

**SUPPLY AND INSTALLATION
of the
GENERATOR SERVICES
for the
NEW SPC BACKUP GENERATOR
at
NABUA, SUVA, FIJI
for the
PACIFIC COMMUNITY (SPC)**

PREPARED FOR:

THE PRINCIPAL – PACIFIC COMMUNITY (SPC)

DATED:

AUGUST 2023

PROJECT NUMBER AND PROJECT NAME:

7999.1 – NEW SPC BACKUP GENERATOR



**BUILDING SERVICES
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**GENERATOR SERVICES
NEW SPC BACKUP GENERATOR
NABUA, SUVA, FIJI
PACIFIC COMMUNITY (SPC)**



TABLE OF CONTENTS

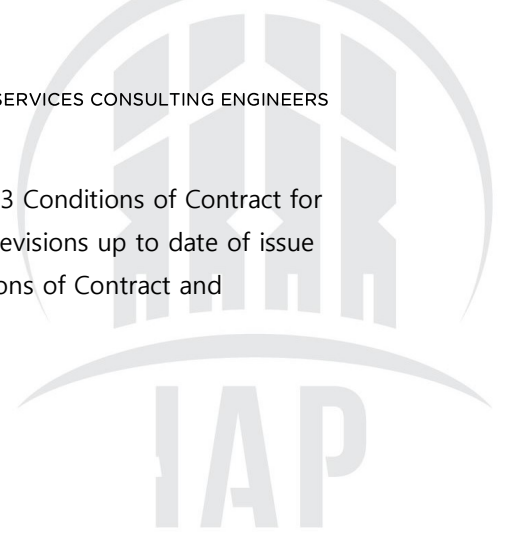
SECTION 1	GENERAL CONDITIONS OF CONTRACT	1
SECTION 2	SPECIAL CONDITIONS OF CONTRACT	2
SECTION 3	PRELIMINARY AND GENERAL.....	6
SECTION 4	INTRODUCTION	12
SECTION 5	SCOPE OF WORK.....	15
SECTION 6	STANDBY DIESEL GENERATOR	19
SECTION 7	TESTING AND COMMISSIONING	28
SECTION 8	MAINTENANCE AND SERVICING	30

APPENDICES

APPENDIX I	TENDER FORM
APPENDIX II	SUMMARY OF TENDER
APPENDIX III	SCHEDULE OF TECHNICAL DATA
APPENDIX IV	SCHEDULE OF RATES
APPENDIX V	TENDER CHECKLIST

SECTION 1 GENERAL CONDITIONS OF CONTRACT

General Conditions of Contract shall be New Zealand Standard NZS3910:2013 Conditions of Contract for Building & Civil Engineering Construction and any other Amendments and Revisions up to date of issue of the specification here under, and shall be qualified by the Special Conditions of Contract and Specification hereunder.



SECTION 2 SPECIAL CONDITIONS OF CONTRACT

Contract for Generator services for the New SPC Backup Generator at Nabua, Suva, Fiji Islands. The General Conditions of Contract are NZS3910:2013.

GENERAL CONDITIONS OF CONTRACT

2.1.0 SCHEDULE TO GENERAL CONDITIONS OF CONTRACT

(Note that the Section and Clause numbers in brackets refer to Section and Clause Numbers in NZS3910:2013).

2.1.1 PRINCIPAL (Clause 1.2)

The Principal is the PACIFIC COMMUNITY (SPC).

2.1.2 SEPARABLE PORTIONS (Clause 1.2, 10.2)

This Contract is not a 'Separable Portion'.

2.1.3 CONTRACT TYPE (Clause 2.1)

This Contract is a Lump Sum Contract.

2.1.4 CONTRACTOR'S BOND (Clause 3.1)

A Contractor's bond is not required.

2.1.5 PRINCIPAL'S BOND (Clause 3.2)

A Principal's bond is not required.

2.1.6 POSSESSION OF THE SITE (Clause 5.4)

The Contractor shall be given limited possession of the site seven (7) working day following the award of the Contract. Limited possession is based on the areas required as per the approved phasing of the work as approved by the Principal.

2.1.7 ENGINEER (Clause 6.1.2)

The Engineer shall be Warren Yee whose professional qualifications are BE (MECH), MFIE, M.IPES, MEngNZ, M.AIRAH, M.ACES, MIEAust, CPEng, NER (MECH), APEC Engineer, IntPE (Aus) of Irwin Alsop Pacific Pte Limited, Building Services Consulting Engineers, 19 Domain Road, Suva or such other person that the Engineer shall authorize in writing.

2.1.8 INSURANCE (Clause 8)

The Contractor shall insure as provided in Clauses 8.3 and 8.5. The successful Tenderer shall submit a copy of each policy for approval immediately upon signing of the Contract. No work may be started on site until the various Insurance Policies have been approved by the Engineer.

2.1.9 CONTRACTOR TO INSURE CONTRACT WORKS AND MATERIALS

- i. Public Liability Insurance shall be affected for a minimum amount of five hundred thousand dollars (\$500,000.00) for each and every claim. The number of claims on the project shall be unlimited. (See also Clause 8.6.1 for additional requirements).
- ii. The Contractor shall insure for workers compensation and shall list the amounts and conditions insured against.
- iii. The Contractor shall provide Contractors All Risk insurance for a minimum of \$500,000.00.

2.1.10 DUE DATE FOR COMPLETION (Clause 10.2)

The period to be used for calculating the Due Date for completion of the Contract is to be advised by the Principal in consultation with the Engineer.

2.1.11 LIQUIDATED DAMAGES (Clause 10.5)

No liquidated damages is applicable.

2.1.12 BONUS (Clause 10.6)

No bonus payment is applicable.

2.1.13 PERIOD OF DEFECTS LIABILITY (Clause 11)

The period of defects liability shall be 12 months from the date of Practical Completion of the whole of Contract Works and handed over.

Any material or workmanship proving defective during that time shall be replaced or repaired as directed by the Engineer. This shall include the repair, replacement and/or reinstatement of the defects and other portions of the project damaged due to defects in work under this Contract.

The whole of the work must be completed and left in working order and shall perform the intended functions to the satisfaction of the Engineer.

The Contractor shall supply all labour, instruments, tools and materials necessary for the whole of the inspection and maintenance work during the maintenance period.

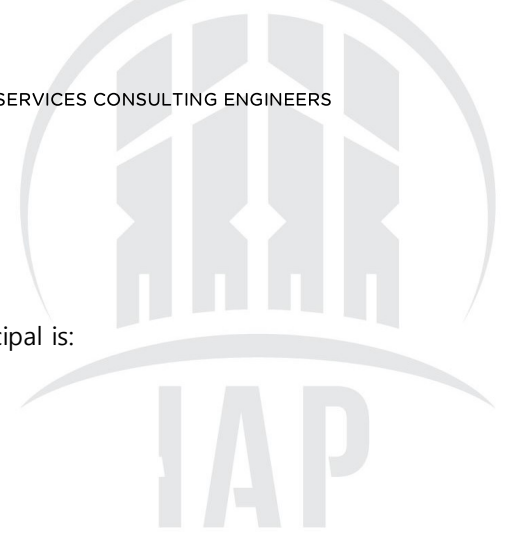
2.1.14 PROGRESS PAYMENT CERTIFICATES (Clause 12)

Progress claims shall be made as per the schedule of prices and shall take the following forms:

- a. The Contractor shall submit a claim showing full value of work completed and with all retention deduction shown.
- b. The Engineer shall evaluate the claim and submit a report to the Principal.
- c. The Engineer shall check this and issue a progress payment certificate.
- d. The Contractor shall issue a Tax Invoice for the amount shown on the certificate.

2.1.15 RETENTION MONIES (Clause 12.3)

- a. Retention on Progress Claims shall be 5%.
- b. The percentage to be retained during the Defects Liability Period shall be 2.5%.



2.1.16 COST FLUCTUATIONS (Clause 12.8)

Cost fluctuations shall not be paid.

2.1.17 SERVICE OF NOTICES (Clause 15)

For the purpose of service of notices, the postal address of the Principal is:

PACIFIC COMMUNITY (SPC)
PRIVATE MAIL BAG
SUVA
FIJI
TELEPHONE: +679 337 0733

and that of the Engineer is:

IRWIN ALSOP PACIFIC LTD
19 DOMAIN ROAD
SUVA
P O BOX 3872
SAMABULA
TELEPHONE NUMBER: 3302619
FACSIMILE NUMBER: 3302161

2.2 PAYMENT

Payment shall be in terms of Clause 12 of NZS 3910:2013.

2.3 SUB-CONTRACTORS

Special Conditions of Contract shall apply to all sub-Contractors. All items of Preliminary & General shall be read and allowance made by sub-Contractors.

Sub-Contractors shall be bound to the Main Contractor in the same way and terms as the Main Contractor is bound to the Principal.

2.4 ALTERATIONS TO WORK

The conditions of NZS 3910:2013 Clause 9 - Variations shall apply. Variations to the Contract shall be carried out only with the prior written approval of the Engineer.

2.5 CONTRACT PROGRAMME

The Contractor shall, within two weeks of commencement of the works, prepare a building programme showing the proposed sequence of the work of all trades, the start and finish date for each trade and section of the work, and shall throughout the contract, update the programme in accordance with current progress, in time for each site meeting.

A staging plan will be made available for Contractor to plan his programme and update as Stages are completed and handed over.

2.6 EXTENSION OF TIME

The conditions of NZS 3910:2013 Clause 10.3 shall apply.

2.7 STANDARDS

The specification makes reference to various Standards. These documents are widely known and are not reproduced here.

2.8 DOCUMENTS ON SITE

Clause 2.8.3 of NZS3910:2013 shall apply.

2.9 ALTERATION IN DESIGN REQUIREMENTS

The Principal reserves the right to alter designs in any way which may become necessary for the utility and serviceability of the work and the Contractor shall take all steps to comply without delaying completion.

2.10 STATUTES & REGULATIONS

If any NZ statute or regulation is referred to in these documents and there is a Fiji equivalent, that Fiji / Infrastructure Fiji statute or regulation shall apply.

2.11 SITE INFORMATION

All Tenderers are to request information they need on the site from the Engineers to familiarise themselves with the scope and extent of the work and to determine site limitations. Failure to obtain site information is not deemed to be sufficient grounds for variation claims.

SECTION 3 PRELIMINARY AND GENERAL

3.1 GENERAL DESCRIPTION

The proposed generator location is situated on site at New SPC Backup Generator at Nabua, Suva, Fiji Islands.

3.1 TENDERER TO INFORM HIMSELF FULLY

Each Tenderer shall inspect and examine the site, its surroundings, and shall satisfy himself before submitting his tender, as to the nature of the ground and subsoil, the form and nature of the site, the quantities and nature of the works and materials necessary for the completion of the Works, and the means of access to the site, the accommodation he may require, the availability, conditions and rates of pay of labour and in general shall himself obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect his Tender.

In particular each Tenderer shall make all allowances he deems necessary to ensure the Works are completed within the Contract time, including all over time, double time, weekend work and other incidental allowances as required.

Where a Tenderer has any doubt as to the meaning of any portion of the Works, the Tenderer is to seek clarity from the Principal immediately. The Principal would then advise all Tenderers of this clarification and the Principal's response. If a Tenderer has any doubt as to the meaning of any portion of the Works, he shall, when submitting his tender include a statement of the interpretation upon which he relies and upon which his tender has been prepared and submitted.

The Tenderers are to strictly comply with the tender documents and any Tenderer not complying shall have their documents returned as 'NOT COMPLIANT TO TENDER SPECIFICATIONS.'

Tenderers also have the chance to propose a variant solution to the design specifications.

3.2 DRAWINGS AND DOCUMENTS

The Contract documents consist of this document and drawings attached as listed in the drawing register supplied.

The drawings and specification shall be carried out to the letter and are intended to be cooperative, i.e. any work shown on the drawings and not mentioned in the specification or work or materials herein specified or described but not shown on the drawings will be executed by the Contractor as if specifically shown or mentioned by both.

3.3 OWNERSHIP OF DRAWINGS

Drawings, specification and copies thereof, which are furnished to the Contractor, are the property of the Principal. They are not to be used on other work and are to be returned to the Principal if so requested except for one copy which may be retained by the Contractor as part of the Contract

Documents. The unsuccessful tenders are to return all documents in its entirety to the Principal and not keep any copies for security and confidentiality reasons.

3.4 INFERRED WORK

All work reasonable to be included as fundamentally necessary for the proper erection and completion of the Works shall be deemed to be included, and no variation to the Contract Sum will be allowed for any such items.

3.5 AMBIGUITY

Any errors or discrepancies between the drawings and specification that are notified in writing by the Tenderer to the Engineer at the time of tendering shall be interpreted by the Engineer in accordance with the Contract.

3.6 TEMPORARY SERVICES & CONVENIENCES

The Contractor shall provide and arrange for all temporary services required for the works.

The Contractor shall be able to use water and electrical services in the existing premises during the construction of the works. For sanitary services the Contractor shall provide their own portaloos.

The Principal will provide all power and water necessary and power for the construction and amenities for all Contractors, free of charge. These services are located close to the area of work and the Contractor shall keep all services in a clean and tidy state. The Contractor shall be responsible for their own telephone.

On completion of the works all temporary installations shall be removed and made good and all toilets etc cleaned and restored to the condition prior to the contract commencement.

3.7 NOTICES & FEES

The Contractor shall observe and adhere to all by-laws and give all Notices. Similarly he shall comply with all Regulations. The Contractor shall arrange all inspections and approvals by such Authorities like EFL and Fijian Competition & Consumer Commission as may be necessary.

3.8 ATTENDANCE UPON TRADES

The Contractor shall allow for the co-ordination of all trades, sub-Contractors and Principal's Separate Contractors (if these occur from time to time) and he shall ensure their performance at all times.

3.9 CO-OPERATING WITH THE PRINCIPAL & OTHER CONTRACTORS

The Contractor shall allow access to the Principal and shall allow for the normal day to day operations of the Principal to continue unhindered.

The Contractor shall allow for all access and co-operation required and, apart from default by the Principal, he will have no claim for time extension or extra payment because of the access he provides.

3.10 SAFETY REQUIREMENTS

The Contractor shall comply with the requirements of all relevant Acts, Statutes or regulations relating to construction and shall observe and abide by all safety requirements and procedures of the Principal inclusive of the Health and Safety At Work Act.

3.11 HOURS OF WORK

The Contractor shall provide a schedule stating the hours of work when submitting their tender. Hours of work likely to be approved by the Principal is generally 8am till 6pm on working days Monday to Fridays and Saturdays with no work on Sundays. If the Contractor requires to work outside of these hours, he shall make specific application in writing no less than 2 full working days before additional access is needed. State the areas involved, the periods for which additional access is required in each area, and the special circumstances necessitating the application. Approval will be depend on the special circumstances and will be subject to availability of the Principal's supervisory and/ or security personnel for the particular areas.

3.12 PROTECTION IN GENERAL

Care shall be taken to protect all existing services, plant, furniture, doors, paintwork and other features from any damage. The Contractor shall be liable for any damage to the building structure or components.

3.13 JOB MEETINGS

After the Contract has been awarded, the Contractor shall attend all meetings arranged at times and locations approved by the Engineer. All parties concerned shall attend, to ensure proper co-ordination of project work.

A site induction meeting will be conducted for the Contractor with sub subcontractors to familiarize the staging of works and the permitted access to zones during SPC operating hours.

Minutes of those meetings shall be recorded by the Engineer and shall be circulated to all parties without undue delay.

3.14 CLEAN UP & REINSTATEMENT

Upon completion of the Contract, the Contractor shall remove all debris and surplus materials and the whole area around the completed works shall be tidied up so as to require no further work before he leaves the site. The Contractor shall maintain the site in a tidy state as determined by the Principal during the period of the Contract, for example; loose materials to be tidily stored in a container so it does not hinder customers, staff and security inspections.

Any damage caused by the construction, traffic or other works shall be made good, and any reinstatement or repairs required to services or building components and services shall be carried out to the satisfaction of the Engineer.

All work carried out after hours should be clean and left as is before works started on a nightly basis.

3.15 STORAGE ON SITE

Limited storage space is available on site. The Contractor is to arrange his own storage off site if it cannot be accommodated on site. Any damages found to equipment stored off site are the responsibility of the Contractor.

3.16 DUTY CONCESSION

No special duty concessions are applicable on this project.

3.17 ATTENDANCE REGISTER

All personnel involved in executing the works are required to sign attendance registers.

3.18 IDENTITY TAGS

The Contractor shall provide identity tags for all workmen under his control.

3.19 WORKS SITE ACCESS

The Contractor shall provide at all times during execution of the works and defects liability period proper means of access, for the inspection or measurement of the works by the Engineer or his representative. Access to the site shall be via signing of the attendance register at the Security Reception.

3.20 WORK SEQUENCE / EMPLOYERS CONVENIENCE

The Contractor's attention is particularly drawn to the fact that demolition and new works shall be carried out at all times and sequence so that the movements of the Principal's staff will be unhindered during the whole of the progress of the Contract and must be allowed to do so without inconvenience or interference. The Contractor, in addition to the foregoing, shall be cognizant of the probable necessity of carrying out certain other parts of the construction etc at times to suit the interests of the Principal's staff.

3.21 NOISE CONTROL

The Contractor shall take measures to minimise construction and demolition noise and pollution which could cause nuisance to the neighboring buildings. The SPC office is to remain in operations during the construction period.

3.22 ADVERTISING

No boards or bill posting will be permitted upon any part of the site. The Contractor shall immediately remove or obliterate, according to the method of defacement and surface material involved any unauthorised bill posting or graffiti which may appear upon any part of the site.

3.23 OCCUPATIONAL HEALTH AND SAFETY

The Contractor shall strictly observe and comply with the Occupational Health & Safety Regulations in Fiji and will be required to comply with the Employers Health and Safety Procedures and requirements as well.

3.24 CARE OF THE WORKS

The Contractor shall keep all persons (including those employed by the Sub-Contractors) under control and within the boundaries of the site and the construction area. He will be held responsible for the care of the works generally until their completion; including all work executed and materials, goods and plant (including those of the Sub-Contractors and suppliers) deposited on site; together with all risks arising from the weather, carelessness of work people, damage or loss by theft or any other cause, and shall make good at his own expense all such loss or damage.

3.25 MATERIALS, GOODS AND WORKMANSHIP

Materials, goods and workmanship shall be of the best quality of their respective kinds. The Contractor shall carry out everything necessary for the proper execution of the works, whether or not when on the drawings or described in the specification, provided that the same may be reasonably inferred there from.

Figured dimensions shall be followed in preference to scaled dimensions and all dimensions and particulars shall be taken from the actual work where possible.

Any errors in dimensioning or inconsistencies found in the drawings and specification shall be reported to the Engineer immediately for interpretation and/or instruction. The Contractor shall be responsible for any problems which may arise due to his failure to so notify the Engineer about any such error or discrepancy.

3.26 EXISTING SERVICES

As far as possible, existing services have been indicated on the drawings. The Contractor shall be responsible for locating accurately the position of such services and he shall consult with the controlling authorities concerned and obtain from the authorities such drawings as are available and arrange for the authorities representative to supervise the exploratory work. The Contractor shall be responsible for the cost of making good any damage done, and for all new connections to existing services.

3.27 SAFETY AND PROTECTION OF PROPERTY

The Contractor shall take all steps necessary to ensure the safety of his employees and all other persons who visit and/or occupy the site. Protect operators from dangerous machinery, provide safety lines and rails where required and ensure that no electrical equipment is used unless powered via an effective isolating transformer.

Comply with all safety regulations of Energy Fiji Limited.

Protection of the Principal's property is to be maintained at all times. Failure to do so will incur the Contractor with costs of making good damage or loss.

3.28 CLEARING AWAY AND COMPLETION

The Contractor shall, on a daily basis, ensure that the site is cleared up and that all debris is removed at regular intervals.

At the completion of the Contract, the Contractor shall clean and dust all areas affected by the works, wash down and polish all hard floor surfaces, vacuum all carpets and clean all fittings and fixtures. He shall clean all glass, and wipe down all surfaces and shall leave the areas in a clean condition fit for occupation.

At the completion of the Contract, the Contractor shall also remove all equipment, sheds and temporary structures, reticulation, fencing, rubbish and debris from the site.

All such cleaning and clearing up shall be to the Engineer's approval, and prior to Practical Completion.

SECTION 4 INTRODUCTION

4.1 GENERAL

This Specification details the requirements for the supply, installation, testing and commissioning of the Generator Services installation for the New SPC Backup Generator at Nabua, Suva, Fiji Islands.

This Specification is to be read in conjunction with all relevant and associated reference documents and drawings that are part of this project.

4.2 TENDER SUBMITTAL

The tender for the supply and installation of the services shall be marked and addressed as the following:

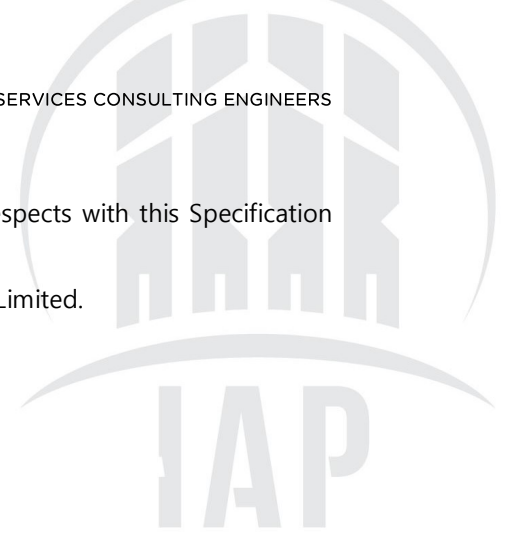
NEW SPC BACKUP GENERATOR, NABUA, SUVA, FIJI

4.3 DEFINITIONS AND ABBREVIATIONS

The following definitions and abbreviations are applicable to this project:

NEW SPC BACKUP GENERATOR, NABUA, SUVA, FIJI

TERMS	DEFINITION
"Project"	NEW SPC BACKUP GENERATOR, NABUA, SUVA, FIJI
"Principal"	PACIFIC COMMUNITY (SPC)
"Project Manager"	IRWIN ALSOP PACIFIC PTE LIMITED
"Architect"	-
"Civil and Structural Engineer"	-
"Quantity Surveyor"	-
"Services Engineer", "Building Services Engineer"	IRWIN ALSOP PACIFIC PTE LIMITED
"Tenderer", "Sub - contractor".	The company bidding for and subsequently being accepted to carry out the works outlined in this Specification.
"Contract", "Sub-Contract"	The works included in this Specification and the accompanying engineering drawings.
"Approved"	Subject to the inspection, investigation and written approval of the Engineer before being implemented into the Contract works.
"Indicated"	As shown on the Contract drawings and specifications, and by notes, figures, sketches or writing, thereon or by any combination thereof.
"Supply and install"	Whether or not the words "supply and install" appear in this Specification or on the drawings, unless clearly excluded, all items of equipment for the complete installation are required and shall be supplied and installed.
"Equivalent"	Any system/ equipment meeting or exceeding the stated Standard and Regulatory Authority requirements.



4.4 LOCAL AUTHORITY REQUIREMENTS

The work carried out by the Generator Contractor shall comply in all respects with this Specification and:

- a. Local Electricity Public Utility Authority regulations – Energy Fiji Limited.
- b. Fijian Competition & Consumer Commission.
- c. The Health and Safety at Work Act.
- d. The National Building Code of Fiji.
- e. Current issue of relevant Australian and New Zealand Standards.
- f. Ministry of Environment.
- g. Any other regulations that apply directly or indirectly to such installations in the location.

The Generator Contractor shall be responsible for the liaison and making applications to relevant local Authority including Fijian Competition & Consumer Commission for permits to carry out the work involved, and pay all associated fees and charges in respect of the work involved as required by the local governing Authorities.

Certificates shall be obtained from the appropriate local Authority indicating satisfactory completion of services and handed over to the Building Services Engineer before application for final payment.

Variations to the installation found necessary to obtain approval shall be brought to the notice of the Building Services Engineer immediately.

It is the responsibility of the Generator Contractor to arrange for all necessary inspections and rectify any defects and deficiencies arising within the installation, to the full satisfaction of the above-mentioned local Authority and the Building Services Engineer.

4.5 ADOPTED STANDARDS AND CODES OF PRACTICE

The work carried out by the Generator Contractor shall comply in all respects with this Specification and the following Standards:

- a. The National Building Code of Fiji.
- b. AS/NZS 3000 Electrical Installations.

Standards and Codes shall be recent issues, including the latest amendments and revisions, to be used during the supply and execution of the works.

Alternative comparable Standards and Codes which can be demonstrated to be equivalent or exceeding the requirements of stated the Standards shall only be considered as alternatives upon approvals sought from the Building Services Engineer.

Unless otherwise stated, the equipment and installation standards shall conform in every manner to the requirements of the latest issue of appropriate and approved Australian and New Zealand Standards.

4.6 ASSOCIATION WITH OTHER TRADES

The Generator Contractor shall coordinate, as applicable, all works by other trades, including all interfaces to make the systems fully functional and operate as specified.

This shall include, but not be limited to: Architectural Works, Landscaping Works, Structural Works, Extra Low Voltage Services, Fire Protection Services, Hydraulics Services, Mechanical Services, Telecommunications Services and Vertical Transportation Services.

The Generator Contractor shall at all times liaise with other Contractors and the Building Services Engineer to ensure that the works are carried out in a timely, orderly manner so as to minimise risks, delays, disturbances, and damage to any equipment or property. Any inconsistencies between various trades and associated drawings shall immediately be reported to the Building Services Engineer.

4.7 OCCUPATIONAL, HEALTH AND SAFETY

The Generator Contractor shall ensure that proper safety is maintained on site at all times during the course of the project as per the Health and Safety at Work Act and the requirements of the Labour Department.

The Generator Contractor's personnel shall be in proper safety gear and equipment including, but not limited to, hard hats, safety boots, safety gloves, safety goggles, ear muffs/ plugs, dust masks, proper harness, etc.

The site personnel are to ensure that proper and safe handling of all equipment is maintained at all times, to avoid injury/ danger to one's self and to others.

SECTION 5 SCOPE OF WORK

5.1 GENERAL

The scope of works comprises the supply, installation, testing, commissioning, maintenance and defects liability services of materials, labour and equipment for the complete Generator Services installation for the New SPC Backup Generator at Nabua, Suva, Fiji Islands.

This shall include all necessary work required to implement the intent and meaning of this Specification and associated drawings.

Whether or not the words "supply and install" appear in this Specification or on the drawings, unless clearly excluded, all items of equipment for the complete installation are required and shall be supplied and installed.

EXTENT OF WORK (OPTION ONE)

The work shall include but will not be limited to the following main items:

- a. Supply and installation one of 500 kVA standby rated diesel generator **enclosed set** complete with weatherproof acoustic surround and removeable panel doors.
- b. Supply and installation of generator automatic transfer switch (ATS).
- c. Supply and Installation of lockable cabinet with generator tools. Refer Clause 6.4.12
- d. Supply and Installation of stainless steel exhaust system (including support system for exhaust and make good of building walls)

EXTENT OF WORK (OPTION TWO)

The work shall include but will not be limited to the following main items:

- a. Supply and installation one of 500 kVA standby rated diesel generator **open set**.
- b. Supply and installation of generator automatic transfer switch (ATS).
- c. Supply and Installation of lockable cabinet with generator tools. Refer Clause 6.4.12
- d. Supply and Installation of stainless steel exhaust system (including support system for exhaust and make good of building walls)

ADDITIONAL WORK

The work shall include but will not be limited to the following main items:

- a. Coordination work with Energy Fiji Limited.
- b. Coordination works with other Trades.
- c. Provision of Shop Drawings.
- d. Testing, Commissioning, Warranty and Preventative Maintenance of the complete Generator installation.
- e. Provision of As Installed drawings.
- f. Provision of Installation and Maintenance Manuals.
- g. Maintenance and attendance work during the Defects Liability Period (12 months).

5.2 WORK BY OTHERS

The following work will be provided by others:

5.2.1 ARCHITECTURAL, STRUCTURAL AND CIVIL WORKS IN ASSOCIATION (NOT APPLICABLE)

The Building Contractor shall provide cut-out / penetrations exceeding 100mm in diameter and/or 100mm x 100mm square along walls, partitioning, ceiling, roof, floors and wherever required upon approvals sought from the Structural Engineer.

Penetrations which are lesser than the stated dimensions above shall only be made by the Generator Contractor upon proper permission / approvals being sought from the Building Contractor and Structural Engineer.

These penetrations shall be sealed in an approved manner by the Generator Contractor, upon completion of the required installation.

Note that all penetrations shall be executed in a manner that maintains the fire rating, acoustic and security integrity of the walls, partitioning, ceiling, roof, floors, etc.

5.3 COMPLIANCE WITH RULES, REGULATIONS AND CODES

All work performed under this Section of the Contract shall be carried out by the Generator Contractor and shall comply in all respects with this Specification, Regulations and By-Laws of the appropriate Authorities including:

- a. The Building Regulations applying to the project.
 - b. Current issue of relevant Australian and New Zealand Standards.
 - c. The National Building Code of Fiji.
 - d. Local Public Utility Authority Regulations – Energy Fiji Limited.
 - e. Ministry of Labour OHS Regulations.
 - f. Local Authority Council.
 - g. Fijian Competition & Consumer Commission.
 - h. Any other regulations that apply directly or indirectly to such regulations in the locations.
- Materials, manufactured articles and workmanship shall conform to the relevant Standards. Where Authorities so require, items shall be stamped with their approval.

5.4 DRAWINGS

The scope of work is shown on the Generator Services drawings (G01 to G02 inclusive) which should be read in conjunction with this Specification. Refer to the Architectural, Structural and Generator drawings for the exact positions of fixtures, fittings, plant equipment, sundry appliances and structural elements. Confirm dimensions on site before commencing work.

The following drawings shall form part of the Contract:

DWG#	SHEET TITLE	SCALE
G01	SCHEDULE OF DRAWINGS / LEGEND / SPECIFICATION / SCOPE OF WORKS / GROUND FLOOR PLAN - LIGHTING & POWER LAYOUTS	AS SHOWN
G02	PROPOSED MAIN SINGLE LINE DIAGRAM & SCHEDULE OF CABLING	NTS

5.5 SAMPLES

The Generator Contractor will be required to submit for approval by the Building Services Engineer, samples of cabling, distribution boards, circuit breakers and other fittings and materials to be used in the works.

5.6 AUTHORITIES AND FEES

Make application to the Energy Fiji Limited for permits to carry out the work. The Generator Contractor shall submit for approval by the Building Services Engineer, all Energy Fiji Limited fees and charges in respect of the work involved. The Energy Fiji Limited fees will be paid by the Client. The Consumer Deposit will be paid by the Client.

Make application to the Fijian Competition & Consumer Commission. The Generator Contractor shall submit for approval and pay all relevant fees associated with the Fijian Competition & Consumer Commission.

5.7 APPROVAL CERTIFICATE

Provide the Building Services Engineer with a copy of the signed and stamped Energy Fiji Limited Completion Certificate prior to the commencement of the Defects Liability Period.

5.8 SHOP DRAWINGS

Provide for approval shop drawings of the Generator Services connections and construction details, and schematics for all associated equipment. Confirm all dimensions on site.

Supply shop drawings in SI Metric to completely detail the works as follows:

ITEM	DESCRIPTION	INFORMATION REQUIRED	SET
1.	Generator	Construction and Layout Details	3
2.	Automatic Transfer Switch	Construction and Layout Details	3

Submission to the Building Services Engineer in the first instance shall be made not less than two (2) weeks prior to approval in principle is required.

Examination by the Building Services Engineer shall not diminish the Generator Contractor's responsibility for co-coordinating and checking shop drawings nor the Generator Contractor's responsibility for correctness of his work. At the completion of the project, update all drawings to indicate as installed details. All drawings are required to be provided in electronic (AutoCAD 2014 version or approved equivalent) and paper copy format (3 set).

The Generator Contractor shall submit samples or brochures with technical data of the items for approval prior to installation.

5.9 WORK PROGRAMME

Submission to the Building Services Engineer in the first instance shall be made not less than one week, prior to approval in principle, is required. The work programme which shall match the main project programme outline shall be amended, as and when advised by the Building Services Engineer.

SECTION 6 STANDBY DIESEL GENERATOR

6.1 SCOPE OF WORK

Supply and install one diesel driven 500 kVA 415V 50Hz (standby rating) standby generator to provide standby power supply in the event of an Energy Fiji Limited supply failure.

The installation shall include the commissioning, testing and subsequent maintenance of the generator and its associated equipment for the period in accordance with the Contract Conditions.

6.2 GENERAL REQUIREMENTS

Supply, deliver, install, test and commission the industrial diesel engines direct coupled to the alternators and mounted on a common base frame and complete with all accessories. The generator set shall be installed where shown on the drawings. The generator set shall comprise the following main items:

- a. Weather protected sound attenuated enclosure
- b. Fuel oil system
- c. Engine cooling system
- d. Exhaust piping and silencers
- e. Test and alarm facilities
- f. All electrical and/or mechanical control and switchgear equipment complete with wiring and all other work and equipment necessary to ensure the safe and efficient operation of the generating set
- g. Operation and Maintenance Manuals.

6.3 ENVIRONMENTAL CONDITIONS

The generator set shall conform to the requirements of this Specification under the following conditions:

6.3.1 Temperature

At any ambient temperature from 15 deg. C to 50 deg. C.

6.3.2 Humidity

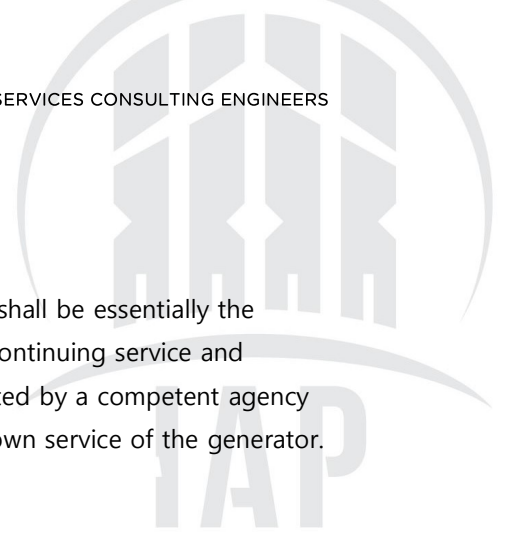
Any relative humidity that may occur as a result of the atmospheric conditions on site, within the range of ambient temperatures given in Clause 6.3.1 above.

6.3.3 Altitude

The set shall operate at full capacity at sea level.

6.3.4 Existing Site Conditions

The site is subject to extremes of heat, humidity and corrosion because of its location in a tropical and coastal environment.



6.4 BASIC REQUIREMENTS

6.4.1 Standard Products

The diesel alternator set and associated component parts of the equipment shall be essentially the standard products of the manufacturer or his supplier, so that prompt and continuing service and delivery of spare parts may be assured. The manufacturer shall be represented by a competent agency in Fiji to facilitate regular preventative inspection, maintenance and break-down service of the generator.

6.4.2 Materials and Workmanship

All materials and workmanship shall be of the best accepted standards for this class of equipment and shall be designed to give reliable service, subject to reasonable maintenance.

6.4.3 Mass and Size

Mass and size shall be kept to the minimum possible for this class of equipment.

6.4.4 Vibration

The diesel generator set shall operate with the minimum of vibration consistent with this class of equipment, and shall have low out-of-balance forces.

6.4.5 Noise

The diesel generator set shall operate with the minimum of audible noise for this class of equipment because of the close proximity to adjacent buildings.

Noise levels of the diesel generator set including the ventilation system, shall not exceed the limits set down in Standard AS/NZS 1359.

6.4.6 Resistance to Natural Conditions

All components, particularly those of electrical, fuel, lubrication and exhaust system shall be of corrosion resistant materials or alternatively painted to withstand conditions set out in this Specification.

The Generator Contractor shall allow to de-rust and repaint to the approved standards any corrosion on the enclosure of the generator during the Defects Liability period.

6.4.7 Lifting Attachments

Eyes or other approved lifting means shall be provided on the diesel generator set.

6.4.8 Base Frame and Mountings

The generating set including engine, alternator and auxiliaries shall be provided with a heavy duty fabricated galvanized steel base frame and shall be of substantial design, adequate mass and stiffness to resist engine torque and vibration without undue distortion.

6.4.9 Vibration Isolation

Prevent the transmission of vibration to the building. Mount the diesel generator set on approved anti-vibration mounts.

6.4.10 Drip Tray

A drip tray of 1.5 times the sump oil capacity shall be provided and shall be installed under the engine. It shall be possible to remove the drip tray with the set installed in position.

6.4.11 Spares

A kit of spares, sufficient to meet all normal requirements which may arise during 500 hours of running shall be supplied for the installation.

The spares shall be mounted in the lockable cabinet as provided for the tools.

6.4.12 Tools

A set of tools shall be supplied which shall be adequate to meet all normal routine maintenance. In particular, it shall include spanners to fit each size of nut on the set and any special tools that may be required for the dismantling of component parts. A lockable tool cabinet shall be provided. Final location of the cabinet shall be confirmed by the Principal.

6.4.13 Painting

The generator set shall be painted in accordance with the Supplier's standard requirements taking into account the environmental conditions.

6.5 ENGINE REQUIREMENTS

6.5.1 General

The engine shall be a diesel engine in accordance with Australian Standard AS 1359 and thoroughly reliable in the duties required.

The engine shall be capable of continuously driving an alternator having a output of the specified rating.

The engine shall be of the vertical type operating on the four-stroke principle at 1,500 R.P.M.

6.5.2 Rating

The engine rating shall be de-rated to comply with the specified operating conditions, including all due allowances for engine driven auxiliaries.

6.5.3 Governing Controls

The engine shall be fitted with an approved type electronic governor.

6.5.4 Lubrication

The engine shall be equipped with a positive pressure system for lubrication to working parts.

There shall be no moving parts which require hand lubrication prior to starting the engine or whilst in operation.

Drain plug (s) shall be in accessible position (s) and extended by piping as necessary. The oil shall not be drained into the oil drip tray. The Generator Contractor shall supply the first fill of lubricating oil.

6.5.5 Lubricating Oil Filters

Filters shall be of the full flow type and shall be capable of removing all foreign matter above a particle size of 10 microns.

Filters shall have replaceable elements.

6.5.6 Crank Case Breather

The crank case breather shall be fitted with a fine filter in the cap to prevent entry of dust into the sump.

6.5.7 Air Filter

Engine air intake shall be fitted with an efficient dry cartridge type air filter capable of functioning for long periods between services.

Filters shall have replaceable elements.

6.5.8 The Cooling System

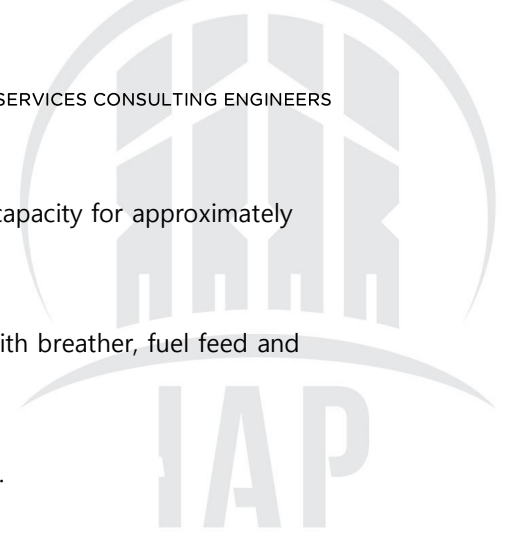
The cooling system for the diesel engine shall consist of a water jacket circuit of the pressurised type.

The radiator shall be designed to suit the heat rejection loads of the engine running at full rated output, and with a 20% fouling factor on the radiator.

Cooling of the radiator shall be by means of electric motor driven propeller fans of adequate air handling capacity for the duty at maximum engine output.

The radiator shall be complete with expansion tank and thermostatically controlled electric motor driven fans and fan guards and controls.

Provide low water level alarm indication on the generator control panel.



6.5.9 Generator Fuel Tank

The diesel generator set shall be supplied with base frame fuel tank with a capacity for approximately eight (8) hours running.

The tank shall be supplied complete with a contents indicator, fuel fill cap with breather, fuel feed and return lines to the engine and drain plug.

The Generator Contactor shall supply the first fill of diesel oil at full capacity.

6.6 ENGINE START AND PROTECTIVE EQUIPMENT

6.6.1 Engine Starting

The diesel generator set shall be on automatic start type with facilities for key starting.

6.6.2 Automatic Protective Equipment

The following protective equipment shall be provided

a) Overload

The generator set shall stop on alternator overload or output failure.

b) High Jacket Water Temperature

The engine shall stop if jacket water reaches a temperature which would be detrimental to the engine.

c) Low Lubricating Oil

The engine shall stop on failure of lubricating oil pressure.

d) Over speed

The engine shall shut down on occurrence of over speed.

6.7 ALTERNATOR

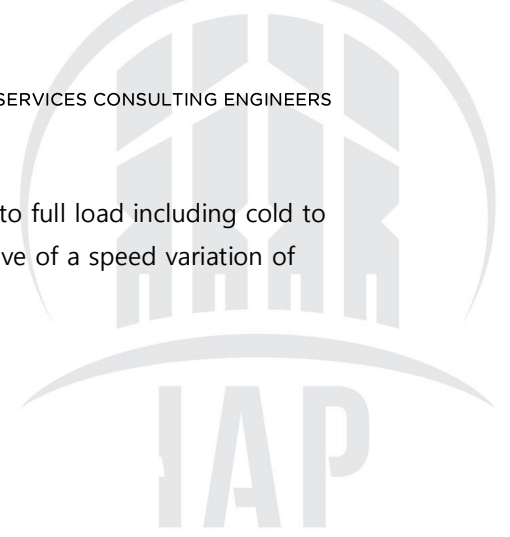
6.7.1 General

The alternator shall be of self-exciting self-regulating brushless design.

The alternator shall be direct coupled to the respective diesel engine and mounted on a common base frame.

6.7.2 Ratings

The alternator and exciter shall have a standard rating of not less than 0.8 PF lagging, three-phase, four wire 415/240 volt, 50Hz.



6.7.3 Automatic Voltage Regulator (AVR)

The AVR shall maintain the voltage within the limits of +/-1% from no load to full load including cold to hot variations at any power factor between 0.8 lagging and unity and inclusive of a speed variation of 5%.

6.7.4 Insulation System

The insulation system shall be Class H.

6.7.5 Terminal Box

Alternator output and control terminals shall be enclosed in terminal boxes of adequate size suitable for top or bottom cable entry mounted in an accessible position on the alternator frame and marked in accordance with Australian Standard AS 1359.

Sealed covers shall give access to the terminals.

6.8 WIRING

6.8.1 Scope

Supply and install the following wiring:

- i) Control and alarm wiring within the control panel.
- ii) All earthing conductors associated with this installation.

6.8.2 Standard

All wiring shall comply with the requirements of AS/NZS 3000 and previous Sections of this Specification.

6.9 INSTRUCTION PLATE

A plate shall be provided adjacent to the control panel giving brief instruction how to start, stop and attend to the set when operated manually.

6.10 GENERATOR SET CONTROL PANEL

A steel cubicle shall be provided to house all diesel engine control equipment, switching equipment and distribution equipment. The panels shall contain all equipment necessary for the fully automatic operation of the generator set.

The following indicators and control shall be incorporated for the generator set.

(I) Safety Devices

- Low lubricating oil pressure alarm shutdown and open circuit breaker.
- High engine temperature alarm, shutdown and open circuit breaker.
- Overspeed alarm, shutdown and open circuit breaker.



(II) Gauges and Instruments

- Start pushbutton (located on engine).
- Engine oil pressure (located on engine).
- Engine water temperature (located on engine).
- Three ammeters - one per phase.
- One voltmeter with phase selector switch.
- Frequency meter.
- Hours run meter.
- Tachometer.

6.11 TESTING

Supply the necessary test apparatus and materials, including fuel and lubrication supplies of the correct grades and carry out the specified tests on the complete generator set assembly including auxiliary systems and control panel.

6.11.1 Workshop Testing

A combined test of the engine and alternator with such auxiliary equipment as may be deemed practicable shall be carried out in the presence of the Building Services Engineer.

6.11.2 Preliminary Trials

After completion of the installation on site and before carrying out main trials, preliminary trials shall be conducted in the presence of the Building Services Engineer. Such trials shall include the checking and the adjustment of the crankshaft alignment (when cold), the insulation resistance of stator, rotor and exciter windings, and the air gap between each stator and rotor.

A check shall be made on effectiveness of the radio suppressors, the satisfactory operation of the exciters, hand-operated field rheostat and automatic voltage regulator, also, the satisfactory operation of all auxiliary motors and their starting and switching gear. Preliminary trials shall also include a check on the satisfactory operation of control equipment and all auxiliaries supplied with the set.

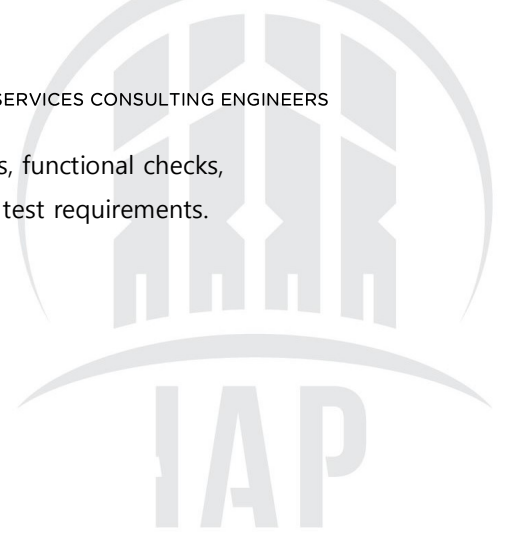
6.11.3 Commissioning Tests

Test run the completed installation and demonstrate that the installation, including components and equipment, operates correctly and meets the performance requirements under normal running conditions.

During commissioning perform the following:

- Confirm operation and setting for each equipment item
- Repeat the functional checks on the equipment
- Ensure that the phase rotation sequence is the same as the Energy Fiji Limited's connection.

Approval: Obtain approval before proceeding with commissioning tests.



Supply satisfactory evidence, in the form of certificates recording tests results, functional checks, calculations, and the like details showing that the generator set has met the test requirements.

6.12 OPERATIONAL MAINTENANCE

6.12.1 Maintenance Period

Co-extensive with the Defects Liability Period.

6.12.2 Requirement

During the maintenance period:

- Carry out monthly inspections and perform maintenance work at the frequencies and following the procedures recommended by the generator set manufacturer
- Maintain the generator set in a condition to meet the specified performance
- Provide and maintain an anti-corrosion additive in the cooling system where necessary
- Promptly rectify faults. Replace faulty materials and equipment without charge
- Complete log book entries recording these procedures

At the end of the maintenance period make a final service visit and upon satisfactory completion of the above procedures certify in writing that the installation is operating correctly.

Coinciding with the routine inspection visits instruct the Principal's operational maintenance staff in the recommended methods of maintenance and control of the system.

6.13 INSPECTIONS - GENERATING SET

Arrange for and give sufficient notice so that the Building Services Engineer may witness the inspections, tests and the like. Three working days' notice is required.

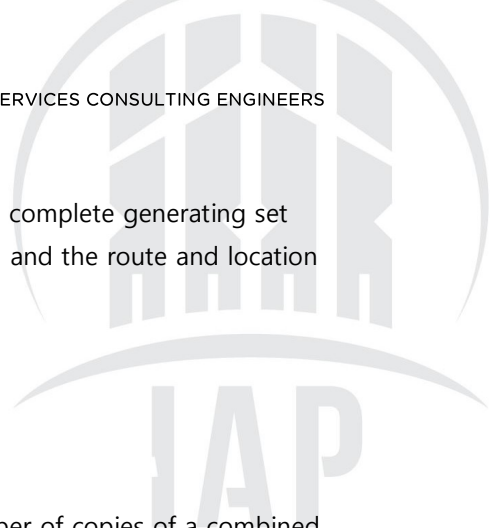
6.14 SHOP DRAWINGS

Provide manufacturer's drawings of the proposed generator set assembly.

Include the following information:

- Maximum overall dimensions of the generator set
- Maximum mass of the generator set
- Maximum mass of the generator set for transport
- Required access clearances around the generator set for operational maintenance and dismantling procedures
- Locations of terminals and fittings
- Recommended layouts of the complete installation

NUMBER OF COPIES:.....THREE.3.....



6.15 AS INSTALLED DRAWINGS

Before the Date of Practical Completion, provide As Installed drawings of the complete generating set assembly as installed, showing the final layout of equipment and accessories, and the route and location of interconnecting piping, exhaust ducts, wiring and the like.

NUMBER OF COPIES:.....THREE.(3).....

6.16 MANUALS

Before commencement of operational instruction, provide the specified number of copies of a combined operator’s manual and technical manual written in clear concise English, containing a title page listing the supplier’s name, address and telephone number, a table of contents, and the following data:

Operator’s Manual:

- Information necessary for the satisfactory long-term operation and regular maintenance of the installation
- Recommended maintenance periods and procedures
- Particulars of maintenance tools provided and instructions for their use

Technical Manual:

- Detailed technical description of each component or equipment items and its function, with diagrams and illustrations where appropriate
- Where necessary, procedures for dismantling and re-assembling the diesel generator set and ancillary equipment
- List the spare parts provided
- The As Installed drawings

FORM: A4 size, printed or typed on durable printing paper, each page consecutively numbered, and neatly bound in durable vinyl or similar hard covers.

NUMBER OF COPIES:.....THREE (3).....

Prototype copy: Provide a prototype copy for approval before proceeding.

6.17 LOG BOOK

Provide a log book bound and presented generally as specified for manuals, with not less than 100 pages, or with sufficient pages to receive the entries for the maintenance period and for a further period of 12 months, whichever is the greater. Make typical entries recording the required procedures during the maintenance period.

Sample Page: Log book pages shall match the sample provided. Include in the log book the test, approval and completion certificates required by this Section.

SECTION 7 TESTING AND COMMISSIONING

7.1 GENERAL

This section of the specification covers the requirements for commissioning and acceptance tests for all the equipment and systems installed under this Contract.

The installation shall be tested to the satisfaction of the Building Services Engineer prior to the acceptance of the installation and the commencement of the Defects Liability Period.

The tests shall comprise a thorough inspection of the installation and the operational and performances tests.

The necessary skilled and competent personnel together with all equipment, fuel and electrical power required to test and commission the works shall be provided.

All testing and commissioning shall be carefully preplanned and scheduled in order that they are fully co-ordinated with other relevant parties and shall be carried out in a safe and efficient manner with a minimum of inconvenience to all concerned.

The installation shall be tested progressively as the work is carried out then finally tested once it is completed to ensure compliance with the Specification, is mechanically and electrically safe and that it will operate correctly under normal, emergency and fault conditions. Control, protection and operative devices shall be checked for correct adjustment and rating.

All equipment or materials found to be faulty during testing shall either be replaced or repaired free of charge.

Should a trial or test be deemed unsatisfactory by the Building Services Engineer it shall be repeated at no further charge after necessary rectification, until such time as a satisfactory result is obtained.

7.2 PRE-COMMISSIONING

The Building Services Engineer shall be given three (3) working days' notice of any proposed test and shall be given the opportunity to attend all such tests.

Notice of seven (7) calendar days is required so that the Principal's Representative can arrange witnessed commissioning. Before lodging this Notice, the Generator Contractor shall conduct all pre-commissioning tests on all equipment. Should any test fail, the Generator Contractor shall determine the cause of the failure, correct the fault and repeat the test.

7.3 COMMISSIONING

Carry out all commissioning tests necessary to put the systems into use and for approval before Practical Completion is granted. Record all test results and include in the Maintenance Manual.

Commissioning shall be carried out by specialists in the respective fields.

Each item of equipment individually and the complete system as a whole shall be checked and adjusted to achieve satisfactory performance.

Commissioning personnel shall be provided with preliminary copies of Maintenance Manuals and As Installed drawings to facilitate correct commissioning and for checking of Manuals and drawings for correctness.

7.4 TESTS AND INSTALLATION INSTRUMENTS

The Generator Contractor shall supply all instruments, appliances and test loads necessary to complete the performance tests and test procedures specified.

The Generator Contractor shall ensure that all test instruments have been checked for accuracy prior to their use; including, but not limited to:

7.4.1 Manufacturers' checks.

7.4.2 Any approved laboratory checks.

The Generator Contractor shall provide calibration certificates if requested.

Gauges and instruments provided as permanent parts of the installation may be used during performance testing providing evidence is submitted of their calibration accuracy.

All instruments shall be checked and calibrated during commissioning and again after 3 months of normal operation. Any instrument which will not hold calibration shall be replaced.

7.5 TEST RESULTS

All test procedures used and results obtained for both works and site tests shall be submitted in the form of a written Test Report.

Records shall be kept of test results and two (2) copies shall be submitted to the Building Services Engineer at the completion of the work. Approval of the format required for the test results shall be obtained prior to the submission.

7.6 NOTICES

All tests required by the Energy Fiji Limited shall be completed in accordance with directions given by them. Copies of all approval notices including the 'Final Acceptance' notice shall be submitted prior to the claim for final payment.

SECTION 8 MAINTENANCE AND SERVICING

8.1 GENERAL

The Defects Liability Period will commence at the date of completion of all works required under this specification. The duration of the Defects Liability Period will be twelve (12) calendar months from the date of completion. An additional twelve (12) months defects liability may also apply, should this option be accepted, extending the Defects Liability Period to twenty four (24) months from the date of completion.

This clause applies irrespective of the fact that such part or parts may have been previously accepted. The Generator Contractor shall warrant that all aspects of the Generator Services installation at the site, which the Principal's Representative has not otherwise accepted in writing, meet the requirements of this Specification. Any devices subsequently found that do not meet these requirements shall be treated as a defect and shall be rectified by the Generator Contractor as detailed below.

Within seven (7) days of the commencement of the Defects Liability Period, the Principal's Representative will provide a list of defective items to the Generator Contractor. The Generator Contractor shall make good the defective items within twenty eight (28) calendar days of the commencement of the Defects Liability Period. Defective items not rectified within the stated period will result in an extension to the Defects Liability Period equal to this delay as calculated by the Principal's Representative.

During the Warranty Period, defined as the Defects Liability Period, the Generator Contractor shall undertake the following:

- 8.1.1 Replace or make good any part or parts which may prove faulty in design, workmanship or material.
- 8.1.2 Rectify all faults and defects (hardware and software), which occur during the Defects Liability Period.
- 8.1.3 Provide warranty of the entire electronic security and surveillance installation(s) including all parts, labour and peripheral equipment.
- 8.1.4 Renew or modify any items of equipment and/or group of items and/or complete system that do not comply with the operating conditions and performance specified during the period of twelve (12) calendar months after the date of completion.
- 8.1.5 Include for all labour and all incidental costs for the removal and replacement of defective parts or components.
- 8.1.6 Perform the required works as instructed in writing within seven (7) days of such notices.
- 8.1.7 Test all replaced items and show that the system operates as designed.

Failure to rectify defects found during the Defect Liability period will result in the Principal's Representative engaging others to finish the required works. The costs of these works will be deducted from payments owing or billed. At the end of the Warranty Period, the Generator Contractor shall pass on to the Principal's Representative any remaining warranty from equipment manufacturers

and/or suppliers. The Generator Contractor shall provide details of all warranties in the Maintenance Manuals.

8.2 MAINTENANCE

Routine maintenance and servicing shall be carried out for a period of 12 months from the date of Practical Completion to the end of the Defects Liability Period. Routine maintenance shall be carried out on a monthly basis and emergency service shall be carried out on a 24 hour call out basis.

Maintenance procedures shall be as appropriate to ensure the safe and proper operation of all systems and shall be in accordance with current Standard requirements of the Building Act and Regulations having jurisdiction, relevant Australian Standards, Local Authority Regulations and the schedule provided in the Installation Manual as outlined in Section 'Testing and Commissioning' of this Specification. The Generator Contractor shall provide all miscellaneous materials required in carrying out the works. A copy of the monthly service sheets is to be posted to the Building Services Engineer within a week of the work.

Routine maintenance shall be deemed to be the regular maintenance of equipment and shall include not less than:

- a. Checking and replacement of faulty equipment and accessories as required within the Defects Liability Period.
- b. Checking the operation, performing maintenance and setting and calibration of all control components.
- c. Checking the enclosure for the generator for any sign of corrosion. Corroded areas shall be de-rusted and repainted to the approved standards.
- d. Maintaining a dated record of servicing performed on each system in a service log book record book to be retained under the Principal's control on site.

The last maintenance visit prior to the end of the Defects Liability Period shall be a major visit for complete service. The Building Services Engineer shall be advised of the proposed service program for the last major visit not less than one (1) week prior to the date of the proposed last visit so that a representative may be present during the service.

8.3 RECTIFICATION OF DEFECTS

All defects shall be promptly rectified. Retention moneys or Bank Guarantee will not be released until all outstanding defects notified during the Defects Liability Period have been rectified and completion of such work subsequently advised in writing to the approving Authority.

8.4 SERVICE LOG BOOK

Provide a log book bound in an approved hard cover folder and containing sufficient pages to record all operational maintenance during the defects liability period. Provide a fixed holder in an approved location for the log book.

Record in the log book all maintenance work performed. Each log sheet shall be signed by the Serviceman responsible and shall include the date and description of work carried out. All log sheets must be countersigned by the Principal's representative.

The front cover of the log book shall be labelled with the name of the project and shall clearly note that each sheet must be countersigned. Inform the Maintenance staff and supplier's Serviceman on the correct use of the log book.

8.5 DEFECTS LIABILITY

The Defects Liability Period shall be 52 weeks from the date of Practical Completion.

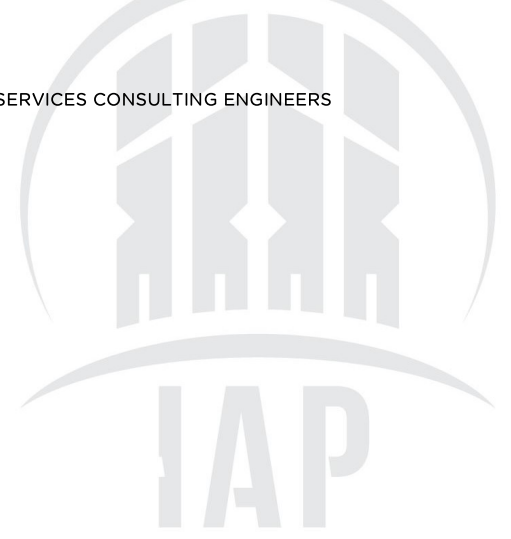
During the Defects Liability Period the Generator Contractor shall be responsible for the provision of all labour, materials and other costs associated with the removal of defective components, bad workmanship and the installation, adjusting and testing of replacements and to carry out such work within a reasonable time.

Equipment replaced or repaired during the warranty period shall be provided with a warranty of 52 weeks commencing from the date of replacement or repair.

Warranty maintenance for the replaced or repaired equipment shall be limited to the 52 weeks from the date of Practical Completion.

8.6 CERTIFICATION

Prior to the end of the Defects Liability period, make a final service visit and upon satisfactory completion of the above procedures certify in writing that the installation is operating correctly.



APPENDICES

APPENDIX I TENDER FORM (To be completed and submitted with Tender)

GENERATOR SERVICES TENDER

PACIFIC COMMUNITY (SPC) – NEW SPC BACKUP GENERATOR

NABUA, SUVA, FIJI

We, the undersigned having examined the Drawings and Specification hereby offer to execute and complete the whole of the works required to be done, as shown on the said Drawings and described by or referred to in the Specification and for the Fixed Lump Sum of:

_____ (FJD \$ _____)

Which includes all Contingency Sum and P C Sums and is a Fixed Lump Sum V.A.T. inclusive without provision for fluctuations in the cost of labour and materials.

AS WITNESS OUR HANDS THIS _____ day of _____ 2023.

SIGNATURE OF TENDERER _____

OFFICE STAMP _____

ADDRESS _____

WITNESS [SIGNATURE AND
BLOCK CAPITALS] _____

ADDRESS _____

OCCUPATION _____

DATE _____

We confirm that our time for completion is _____ calendar weeks.

The Tender shall be open for acceptance for a period of sixty (60) days. The Principal does not bind himself to accept the lowest or any tender. The documents must not be altered in any way. Any special observation should be made in a separate letter attached to this Tender. The Tender submission shall be in accordance with the instructions detailed in the 'Invitation to Tender'.

NAME OF TENDERER: _____

SIGNATURE: _____ **DATE:** _____

APPENDIX II SUMMARY OF TENDER (To be completed and submitted with Tender)

PRINCIPAL:	PACIFIC COMMUNITY (SPC)	SHEET 1 OF 2 SHEETS
PROJECT NAME:	NEW SPC BACKUP GENERATOR	PROJECT NO.: 7999.1
SPECIFICATION:	GENERATOR SERVICES	DATE: AUGUST 2023

OPTION ONE

ITEM	DESCRIPTION	PRICE (VEP)
1.	Preliminary and General.	\$
2.	Supply one of 500 kVA standby rated diesel generator enclosed set complete with weatherproof acoustic surround and removeable panel doors.	\$
3.	Installation one of 500 kVA 415V 50Hz standby diesel generator enclosed set.	\$
4.	Supply and installation of generator Automatic Transfer Switch.	\$
5.	First fill of diesel oil at full tank capacity.	\$
6.	Supply and Installation of lockable cabinet with generator tools. Refer Clause 6.4.12	\$
7.	Supply and Installation of stainless-steel exhaust system (including support system for exhaust and make good of building walls).	\$
8.	All other items not included above. (Please Specify _____)	\$
9.	Supply of Shop Drawings (Only Architectural DWGs will be provided).	\$
10.	Testing and Commissioning.	\$
11.	Supply of As Installed Drawings.	\$
12.	Supply of Installation Manuals.	\$
13.	Twelve (12) months Maintenance.	\$
14.	Contingency Sum.	\$ 5,000 - 00
TOTAL TENDER PRICE (VAT Exclusive) FJD		\$
VAT @ 15%		\$
TOTAL TENDER PRICE (VAT Inclusive) FJD		\$

NAME OF TENDERER: _____

SIGNATURE: _____ **DATE:** _____

APPENDIX II SUMMARY OF TENDER (To be completed and submitted with Tender)

PRINCIPAL:	PACIFIC COMMUNITY (SPC)	SHEET 2 OF 2 SHEETS
PROJECT NAME:	NEW SPC BACKUP GENERATOR	PROJECT NO.: 7999.1
SPECIFICATION:	GENERATOR SERVICES	DATE: AUGUST 2023

OPTION TWO

ITEM	DESCRIPTION	PRICE (VEP)
1.	Preliminary and General.	\$
2.	Supply one of 500 kVA standby rated diesel generator open set.	\$
3.	Installation one of 500 kVA 415V 50Hz standby diesel generator open set.	\$
4.	Supply and installation of generator Automatic Transfer Switch.	\$
5.	First fill of diesel oil at full tank capacity.	\$
6.	Supply and Installation of lockable cabinet with generator tools. Refer Clause 6.4.12	\$
7.	Supply and Installation of stainless-steel exhaust system (including support system for exhaust and make good of building walls).	\$
8.	All other items not included above. (Please Specify _____)	\$
9.	Supply of Shop Drawings (Only Architectural DWGs will be provided).	\$
10.	Testing and Commissioning.	\$
11.	Supply of As Installed Drawings.	\$
12.	Supply of Installation Manuals.	\$
13.	Twelve (12) months Maintenance.	\$
14.	Contingency Sum.	\$ 5,000 - 00
TOTAL TENDER PRICE (VAT Exclusive) FJD		\$
VAT @ 15%		\$
TOTAL TENDER PRICE (VAT Inclusive) FJD		\$

NAME OF TENDERER: _____

SIGNATURE: _____ **DATE:** _____

APPENDIX III SUMMARY OF TECHNICAL DATA (To be completed and submitted with Tender)

PRINCIPAL:	PACIFIC COMMUNITY (SPC)	SHEET 1 OF 2 SHEETS
PROJECT NAME:	NEW SPC BACKUP GENERATOR	PROJECT NO.: 7999.1
SPECIFICATION:	GENERATOR SERVICES	DATE: AUGUST 2023

NAME OF TENDERER: _____

Two loose copies of this Schedule are supplied with this Specification.
 One copy shall be completed, signed by the Tenderer and returned with his tender. The other copy is for the Tenderer's retention. A Tender shall be regarded as not complying with this Specification if the information required by this Schedule of Technical Data is not supplied with the Tender.

Tenders are to be based on equipment etc., as specified. Alternatives may be submitted, but must be clearly described to receive consideration. For each alternative, an alternative tender price must be submitted.

	NAME OF PROPOSED CONTRACTOR / SUPPLIER	SUB-CONTRACT EQUIPMENT
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____
7.	_____	_____

	COMPARABLE WORK CARRIED OUT BY THE TENDERER	APPROXIMATE VALUE
1.	_____	\$ _____
2.	_____	\$ _____
3.	_____	\$ _____
4.	_____	\$ _____
5.	_____	\$ _____
6.	_____	\$ _____
7.	_____	\$ _____

NAME OF TENDERER: _____

SIGNATURE: _____ **DATE:** _____

APPENDIX III SUMMARY OF TECHNICAL DATA (To be completed and submitted with Tender)

PRINCIPAL:	PACIFIC COMMUNITY (SPC)	SHEET 2 OF 2 SHEETS
PROJECT NAME:	NEW SPC BACKUP GENERATOR	PROJECT NO.: 7999.1
SPECIFICATION:	GENERATOR SERVICES	DATE: AUGUST 2023

1. DIESEL GENERATOR SET

Manufacturer: _____

Model Number: _____

2. AUTOMATIC TRANSFER SWITCH

Manufacturer: _____

Model Number: _____

NAME OF TENDERER: _____

SIGNATURE: _____ **DATE:** _____

APPENDIX IV SCHEDULE OF RATES (To be completed and submitted with Tender)

PRINCIPAL:	PACIFIC COMMUNITY (SPC)	SHEET 1 OF 1 SHEETS
PROJECT NAME:	NEW SPC BACKUP GENERATOR	PROJECT NO.: 7999.1
SPECIFICATION:	GENERATOR SERVICES	DATE: AUGUST 2023

The following Schedule of Rates shall be used as a basis to value variations (either additions or deletions) and progress claims for this Contract. Rates shall include all overheads (including on and off site supervisory staff, allowance etc.) profit and VAT. Rates for equipment and materials are that delivered to site, without installation (Unless otherwise stated).

ITEM	DESCRIPTION	UNIT	PRICE (VEP)
1.	Licensed Technician (Generator Services)	Per hour	\$
2.	Technician (Generator Services)	Per hour	\$
3.	Licensed Electrician	Per hour	\$
4.	Electrician	Per hour	\$
5.	Unskilled Labour	Per unit	\$
6.	On Cost Percentage Mark-Ups		
	a. Labour		%
	b. Material		%
	c. Plant		%

NAME OF TENDERER: _____

SIGNATURE: _____ **DATE:** _____

APPENDIX V TENDER CHECKLIST (To be completed and submitted with Tender)

PRINCIPAL:	PACIFIC COMMUNITY (SPC)	SHEET 1 OF 1 SHEET
PROJECT NAME:	NEW SPC BACKUP GENERATOR	PROJECT NO.: 7999.1
SPECIFICATION:	GENERATOR SERVICES	DATE: AUGUST 2023

The following Tender Checklist shall be used to verify all required information when submitting the tender price.

ITEM	DESCRIPTION	YES	NO
1.	COMPLETELY FILLED APPENDIX I - TENDER FORM		
2.	COMPLETELY FILLED APPENDIX II - SUMMARY OF TENDER		
3.	COMPLETELY FILLED APPENDIX III - SCHEDULE OF TECHNICAL DATA		
4.	COMPLETELY FILLED APPENDIX IV - SCHEDULE OF RATES		
5.	COMPLETELY FILLED APPENDIX V - TENDER CHECK LIST		
6.	TIME OF COMPLETION OF THE PROJECT IN CALENDAR WEEKS PROVIDED		
7.	TENDER VALIDITY FOR 60 DAYS		
8.	COST BREAKDOWN TO BE VAT EXCLUSIVE PRICE (VEP) AND FINAL COST IN VAT INCLUSIVE PRICE (VIP) FJD		
9.	PROVIDE PRODUCT DATA SHEETS		
10.	WORKING HOURS FOR THIS PROJECT PROVIDED		
11.	WARRANTY STATED		
12.	PAYMENT TERMS ON A PROGRESS BASIS ALLOWED FOR		
13.	ACKNOWLEDGE NOTICE TO TENDERERS (NTT) PROVIDED (IF APPLICABLE)		

NAME OF TENDERER: _____

SIGNATURE: _____ **DATE:** _____