientation only and shall not constitute Site coordinates for measurement, travelling claims, access, setting-out or execution of a Task Order.

Infrastructure also includes remote pump stations, reservoirs, boreholes and other municipal installations situated outside the principal built-up areas.

C3.16.3 Existing Infrastructure Baseline

At the time of preparation of this tender, the Employer's available infrastructure records indicate approximately the following:

Infrastructure Category	Available Baseline
Water treatment and desalination facilities	6

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Wastewater treatment works and associated treatment facilities	11
Sewage pump stations	35
Water pump stations and pumping installations	22
Reservoir installations / asset records	23
Borehole asset records	17

The above quantities are indicative. Certain records may represent associated facilities, inactive assets, consolidated installations or assets subsequently modified, replaced or decommissioned.

The quantities shall not constitute guaranteed quantities for purposes of work allocation, measurement or payment.

C3.16.4 Water Treatment and Desalination Facilities

The Employer's available records identify the following principal water treatment facilities:

- a) Albertinia Water Treatment Works;
- b) Riversdale Water Treatment Works;
- c) Garcia Water Treatment Works;
- d) Stilbaai Water Treatment Works;
- e) Jongensfontein Water Treatment Works; and
- f) Witsand Desalination Plant.

These facilities contain electromechanical, electrical, instrumentation and control equipment of varying type, capacity, age and configuration.

The Witsand facility additionally includes equipment associated with the municipal desalination process.

C3.16.5 Wastewater Treatment Facilities

The Employer's available records identify wastewater treatment infrastructure at:

- a) Albertinia;
- b) Riversdale;
- c) Garcia;
- d) Gouritsmond;
- e) Witsand;
- f) Heidelberg;
- g) Slangrivier;
- h) Stilbaai;
- i) Jongensfontein; and
- j) Melkhoutfontein.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Certain locations include associated treatment facilities recorded separately in the available asset information, including oxidation ponds and related infrastructure.

The installations comprise various combinations of pumping, aeration, mixing, screening and other process equipment together with associated electrical, instrumentation, control and telemetry systems.

C3.16.6 Sewage Pump Stations

The Employer's available GIS information identifies approximately **35 sewage pump stations** distributed across Albertinia, Gouritsmond, Jongensfontein, Heidelberg, Melkhoutfontein, Riversdale, Slangrivier, Stilbaai, Witsand and Garcia.

The installations vary in size, duty, age, manufacturer, configuration and accessibility and generally comprise combinations of pumping and mechanical equipment together with associated electrical, control, instrumentation and telemetry systems.

Tenderers shall take cognisance of the geographically distributed nature of these installations when tendering under the applicable Lot.

C3.16.7 Water Pump Stations

The Employer's available GIS information identifies approximately **22 water pump stations and pumping installations** distributed across Albertinia, Riversdale, Garcia, Heidelberg, Gouritsmond, Melkhoutfontein, Stilbaai and Jongensfontein.

These include water pump stations, booster stations and associated water-supply pumping infrastructure of varying duty, capacity and configuration.

The installations generally comprise pumps and motors together with associated mechanical, electrical, control, protection, instrumentation and telemetry equipment.

C3.16.8 Borehole Installations

The Employer's available GIS information contains approximately **17 borehole asset records**, principally within the Albertinia, Stilbaai and Melkhoutfontein service areas.

The available baseline includes an asset recorded as disposed and shall therefore not be interpreted as representing 17 operational boreholes.

Borehole installations vary in pump and motor rating, installation depth, configuration, accessibility and lifting requirements and may include associated electrical supplies, motor control and protection, instrumentation and telemetry.

Pump, motor and associated mechanical work shall generally fall within **Lot 1**, while electrical, control, protection, instrumentation and telemetry work shall generally fall within **Lot 2**, subject to the applicable Task Order.

Actual borehole depth, equipment particulars, lifting requirements and Site conditions shall be verified before removal, replacement or installation.

C3.16.9 Reservoir and Remote Monitoring Installations

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

The Employer's available GIS information identifies approximately **23 reservoir installations or asset records** distributed throughout the municipal area, including installations serving Albertinia, Riversdale, Garcia, Heidelberg, Witsand, Slangrivier, Gouritsmond, Jongensfontein, Melkhoutfontein and Stilbaai.

Electromechanical work associated with these installations may include level, flow and pressure instrumentation, electrical and control equipment, telemetry, communications and associated remote-monitoring equipment.

C3.16.10 Existing Electromechanical Equipment

The Employer's installations comprise equipment of various manufacturers, capacities, ages and configurations, including, amongst others:

- a) clean-water, sewage, process, booster, transfer and borehole pumps;
- b) electric motors;
- c) aerators, mixers and agitators;
- d) blowers;
- e) mechanical screens, conveyors and compactors;
- f) gearboxes, mechanical drives, valves and actuators;
- g) MCCs, starters, VSDs, soft starters and protection equipment;
- h) PLCs, RTUs and process-control equipment;
- i) level, flow, pressure and other process instrumentation;
- j) telemetry and communications equipment; and
- k) emergency standby generators and associated equipment.

The detailed technical requirements and applicable capacity ranges are specified elsewhere in Part C3 and in the Schedule of Rates for the applicable Lot.

C3.16.11 Existing Telemetry and Control Infrastructure

A substantial portion of the Employer's existing process-control, telemetry and remote-monitoring infrastructure comprises systems supplied, installed and/or supported by **Spectrum Communications and Hydrometrix**.

The Employer's intention is generally to maintain, support and progressively extend compatible existing infrastructure rather than undertake unnecessary wholesale replacement of established systems.

Service Providers shall take due cognisance of existing system compatibility and integration requirements.

Where proprietary configuration or specialist integration is required, the Service Provider shall coordinate the work with the Employer and, where authorised, the applicable system supplier or specialist in accordance with the Contract.

Detailed configurations, access credentials, communications parameters and other operationally sensitive information shall be made available only where necessary for execution of an authorised Task Order.

C3.16.12 Emergency Generator Installations

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

The Employer operates a geographically distributed fleet of fixed and mobile emergency standby generators serving water, wastewater, borehole, pumping and other municipal infrastructure.

Available municipal asset information identifies generator installations within **Albertinia, Heidelberg, Riversdale, Slangrivier, Stilbaai, Jongensfontein and Witsand**, amongst other municipal facilities.

The documented generator fleet includes units in the approximate **50 kVA, 75/80 kVA, 150 kVA and 200 kVA capacity ranges**, together with other generator installations of varying capacities. The wider capacity range applicable to the Framework shall be as specified under Lot 3 and the Schedule of Rates.

Known installations include generators serving water and wastewater pump stations, borehole installations and other municipal facilities. The fleet includes both fixed installations and mobile generating equipment. Available municipal records confirm, amongst others, generators at Heidelberg, Slangrivier, Stilbaai, Jongensfontein, Riversdale and Albertinia.

The generator fleet comprises units of varying manufacturer, engine type, alternator manufacturer, age, condition and control configuration. Associated equipment may include starting and battery systems, alternators, generator controllers, AMF/ATS and changeover equipment, fuel systems, protection, enclosures and auxiliary equipment.

The detailed technical requirements and capacity ranges applicable to generator work are specified under **Lot 3** and the Schedule of Rates.

C3.16.13 Tenderer Familiarisation

Tenderers shall familiarise themselves, to the extent reasonably necessary for tendering, with the **general nature, range, geographic distribution and operating environment** of the infrastructure described herein.

Tenderers shall take cognisance that:

- a) equipment varies in age, manufacturer, model, capacity, condition and configuration;
- b) installations and equipment configurations differ between Sites;
- c) facilities include both urban and remote installations distributed throughout the municipal area;
- d) travelling distances, Site access, lifting requirements and working conditions vary;
- e) existing asset information may not reflect every subsequent modification, replacement or addition; and
- f) assets may be added, replaced, upgraded, relocated or decommissioned during the Contract Period.

Tenderers requiring further familiarisation with particular installations prior to tender closing shall utilise the clarification or Site-access arrangements made available by the Employer.

C3.16.14 Verification at Task Order Stage

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Tender-stage familiarisation shall not relieve the Service Provider of responsibility for verifying the actual Site conditions and equipment particulars applicable to each Task Order.

Before procurement, manufacture, removal, replacement or material modification, the Service Provider shall verify all information reasonably necessary for proper execution of the work, including, where applicable:

- a) equipment identification, rating and duty;
- b) dimensions and connection arrangements;
- c) electrical, mechanical, control and instrumentation requirements;
- d) borehole depth and lifting requirements;
- e) Site access and working conditions; and
- f) interfaces with existing equipment and systems.

Any material discrepancy affecting the authorised work shall be reported to the Employer before proceeding with the affected work.

C3.16.15 Status of Asset Information

The information contained in this section is provided as a **baseline description of the Employer's existing asset environment**.

Accordingly:

- a) omission of a Site, asset, manufacturer, model, equipment type or rating shall not exclude work thereon where such work falls within the scope of the applicable Lot;
- b) inclusion of an asset shall not guarantee that work will be instructed in respect thereof;
- c) baseline quantities shall not constitute guaranteed quantities of work;
- d) the Employer may add, remove, replace, modify or reconfigure assets during the Contract Period; and
- e) the actual scope of each intervention shall be defined by the applicable Task Order.

The Employer does not warrant that the information contained herein constitutes a complete or current asset register.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.17 TESTING, COMMISSIONING AND ACCEPTANCE

C3.17.1 General

All work shall be inspected, tested and, where applicable, commissioned before the affected equipment or system is returned to normal service or presented to the Employer for acceptance.

The extent of testing and commissioning shall be appropriate to the nature of the work undertaken and shall comply with the applicable Lot specification, statutory requirements, relevant standards and manufacturer's requirements.

The Service Provider shall provide the competent personnel, test equipment and resources reasonably necessary to demonstrate satisfactory completion of the authorised work.

C3.17.2 Testing

Testing shall, as applicable, confirm that:

- a) the authorised work has been completed correctly;
- b) the equipment is safe and suitable for return to service;
- c) electrical, mechanical, protection and control functions affected by the work operate correctly;
- d) alarms, interlocks, instrumentation, telemetry and remote-control functions affected by the work operate correctly; and
- e) the work has not adversely affected associated existing equipment or systems.

The detailed tests applicable to particular equipment shall be as specified under the relevant Lot requirements or Task Order.

C3.17.3 Commissioning

New, replaced, substantially refurbished or materially modified equipment shall be commissioned where applicable before final acceptance.

Commissioning shall be coordinated with the Employer where operation, isolation, shutdown or interruption of municipal plant or services is required.

Where full operational or duty testing cannot reasonably be completed due to prevailing Site or process conditions, the limitation shall be recorded and the outstanding test completed when reasonably practicable or as directed by the Employer.

C3.17.4 Test Records and Certificates

Test results, commissioning records and statutory certificates required for the work undertaken shall be submitted as part of the applicable Task Order close-out documentation.

Where a Certificate of Compliance or other statutory certification is required, it shall be issued by a person appropriately registered or authorised in terms of the applicable South African legislation.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.17.5 Defects Identified During Testing

Where testing or commissioning identifies defective or non-compliant work attributable to the Service Provider, the Service Provider shall rectify the defect and repeat the relevant testing at its own cost.

Successful testing or commissioning shall not relieve the Service Provider of its obligations in respect of defects, warranties or other requirements of the Contract.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.18 DEFECTS, WARRANTIES AND POST-COMPLETION OBLIGATIONS

C3.18.1 General

The Service Provider shall remain responsible for the quality and performance of work executed under each Task Order in accordance with the Contract.

Completion, commissioning, return of equipment to service or payment of a Task Order shall not relieve the Service Provider of responsibility for defective workmanship, defective materials or other obligations arising under the Contract.

C3.18.2 Defects

Where a defect attributable to the Service Provider's workmanship, materials or equipment supplied under a Task Order becomes apparent, the Service Provider shall investigate and rectify the defect in accordance with the Contract.

Where the defect:

- a) prevents operation of essential municipal equipment;
- b) creates an unsafe condition;
- c) causes or is likely to cause interruption of a municipal service; or
- d) may result in consequential damage to equipment,

the Service Provider shall treat the matter as urgent and respond in accordance with the applicable emergency-response requirements.

Defects attributable to the Service Provider shall be rectified at no additional cost to the Employer.

C3.18.3 Manufacturer and Supplier Warranties

Manufacturer, OEM and supplier warranties applicable to equipment, components or materials supplied under a Task Order shall accrue for the benefit of the Employer.

The Service Provider shall provide the Employer with applicable warranty documentation and shall reasonably assist with enforcement of such warranties where required.

The Service Provider shall not undertake or permit work that unnecessarily invalidates an existing manufacturer's warranty.

C3.18.4 Repaired and Refurbished Equipment

Where equipment is repaired, rewound, overhauled or refurbished, the Service Provider shall warrant the work performed and the components replaced in accordance with the warranty requirements of the Contract.

The warranty shall apply to the authorised repair or refurbishment and shall not make the Service Provider responsible for unrelated failures arising from pre-existing defects, normal wear or components outside the scope of the Task Order.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.18.5 Repeat Failures

Where equipment fails repeatedly following repair or refurbishment, the Employer may require the Service Provider to investigate whether the failure is related to:

- a) the previous repair;
- b) incorrect installation or commissioning;
- c) unsuitable replacement components;
- d) incorrect settings or configuration; or
- e) an underlying condition not addressed during the previous intervention.

Where the repeat failure is attributable to defective work performed by the Service Provider, the corrective work shall be undertaken at no additional cost to the Employer.

Where the failure is demonstrated to arise from a separate cause outside the Service Provider's responsibility, further work shall be subject to a separate or amended Task Order.

C3.18.6 Warranty Records

Applicable warranty periods, certificates and relevant supporting information shall be included in the Task Order close-out documentation and shall identify the equipment or work to which the warranty applies.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.19 TASK ORDER COMPLETION AND CLOSE-OUT

C3.19.1 Completion of a Task Order

A Task Order shall be considered complete when the authorised work has been executed and the affected equipment or system has, where applicable, been satisfactorily tested, commissioned and returned to service.

Completion shall be subject to the requirements of the Contract and acceptance by the Employer's authorised representative.

C3.19.2 Requirements for Close-Out

Before final close-out of a Task Order, the Service Provider shall, as applicable:

- a) complete the authorised scope of work;
- b) rectify outstanding defects affecting completion;
- c) complete the required testing and commissioning;
- d) return the affected equipment or installation to a safe and serviceable condition;
- e) remove temporary works, redundant materials, waste and equipment belonging to the Service Provider;
- f) reinstate areas disturbed by the work;
- g) return removed municipal equipment, unused free-issue materials, keys and other Employer property as directed;
- h) submit the records, certificates, warranties, test results and other documentation required under the Contract; and
- i) obtain confirmation from the Employer's authorised representative that the work may be closed out.

C3.19.3 Outstanding Minor Items

The Employer may permit close-out subject to completion of minor outstanding items that do not:

- a) affect the safe operation of the equipment;
- b) prevent the equipment from performing its intended function;
- c) materially impair the reliability of the installation; or
- d) prevent the Employer from using the completed work.

Such outstanding items shall be recorded and completed within the period agreed or instructed by the Employer.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

C3.19.4 Final Measurement and Payment

Completion or operational handover shall not, by itself, establish the amount payable.

Payment shall be based on the authorised Task Order, work actually executed, applicable contractual rates and supporting records required in terms of Part C2 and the Contract.

Unauthorised work, expenditure exceeding an authorised limit without approval, or unsupported quantities shall not become payable merely because the work has been completed.

C3.19.5 Task Order Close-Out Record

The Employer may require a Task Order close-out record confirming, as applicable:

- a) Task Order reference;
- b) Site and equipment affected;
- c) work completed;
- d) completion date;
- e) testing and commissioning status;
- f) outstanding items, if any;
- g) equipment returned to service;
- h) documentation submitted; and
- i) acceptance by the Employer's authorised representative.

The close-out record shall not constitute a waiver of defects, warranty obligations or any other rights of the Employer under the Contract.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

ANNEXURES	STANDARD FORMS AND SUPPORTING DOCUMENTS	
Annexure	Description	
Annexure A	Annual Emergency Duty Roster Template	
Annexure B	Job Card and Completion Certificate	
Annexure C	Quality Control Plan Requirements	

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

ANNEXURE A

ANNUAL EMERGENCY DUTY ROSTER

Contract No.: HES-TECH 27/2627
Contract Period: Three (3) Years

A.1 PURPOSE

This Annexure establishes the standard Annual Emergency Duty Roster applicable to Service Providers appointed under the Framework.

The roster provides a transparent and predictable rotation for Emergency Work and identifies the first-call Service Provider for each Lot during the applicable duty period.

The roster shall be administered in conjunction with the Task Order allocation, emergency-response and performance provisions of the Contract.

Inclusion in the roster does not guarantee any minimum number, frequency or value of Task Orders.

A.2 APPLICATION OF THE ROSTER

A separate emergency duty rotation shall apply to each Lot as follows:

Lot	Description	Maximum Number of Appointed Service Providers	Standard Rotation
Lot 1	Pumps, Motors and Mechanical Equipment	4	3 months per Service Provider per year
Lot 2	MCCs, Electrical Panels, Telemetry and Control Systems	3	4 months per Service Provider per year
Lot 3	Emergency Generators and Associated Control Systems	3	4 months per Service Provider per year

The standard rotation assumes that the maximum intended number of Service Providers is appointed to each Lot.

Where fewer Service Providers are appointed, or where the composition of the panel changes during the Contract Period, the Employer shall adjust the roster on an equitable rotational basis.

A.3 APPOINTED SERVICE PROVIDER MATRIX

Following award, the Employer shall populate the appointed Service Providers against the contractor designations used in the roster.

Contractor Designation	Lot 1	Lot 2	Lot 3
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HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Contractor 1	To be populated after award	To be populated after award	To be populated after award
Contractor 2	To be populated after award	To be populated after award	To be populated after award
Contractor 3	To be populated after award	To be populated after award	To be populated after award
Contractor 4	To be populated after award	N/A	N/A

The designation of a Service Provider as Contractor 1, Contractor 2, Contractor 3 or Contractor 4 is solely for administration of the roster and shall not constitute a ranking or preference between appointed Service Providers.

A.4 STANDARD ANNUAL EMERGENCY DUTY ROSTER MATRIX

Unless otherwise determined by the Employer in accordance with the Contract, the standard annual rotation shall be:

Month	Lot 1 – Pumps, Motors and Mechanical Equipment	Lot 2 – MCCs, Electrical Panels, Telemetry and Control Systems	Lot 3 – Emergency Generators and Associated Control Systems
January	Contractor 1	Contractor 1	Contractor 1
February	Contractor 2	Contractor 2	Contractor 2
March	Contractor 3	Contractor 3	Contractor 3
April	Contractor 4	Contractor 1	Contractor 1
May	Contractor 1	Contractor 2	Contractor 2
June	Contractor 2	Contractor 3	Contractor 3
July	Contractor 3	Contractor 1	Contractor 1
August	Contractor 4	Contractor 2	Contractor 2
September	Contractor 1	Contractor 3	Contractor 3
October	Contractor 2	Contractor 1	Contractor 1
November	Contractor 3	Contractor 2	Contractor 2
December	Contractor 4	Contractor 3	Contractor 3

Where the full complement of Service Providers is appointed, the standard annual rotation provides:

- a) **Lot 1:** three (3) duty months per Service Provider;
- b) **Lot 2:** four (4) duty months per Service Provider; and
- c) **Lot 3:** four (4) duty months per Service Provider.

The starting position may be rotated between Contract Years to provide reasonable distribution of duty periods over the duration of the Contract.

A.5 EMERGENCY CONTACT MATRIX

The Employer shall populate the following matrix following appointment. Each Service Provider shall ensure that its emergency contact information remains current throughout the Contract Period.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Lot	Service Provider	Primary Emergency Contact	Contact No.	Alternative Emergency Contact	Contact No.
Lot 1	Contractor 1				
Lot 1	Contractor 2				
Lot 1	Contractor 3				
Lot 1	Contractor 4				
Lot 2	Contractor 1				
Lot 2	Contractor 2				
Lot 2	Contractor 3				
Lot 3	Contractor 1				
Lot 3	Contractor 2				
Lot 3	Contractor 3				

A.6 OPERATION OF THE ROSTER

The Service Provider identified in the roster for the applicable Lot and duty period shall ordinarily be the **first-call Service Provider for Emergency Work** arising under that Lot.

The following shall apply:

- a) Emergency Work shall be instructed and authorised in accordance with the Contract;
- b) the rostered Service Provider shall comply with the applicable emergency response times specified in the Contract;
- c) allocation of an emergency duty period does not constitute advance authority to undertake work without an instruction from the Employer;
- d) the Service Provider shall maintain appropriate emergency communication and response arrangements during its allocated duty period;
- e) the Service Provider shall immediately advise the Employer where it is unable to respond to an emergency instruction;
- f) Emergency Work shall remain subject to the applicable Contract rates, authorisation requirements and Task Order procedures; and

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HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

g) allocation of an emergency duty period shall not create any entitlement to work or expenditure.

A.7 FAILURE OR INABILITY TO RESPOND

Where the rostered Service Provider:

- a) fails to respond within the applicable contractual response period;
- b) is unavailable;
- c) lacks the specific technical or specialist capability required for the emergency;
- d) does not have the resources reasonably necessary to undertake the work;
- e) is already engaged on another emergency and cannot reasonably attend;
- f) is suspended or otherwise temporarily ineligible to receive work; or
- g) cannot reasonably undertake the work within the required timeframe,

the Employer may immediately allocate the Emergency Work to another suitably capable Service Provider appointed to the applicable Lot.

The Employer shall not be required to delay an emergency intervention solely for the purpose of preserving the roster sequence.

Such reallocation shall not automatically alter the subsequent roster sequence.

A.8 CROSS-LOT EMERGENCIES

An emergency may involve work falling within more than one Lot.

Where this occurs, the Employer may:

- a) instruct the rostered Service Provider under each affected Lot;
- b) utilise one Service Provider where that Service Provider is appointed to the affected Lots and possesses the required capability; or
- c) coordinate separate Service Providers where this is technically or operationally appropriate.

The Employer shall determine the appropriate arrangement having regard to safety, response time, technical capability, continuity of responsibility and restoration of the affected municipal service.

A.9 SPECIALIST AND OEM REQUIREMENTS

The emergency duty roster shall not prevent the Employer from obtaining specialist or OEM assistance where the nature of the failure requires proprietary expertise, specialised equipment, software, components or other capability not reasonably available from the rostered Service Provider.

Where such assistance forms part of work allocated to the rostered Service Provider, specialist or OEM involvement shall be dealt with in accordance with the applicable provisions of the Contract.

A.10 PANEL UTILISATION

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

The emergency duty roster establishes the first-call rotation for Emergency Work and shall not, by itself, determine the overall distribution of work or expenditure amongst appointed Service Providers.

The Employer shall separately monitor the cumulative utilisation of Service Providers in accordance with the Task Order allocation and panel-administration provisions of the Contract.

Previous allocations and utilisation may be taken into account in subsequent allocations where permitted by the applicable allocation method.

Reasonable and equitable utilisation of the panel is an administrative objective and shall **not constitute an entitlement to equal work, equal expenditure or any minimum value of work.**

Technical capability, performance, availability, specialist or OEM requirements, emergency circumstances and operational requirements may result in different levels of utilisation amongst appointed Service Providers.

A.11 ROSTER AMENDMENTS

The Employer may amend the roster where reasonably necessary due to:

- a) appointment of fewer Service Providers than anticipated;
- b) suspension, withdrawal or termination of a Service Provider;
- c) persistent failure to comply with emergency response requirements;
- d) changes in the availability or capacity of a Service Provider;
- e) changes in the composition of the panel;
- f) operational requirements;
- g) an exchange of duty periods between Service Providers approved by the Employer; or
- h) any other circumstance reasonably requiring adjustment for effective administration of Emergency Work.

Any material amendment shall be recorded and communicated to the affected Service Providers.

A.12 ROSTER AMENDMENT RECORD

Amendment No.	Effective Date	Lot	Original Allocation	Revised Allocation	Reason	Authorised By

A.13 PERFORMANCE

Performance during emergency duty shall be monitored in accordance with the performance requirements of the Contract.

Relevant performance may include:

- a) availability during allocated duty periods;
- b) acknowledgement and response to emergency instructions;

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- c) attendance within the prescribed response period;
- d) technical capability and preparedness;
- e) quality and effectiveness of work performed;
- f) communication with the Employer;
- g) completion of required Job Cards and records; and
- h) compliance with applicable health, safety and operational requirements.

Performance shall be recorded through the applicable contract-management mechanisms, including the Job Card and Monthly Performance Report.

Persistent non-performance may affect subsequent work allocation and roster participation in accordance with the Contract.

A.14 RELATIONSHIP WITH PLANNED WORK

The Annual Emergency Duty Roster applies to **Emergency Work only**.

The roster shall not determine the allocation of planned maintenance, repairs, refurbishment, new installations, capital work, specialist services or other non-emergency Task Orders.

Such work shall be allocated in accordance with the Task Order allocation and utilisation procedures contained in the Contract.

A.15 NO GUARANTEE OF WORK

Inclusion of a Service Provider in the Annual Emergency Duty Roster:

- a) does not guarantee that an emergency will occur during its allocated duty period;
- b) does not guarantee any minimum number or value of Task Orders;
- c) does not confer exclusivity over work within the applicable Lot;
- d) does not create an entitlement to equal expenditure amongst panel members; and
- e) does not restrict the Employer's right to allocate work otherwise where permitted by the Contract.

A.16 ISSUE AND APPROVAL OF ANNUAL ROSTER

The Employer shall populate and issue the applicable Annual Emergency Duty Roster following appointment of the Service Providers and thereafter as required for each Contract Year.

Contract Year: _____

Applicable Period: _____ to _____

Prepared by:

Name: _____

Designation: _____

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**HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE
MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND
COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL
SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS**

Signature: _____

Date: _____

Approved by the Employer's Authorised Representative:

Name: _____

Designation: _____

Signature: _____

Date: _____

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HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

ANNEXURE B

JOB CARD AND COMPLETION CERTIFICATE

Contract No.: HES-TECH 27/2627
Contract Period: Three (3) Years

B.1 PURPOSE

This Job Card shall record the work actually undertaken under an authorised Task Order, including attendance, labour, materials, equipment affected, testing and completion.

The Job Card:

- a) provides an auditable record of work performed;
- b) supports verification of quantities and payment;
- c) records the condition and status of the affected equipment;
- d) records testing and return to service, where applicable; and
- e) provides confirmation of completion by the Employer's representative.

A signed Job Card does not constitute authority for work outside the approved Task Order and does not, by itself, constitute approval of an invoice or acceptance of unauthorised expenditure.

B.2 TASK ORDER AND SITE DETAILS

Particular	Details
Task Order No.	
Lot	
Service Provider	
Town / Area	
Site / Facility	
Asset / Equipment	
Municipal Asset No., where available	
Job Card No.	
Date of Instruction	
Nature of Work	☐ Planned ☐ Urgent ☐ Emergency

B.3 FAULT / WORK REQUIREMENT

Reported fault or work required:

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.....
..

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Condition found on Site / diagnosis:

.....
..

B.4 ATTENDANCE AND RESPONSE

Activity	Date	Time
Instruction received / acknowledged		
Service Provider dispatched		
Arrival on Site		
Work commenced		
Work completed		
Equipment returned to service		

Response time: _____

Where applicable, response performance shall be assessed against the requirements of the Contract.

B.5 PERSONNEL ON SITE

Name	Trade / Function	Normal Hours	After-Hours / Overtime	Total Hours

Only labour actually used in execution of the authorised work shall be recorded.

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HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

B.6 WORK PERFORMED

Provide a concise description of the work actually completed:

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..

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..

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..

.....
..

Where the work differs materially from the authorised Task Order, the applicable change-control provisions of the Contract shall apply.

B.7 MATERIALS AND COMPONENTS

Materials / Components Supplied by Service Provider

Description	Unit	Quantity	Contract Rate	Item / Reference, where applicable

Employer Free-Issue Materials

Description	Quantity Issued	Quantity Used	Quantity Returned

Unused Employer-supplied materials shall be returned or otherwise accounted for in accordance with the Contract.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

B.8 REMOVED COMPONENTS

Component Equipment Removed	/ Asset / Serial No., where applicable	Condition	Disposition
			☐ Returned to Employer ☐ Approved Disposal ☐ Other
			☐ Returned to Employer ☐ Approved Disposal ☐ Other
			☐ Returned to Employer ☐ Approved Disposal ☐ Other

All removed equipment, components and recoverable materials remain subject to the requirements of the Contract.

B.9 SPECIALIST / OEM INVOLVEMENT

Was specialist or OEM involvement required?

- ☐ No
☐ Yes

If yes:

Particular	Details
Specialist / OEM	
Reason for involvement	

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HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Work undertaken	
Supporting documentation attached	☐ Yes ☐ No

B.10 TESTING AND COMMISSIONING

Testing required: ☐ Yes ☐ No

Commissioning required: ☐ Yes ☐ No

Where applicable, record the principal tests undertaken:

Test / Check	Result / Reading	Status
		☐ Pass ☐ Fail
		☐ Pass ☐ Fail
		☐ Pass ☐ Fail
		☐ Pass ☐ Fail

Detailed test sheets or commissioning records required by the Contract shall be attached to the Job Card.

B.11 EQUIPMENT STATUS ON COMPLETION

At completion of the intervention, the equipment was:

- ☐ Returned to normal service
- ☐ Returned to temporary / restricted service
- ☐ Made safe but not returned to service
- ☐ Removed for repair
- ☐ Awaiting materials / components
- ☐ Awaiting OEM / specialist intervention
- ☐ Further work required

Comments / limitations

.....
..

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HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

Where equipment is not returned to normal service, the Service Provider shall clearly record the reason and any immediate operational or safety implications.

B.12 OUTSTANDING / FOLLOW-UP WORK

Is further work required?

- ☐ No
☐ Yes

If yes:

Any further work requiring additional expenditure or a material change in scope shall be separately authorised in accordance with the Contract.

Recording additional work on this Job Card shall **not constitute authority to proceed**.

B.13 DOCUMENTATION SUBMITTED

Indicate documentation applicable to the work:

Document	Submitted	N/A
Test results	☐	☐
Commissioning record	☐	☐
Certificate of Compliance, where required	☐	☐
OEM / specialist report	☐	☐
Warranty information	☐	☐
Photographs – before / during / after	☐	☐
Updated settings / configuration information	☐	☐
As-built information, where applicable	☐	☐
Other required records	☐	☐

B.14 SERVICE PROVIDER COMPLETION DECLARATION

The Service Provider confirms that:

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

- a) the work recorded on this Job Card is a true reflection of the work performed;
- b) the labour and materials recorded relate to the authorised intervention;
- c) the work has been completed in accordance with the Contract, except for any limitations or outstanding matters expressly recorded herein;
- d) applicable testing has been undertaken; and
- e) the Site has been left in a safe and orderly condition.

Service Provider Representative

Name: _____

Designation: _____

Signature: _____

Date: _____

B.15 EMPLOYER'S SITE CONFIRMATION

The Employer's representative confirms, to the extent reasonably verifiable at Site, that the work recorded above was performed and that the stated equipment status has been noted.

Comments / outstanding matters:

.....
..

.....
..

Name: _____

Designation: _____

Signature: _____

Date: _____

B.16 COMPLETION CERTIFICATE

Task Order / intervention status:

☐ Complete

HESSEQUA MUNICIPALITY

**HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE
MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND
COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL
SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS**

- ☐ Complete subject to minor outstanding items
- ☐ Incomplete – further authorised work required
- ☐ Equipment remains out of service

Completion Date: _____

Defects / outstanding items, if applicable:

.....

.....

Employer's Authorised Representative

Name: _____

Designation: _____

Signature: _____

Date: _____

Important Note

Signature of this Job Card or Completion Certificate confirms the recorded work and Site status only. It shall **not**:

- a) authorise additional or previously unauthorised work;
- b) constitute certification of the amount payable;
- c) waive any defect, warranty or contractual obligation;
- d) constitute acceptance of quantities or rates not otherwise verified in accordance with the Contract; or
- e) amend the applicable Task Order or Contract.

HESSEQUA MUNICIPALITY

HES-TECH 27/2627: APPOINTMENT OF A PANEL OF SERVICE PROVIDERS FOR THE MAINTENANCE, REPAIR, REFURBISHMENT, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF ELECTROMECHANICAL EQUIPMENT AND ASSOCIATED CONTROL SYSTEMS IN THE HESSEQUA MUNICIPAL AREA FOR A PERIOD OF THREE (3) YEARS

ANNEXURE C

QUALITY CONTROL PLAN REQUIREMENTS

Contract No.: HES-TECH 27/2627
Contract Period: Three (3) Years

C.1 PURPOSE

This Annexure establishes the minimum requirements for quality control applicable to work undertaken under the Framework.

The extent of quality-control documentation required shall be proportionate to the nature, complexity, risk and value of the applicable Task Order.

The Employer does not require a separate formal Quality Control Plan for every routine maintenance or minor repair intervention.

C.2 APPLICATION

Quality control shall apply to all work undertaken under the Contract.

The required level of documentation shall generally be determined as follows:

Nature of Work	Minimum Quality Control Requirement
Routine servicing / minor maintenance	Job Card and applicable service/check sheets
Minor repair or component replacement	Job Card, inspection and applicable test records
Workshop repair / refurbishment	Workshop inspection and test records, including relevant measurements
Major repair / overhaul	Task-specific QCP where required by the Employer
New installation / major replacement	Task-specific QCP, inspection and test records
MCC / control-panel manufacture or major modification	Task-specific QCP and applicable inspection/test records
PLC / telemetry / control-system modification	Configuration, functional testing and applicable records
Major generator overhaul / refurbishment	Task-specific QCP and applicable inspection/test records
OEM / specialist work	Applicable OEM/specialist quality documentation
Other work	As specified in the Task Order

The Employer may increase or reduce the documentation requirement where reasonably appropriate to the particular work.

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C.3 MINIMUM QUALITY CONTROL REQUIREMENTS

Where applicable to the authorised work, quality control shall address:

- a) verification of the equipment or asset before work commences;
- b) confirmation of the authorised scope;
- c) verification of materials and components before installation;
- d) inspection of workmanship during execution;
- e) dimensional, mechanical and electrical checks;
- f) equipment settings and configuration;
- g) intermediate inspections where subsequent work will conceal or prevent inspection;
- h) applicable testing;
- i) rectification and re-testing of non-conforming work;
- j) final inspection;
- k) commissioning, where applicable; and
- l) completion records required by the Contract.

C.4 TASK-SPECIFIC QUALITY CONTROL PLAN

Where a formal QCP is required by the Task Order or instructed by the Employer, it shall identify, as applicable:

Item	Requirement
Task Order	Applicable Task Order reference
Site / Equipment	Asset or installation concerned
Scope	Work covered by the QCP
Applicable Standards	Standards, specifications and OEM requirements
Inspection Activities	Inspections required during execution
Tests	Tests and measurements required
Acceptance Criteria	Applicable acceptance requirements
Responsibility	Person responsible for each activity
Records	Records to be produced
Hold / Witness Points	Employer involvement, where specified
Non-Conformance	Method of recording and rectifying non-conforming work
Final Acceptance	Required completion / commissioning records

The format of the Service Provider's QCP need not be identical to this Annexure provided that the required information is clearly addressed.

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C.5 INSPECTION AND TEST PLAN

For substantial refurbishment, manufacture, new installation or other work where specifically required, the QCP may include an Inspection and Test Plan.

The following classifications may be used:

Code	Description
H	Hold Point – work shall not proceed beyond the identified point until released by the Employer where attendance has been required
W	Witness Point – the Employer shall be afforded reasonable opportunity to witness the activity
R	Review Point – applicable records or documentation shall be submitted or made available for review
S	Surveillance – the Employer may inspect the activity during execution

Hold and Witness Points shall only apply where identified in the Task Order, approved QCP or otherwise agreed for the particular work.

C.6 MATERIALS AND COMPONENTS

Materials and components incorporated into the Works shall comply with the Contract and applicable Task Order requirements.

Quality-control records shall, where relevant, provide traceability to:

- a) manufacturer;
- b) model or part number;
- c) rating or specification;
- d) serial number, where applicable;
- e) supplier;
- f) OEM documentation or certification, where applicable; and
- g) warranty information.

Substitutions shall be dealt with in accordance with the Contract and shall not be implemented merely through the QCP.

C.7 REPAIR AND REFURBISHMENT RECORDS

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For equipment repaired, overhauled or refurbished, records shall be appropriate to the nature of the work and may include:

- a) condition on receipt or removal;
- b) identified defects;
- c) dismantling findings;
- d) measurements and inspection results;
- e) components repaired or replaced;
- f) machining, balancing, alignment or other relevant work;
- g) electrical test results;
- h) settings or adjustments;
- i) final inspection and testing; and
- j) condition on completion.

Photographic records may be required where appropriate.

C.8 NON-CONFORMING WORK

Where work, materials or equipment do not comply with the Contract, applicable specification, approved Task Order or manufacturer's requirements, the Service Provider shall:

- a) identify the non-conformance;
- b) prevent unintended acceptance or incorporation where reasonably practicable;
- c) notify the Employer where the non-conformance is material;
- d) propose appropriate corrective action;
- e) rectify the non-conformance; and
- f) repeat the applicable inspection or testing.

A departure from the specified requirement shall not be accepted solely because it has been recorded in a quality document.

Any proposed deviation requiring Employer approval shall be dealt with through the applicable contractual approval procedure.

C.9 EMPLOYER INSPECTION

The Employer may inspect work at the Site, workshop or other place where work under a Task Order is being undertaken.

The Service Provider shall provide reasonable access for such inspection.

Inspection, witnessing, review or acceptance by the Employer shall not relieve the Service Provider of responsibility for compliance with the Contract.

C.10 TESTING AND COMMISSIONING

Testing and commissioning shall be undertaken in accordance with the applicable technical specifications, Task Order, statutory requirements, relevant standards and manufacturer's requirements.

Quality-control documentation shall record the tests applicable to the work and the results obtained.

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Detailed technical testing and commissioning requirements are contained elsewhere in the Contract and are not repeated in this Annexure.

C.11 QUALITY RECORDS

Quality records applicable to a Task Order may include:

- a) approved QCP or Inspection and Test Plan;
- b) inspection records;
- c) workshop repair reports;
- d) material or equipment certificates;
- e) test results;
- f) calibration certificates where applicable;
- g) OEM or specialist reports;
- h) non-conformance and corrective-action records;
- i) commissioning records;
- j) statutory certificates;
- k) photographs; and
- l) other records specified in the Task Order.

Required quality records shall form part of the Task Order close-out documentation.

C.12 RECORD RETENTION

The Service Provider shall retain quality records generated under the Contract for the period required by the Contract and applicable legislation and shall make such records available to the Employer when reasonably requested.

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ANNEXURE D

MONTHLY PERFORMANCE REPORT TEMPLATE

Contract No.: HES-TECH 27/2627

Contract Period: Three (3) Years

D.1 PURPOSE

This Annexure provides the standard monthly performance reporting format for Service Providers appointed under the Framework.

The report shall be used to record and monitor work allocated and completed, response performance, quality, outstanding work, defects and other matters relevant to the administration of the Contract.

Performance shall be assessed against the requirements of the Contract and the applicable Task Orders.

D.2 REPORTING PARTICULARS

Particular	Details
Reporting Month	
Contract Year	
Service Provider	
Applicable Lot(s)	
Service Provider Representative	
Employer's Representative	
Date of Report	

D.3 MONTHLY TASK ORDER SUMMARY

Lot	Task Orders Received	Completed	In Progress	Outstanding	Emergency Work
Lot 1					
Lot 2					
Lot 3					
Total					

Only Lots to which the Service Provider is appointed shall be completed.

D.4 TASK ORDER REGISTER

Task Order No.	Lot	Town / Site	Description	Type	Date Instructed	Date Completed / Status
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				Planned / Emergency		
				Planned / Emergency		
				Planned / Emergency		
				Planned / Emergency		
				Planned / Emergency		

Where a Task Order remains incomplete, the current status and anticipated completion date shall be stated.

D.5 EMERGENCY RESPONSE PERFORMANCE

Complete for Emergency Work undertaken during the reporting month.

Task Order No.	Lot	Date / Time Instructed	Date / Time Acknowledged	Arrival on Site	Required Response	Response Achieved	Compliant
							☐ Yes ☐ No
							☐ Yes ☐ No
							☐ Yes ☐ No

Monthly Emergency Response Summary

Indicator	Result
Total Emergency Task Orders	
Emergency Task Orders responded to within required period	
Emergency Task Orders outside required response period	
Response Compliance	%

Response Compliance = Emergency Task Orders responded to within the required period ÷ Total Emergency Task Orders × 100

Where no Emergency Task Orders were issued during the month, record **N/A** rather than 0%.

D.6 COMPLETION PERFORMANCE

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Indicator	Result
Task Orders due for completion during the month	
Task Orders completed within the required / agreed period	
Task Orders completed late	
Task Orders still outstanding beyond required / agreed period	
On-Time Completion	%

On-Time Completion = Task Orders completed within the required/agreed period ÷ Task Orders due for completion × 100

Where delays are attributable to approved scope changes, Employer instructions, unavailable Site access, approved OEM/specialist dependencies or other circumstances accepted under the Contract, these shall be recorded separately.

D.7 OUTSTANDING WORK

Task Order No.	Site	Outstanding Work	Reason	Responsible Party	Revised Expected Completion /

D.8 QUALITY AND DEFECTS

Indicator	Number
Completed Task Orders	
Defects identified following completion	
Repeat failures potentially related to previous work	
Defects rectified during month	
Defects outstanding at month-end	

Defect / Repeat Failure Register

Task Order / Job Card	Site Equipment /	Defect Repeat Failure /	Date Reported	Corrective Action	Status

A repeat failure shall not automatically be attributed to the Service Provider. Responsibility shall be determined in accordance with the Contract.

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D.9 QUALITY AND CLOSE-OUT DOCUMENTATION

Requirement	Required	Submitted	Outstanding
Job Cards	☐	☐	☐
Test / commissioning records	☐	☐	☐
Certificates of Compliance, where applicable	☐	☐	☐
OEM / specialist reports	☐	☐	☐
Warranty documentation	☐	☐	☐
Photographic records, where required	☐	☐	☐
As-built / configuration information, where required	☐	☐	☐
Other required records	☐	☐	☐

D.10 HEALTH, SAFETY AND ENVIRONMENTAL PERFORMANCE

Indicator	Number
Reportable incidents	
First-aid / minor incidents	
Near misses reported	
Safety non-conformances issued	
Environmental incidents / non-conformances	
Outstanding corrective actions	

Significant matters / corrective actions:

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This section does not replace any statutory incident notification, investigation or reporting requirement.

D.11 SERVICE PROVIDER CAPACITY AND AVAILABILITY

The Service Provider shall identify any matter that may materially affect its ability to perform work under the Contract during the following reporting period.

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Matter	Yes / No	Details / Corrective Action
Key personnel availability concern		
Emergency response capacity concern		
Plant / equipment availability concern		
Specialist / OEM dependency		
Material / spare availability concern		
Other material capacity constraint		

D.12 PERFORMANCE SUMMARY

Performance Area	Status	Comments
Emergency response	☐ Satisfactory ☐ Improvement Required ☐ N/A	
Completion of Task Orders	☐ Satisfactory ☐ Improvement Required ☐ N/A	
Quality of work	☐ Satisfactory ☐ Improvement Required	
Documentation / Job Cards	☐ Satisfactory ☐ Improvement Required	
Health and Safety	☐ Satisfactory ☐ Improvement Required	
Communication / Coordination	☐ Satisfactory ☐ Improvement Required	
Overall Performance	☐ Satisfactory ☐ Improvement Required	

The above assessment shall be based on the requirements of the Contract and actual performance during the reporting period.

D.13 CORRECTIVE ACTIONS

Where improvement is required, the following actions shall be recorded:

No.	Matter Requiring Action	Required Corrective Action	Responsible Party	Due Date	Status
1					
2					
3					

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Failure to implement required corrective action may be dealt with in accordance with the performance-management provisions of the Contract.

D.14 SERVICE PROVIDER COMMENTS

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D.15 EMPLOYER'S COMMENTS

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D.16 MONTHLY REVIEW

Service Provider Representative

Name: _____

Designation: _____

Signature: _____

Date: _____

Employer's Representative

Name: _____

Designation: _____

Signature: _____

Date: _____

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ANNEXURE E

FRAMEWORK CHANGE REQUEST AND APPROVAL FORM

Contract No.: HES-TECH 27/2627

Contract Period: Three (3) Years

E.1 PURPOSE

This Annexure establishes the formal procedure and standard record for requesting, assessing, approving, rejecting and recording material changes arising during administration of the Framework Agreement or an individual Task Order.

It shall be read together with C3.2: Framework and Panel Administration, C3.3: Task Order Procedure and Control, the applicable Task Order, the Contract Data and the other Contract Documents.

A Framework Change Request shall be used where a proposed change affects, as applicable:

- a) key personnel relied upon for tender eligibility, functionality or technical capability;
- b) evaluated workshops, facilities, plant, tools, test equipment or other resources;
- c) subcontractors, specialists, OEMs, manufacturers or system integrators requiring approval;
- d) the authorised scope or stage of a Task Order;
- e) the quantity or extent of authorised work;
- f) an approved material, component or item of equipment;
- g) an approved technical solution or methodology where the change has a material consequence;
- h) the authorised Task Order value or financial limit;
- i) the agreed programme or completion date; or
- j) any other material contractual requirement requiring the Employer's approval.

Submission of a Change Request **does not constitute authority to proceed** with the proposed change.

E.2 CHANGE REQUEST PARTICULARS

Particular	Details
Change Request No.	
Date Submitted	
Service Provider	
Applicable Lot	☐ Lot 1 ☐ Lot 2 ☐ Lot 3
Task Order No., where applicable	
Site / Facility, where applicable	
Asset / Equipment, where applicable	
Service Provider Representative	
Employer's Representative	

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E.3 CATEGORY OF CHANGE

Tick all applicable categories:

- ☐ Key personnel
- ☐ Evaluated resources / facilities
- ☐ Subcontractor / specialist / OEM / manufacturer / system integrator
- ☐ Task Order scope
- ☐ Quantity / extent of work
- ☐ Material / component / equipment
- ☐ Technical solution / methodology
- ☐ Task Order value / financial limit
- ☐ Programme / completion date
- ☐ Other material contractual requirement

Other, if applicable:

.....

E.4 EXISTING APPROVED POSITION

Describe the existing approved contractual position, resource, person, scope, material, technical solution, Task Order value, programme or other requirement affected by the proposed change.

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.....

Applicable Contract / Task Order reference:

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E.5 PROPOSED CHANGE

Describe clearly the change requested.

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.....

Reason and justification for the proposed change:

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.....

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E.6 SUPPORTING INFORMATION

The Service Provider shall attach sufficient information to enable the Employer to assess the proposed change.

Where applicable:

Supporting Information	Attached	N/A
Condition / Assessment Report	☐	☐
Photographs	☐	☐
Test results / measurements	☐	☐
Revised technical proposal	☐	☐
Drawings / specifications	☐	☐
CV of proposed replacement personnel	☐	☐
Qualifications / registrations / certificates	☐	☐
Specialist / OEM information	☐	☐
Supplier / specialist quotations	☐	☐
Detailed cost build-up	☐	☐
Revised programme	☐	☐
Other supporting information	☐	☐

Other:

.....

E.7 PERSONNEL / RESOURCE / SPECIALIST SUBSTITUTION

Complete where the change concerns evaluated personnel, facilities, resources, subcontractors, specialists, OEMs, manufacturers or system integrators.

Particular	Existing Approved Resource	Proposed Replacement
Person / organisation / resource		
Role / function		
Qualification / capability		
Registration / certification		
Relevant experience		
Tender evaluation criterion affected, if applicable		

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The Service Provider confirms that the proposed replacement provides capability **equal to or better than** that upon which its appointment was based.

Where the existing person or resource contributed to functionality evaluation, the Employer may reassess the proposed replacement against the applicable original tender criterion.

No substitution shall be approved where it would cause the Service Provider to cease satisfying a mandatory requirement, fall below an applicable minimum functionality threshold or materially reduce the capability upon which its appointment was based.

E.8 TECHNICAL IMPLICATIONS

Describe the technical implications of the proposed change, including effects on performance, reliability, compatibility, safety, operation, maintainability, warranties, statutory compliance or other relevant requirements.

.....
.....
.....

Does the proposed change alter the originally approved technical solution?

☐ No ☐ Yes

If yes, explain:

.....

E.9 FINANCIAL IMPLICATIONS

Particular	Amount excl. VAT
Current authorised Task Order value	R
Value of this Change Request	R
Revised Task Order value if fully approved	R

Pricing basis:

- ☐ Accepted Schedule of Rates
☐ Measured quantities
☐ Approved supplier / material cost plus accepted mark-up
☐ Approved specialist / OEM cost plus accepted mark-up
☐ New / derived rate in accordance with the Contract
☐ Secondary competitive price
☐ No financial implication
☐ Other: _____

Supporting calculations and quotations shall be attached where applicable.

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The Service Provider acknowledges that submission or technical acceptance of a proposal does not constitute approval of additional expenditure.

E.10 PROGRAMME IMPLICATIONS

Current required / approved completion date: _____

Proposed revised completion date: _____

Extension requested: _____ calendar / working days

Reason:

.....
.....

☐ No programme implication.

Approval of additional expenditure shall not automatically constitute approval of an extension of time.

E.11 SERVICE PROVIDER DECLARATION

The Service Provider confirms that:

- a) the information contained in this Change Request is complete and accurate to the best of its knowledge;
- b) the proposed change has not been implemented unless expressly permitted under the emergency provisions of the Contract;
- c) no additional expenditure will be incurred in anticipation of approval;
- d) all reasonably foreseeable technical, financial and programme implications have been disclosed; and
- e) the Service Provider understands that submission of this form does not constitute approval.

Service Provider Representative

Name: _____

Designation: _____

Signature: _____

Date: _____

E.12 EMPLOYER'S TECHNICAL ASSESSMENT

Technical recommendation:

- ☐ Recommended
- ☐ Recommended subject to conditions
- ☐ Not recommended
- ☐ Further information required

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Comments / conditions:

.....
.....
.....

Employer's Technical Representative

Name: _____

Designation: _____

Signature: _____

Date: _____

E.13 FINANCIAL / CONTRACTUAL ASSESSMENT

Complete where the change has a financial, contractual or programme implication.

Amount requested: R _____ incl. VAT

Amount recommended: R _____ incl. VAT

Revised Task Order value recommended: R _____ incl. VAT

Programme adjustment recommended: _____

Comments / conditions:

.....
.....

The assessment recorded in this section is a recommendation only and does not constitute authority to proceed unless the person completing the section also holds the required delegated authority and expressly approves the change under E.14.

E.14 EMPLOYER'S DECISION AND APPROVAL

Decision:

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- ☐ Approved as requested
- ☐ Approved in part
- ☐ Approved subject to conditions
- ☐ Rejected
- ☐ Further information required
- ☐ Withdrawn / superseded

Approved scope/change:

.....
.....

Approved financial effect: R _____ incl. VAT

Revised authorised Task Order value: R _____ incl. VAT

Approved programme adjustment: _____

Revised completion date: _____

Conditions of approval:

.....
.....

Effective date of approved change: _____

Employer's Authorised Representative

Name: _____

Designation: _____

Delegated authority / reference, where applicable:

Signature: _____

Date: _____

E.15 IMPORTANT CONDITIONS

1. A Change Request becomes effective only when approved in writing by a person having the necessary authority on behalf of the Employer.
2. Technical acceptance does not constitute financial approval.

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3. Approval of expenditure does not authorise work beyond the scope expressly approved.
4. No Service Provider employee, municipal employee, consultant or other person may authorise expenditure beyond their delegated authority.
5. Except for the minimum emergency action expressly permitted by the Contract, work undertaken before approval remains at the Service Provider's risk and shall not become payable merely because it was subsequently reported.
6. An approved Change Request shall be read as part of the applicable Task Order but shall **not constitute a new Task Order or a separate contract**.
7. Approved changes shall be reflected in the applicable Task Order records, Change Register, Job Cards, reports, measurements, invoices and close-out documentation.

E.16 CHANGE REGISTER ENTRY

Particular	Details
Change Request No.	
Lot	
Task Order No.	
Category	
Date Submitted	
Value Requested	R
Value Approved	R
Decision	
Decision Date	
Approving Authority	
Revised Task Order Value	R
Revised Completion Date	
Register Updated By	
Date Register Updated	