Ceylon Petroleum Corporation

BID FOR THE DESIGN, MANUFACTURE, TESTING, SUPPLY & COMMISSIONING OF 04 NOS. 3,850 lpm CAPACITY AVIATION FUEL HYDRANT DISPENSERS

B/05/2015

BID DOCUMENT

INSTRUCTIONS TO BIDDERS
BID CONDITIONS &
TECHNICAL SPECIFICATIONS

MARCH 2015
PROCUREMENT NOTICE

CEYLON PETROLEUM CORPORATION

BID FOR THE DESIGN, MANUFACTURE, TESTING, SUPPLY & COMMISIONING OF 04 NOS. 3,850 LITERS PER MINUTE (lpm) CAPACITY AVIATION FUEL HYDRANT DISPENSERS

B/05/2015

The Chairman, Ministry Procurement Committee, Ministry of Power & Energy on behalf of the Ceylon Petroleum Corporation will receive sealed Bids from Reputed Aviation Fuel Hydrant Dispenser Manufacturers, their Export Agents abroad or their Accredited Local Agents for the Design, Manufacture, Testing, Supply and Commissioning of 04 Nos. 3,850 liters per minute (lpm) Capacity Aviation Fuel Hydrant Dispensers up to 1400 hrs. on 10.07.2015.

Bidding document can be obtained between 0930 hrs. and 1430 hrs. up to 09.07.2015 from the office of Manager Procurement & Stores Ceylon Petroleum Corporation, 01st Floor, No. 609, Dr. Danister De Silva Mawatha, Colombo 09, Sri Lanka on a written request and payment of non-refundable fee of Rs. 5000.00 + 2% NBT + 11% VAT (i.e. Rs.5,661.00).

Bids will be opened at the Office of Manager (Procurement & Stores), Ceylon Petroleum Corporation at the above address immediately after closing time of the Bids. Bidders or their authorized representatives will be permitted to be present at the time of opening of Bids.

Bids may be sent by post under registered cover or may be deposited in the Tender Box kept in the Office of Manager (Procurement & Stores) Ceylon Petroleum Corporation, 01st Floor, No. 609, Dr. Danister De Silva Mawatha, Colombo 09.

Bid document is available for inspection on website www.ceypetco.gov.lk.

Chairman,
Ministry Procurement Committee,
c/o Manager (Procurement & Stores),
Ceylon Petroleum Corporation,
No. 609, Dr. Danister De Silva Mawatha,
CEYLON PETROLEUM CORPORATION

Tender for the Design, Manufacture, Testing, Supply and Commissioning of 04 Nos. 3,850 liters per minute (lpm) High Flow Aviation Fuel Hydrant Dispensers

Invitation to Tender

Chairman, Ministry Procurement Committee (MPC), Ministry of Power & Energy on behalf of the Ceylon Petroleum Corporation (CPC) of No.609, Dr. Danister de Silva Mawatha, Colombo 09, Sri Lanka, will receive sealed bids from reputed Aviation Fuel Hydrant Dispenser manufacturers, their Export Agents abroad, or their accredited Local Agents, for the Design, Manufacture, Testing, Supply and Commissioning of:

04 Nos. Aviation Fuel Hydrant Dispenser module with a capacity of 3,850 litres per minute (lpm) mounted on a reputed make of vehicle chassis.

As per Technical Specifications and annexed Schedules, complete in every respect and with all accessories ready for use.

A commitment letter from the accredited local agent for the chassis manufacturer for services, maintenance and supply of spare parts for the next 10 years shall be forwarded along with the offer. Offers without the above commitment letter from the accredited local agent of the chassis manufacturer will be considered as non-responsive.

The CPC will open the Letter of Credit under the terms of Clause 2 of Conditions of Contract (COC) Mode of payment.

Cost of Insurance and Customs Duty at the Port of Hambantota or Colombo and other levies will be paid by the CPC, and should not be included in the Tender price.
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1. INSTRUCTIONS TO BIDDERS (ITB)
SECTION 1: INSTRUCTIONS TO BIDDERS (ITB)

1.1 Introduction

1.1.1 Chairman, Ministry Procurement Committee (MPC), Ministry of Power & Energy on behalf of the Ceylon Petroleum Corporation (CPC) is calling Bids from reputed Aviation Fuel Hydrant Dispenser Manufacturers, their Export Agents abroad or their Accredited Local Agents, for the Design, Manufacturer Testing, Supply & Commissioning of 04 Nos. of 3,850 lpm capacity Aviation Fuel Hydrant Dispensers

1.1.2 Any intending bidder shall have past supply records of Aviation Fuel Hydrant Dispensers on commercial use in the International market for the last 10 years, of which minimum of fifty (50) units shall be for International Airports covering minimum of Ten different countries outside the Country of Manufacture together with supplier details & user recommendations.

1.2 Basis of Bid

1.2.1 Bids are to be forwarded on CIF basis for the Design, Manufacture, Testing, Supply & Commissioning of 04 Nos. of 3,850 lpm capacity Aviation Fuel Hydrant Dispensers to CPC in completely assembled form with all test reports, manufacturer's data sheets/books, detail drawings in three sets (Original and two duplicates) and following manuals / catalogues as indicated.

- Engine & Chassis:
  - Spare Part Catalogue - One copy per each Hydrant Dispenser
  - Workshop Manual - One copy per each Hydrant Dispenser

- Fuel dispensing Module
  - Operations & Maintenance Manual – One hard copy per each Hydrant Dispenser
  - Spare Part Catalogue - One hard copy per each Hydrant Dispenser

Further the Cost of pre-shipment Inspection by an Internationally recognized Independent Third Party Inspector approved by CPC, the cost of Witness of Third Party Inspection & Performance Inspection of the 04 Nos. of 3,850 lpm capacity Aviation Fuel Hydrant Dispensers prior to delivery by three (03) CPC officers, the cost of Commissioning & Provision of technical training for CPC maintenance staff as per Conditions of Contract (COC) Clause 2.2 & 2.3, the cost of Workshop Manual and Spare Parts Catalogue for the Chassis, shall be included separately in Schedule of Price (Schedule – A).

1.2.2 Additional services provided by the Bidder not covered in this Instruction to Bidders shall be stated clearly. If no exceptions are stated, MPC would assume that Bidder conforms to most stringent conditions of the Bid document.

1.2.3 Bidder shall guarantee availability of after sales service facilities in Sri Lanka for the chassis and Aviation Fuel Hydrant Dispenser module offered. However, the Chassis Manufacturer shall be represented in Sri Lanka by an Accredited Local Agent who is technically competent to undertake any repairs and to provide After Sales Services.
1.2.4 Bids are to be forwarded for the Supply of 04 Nos. Aviation Fuel Hydrant Dispensers as per the Technical Specifications stipulated in the Bid document.

1.2.5 If the Bidder wishes to submit alternative offers from different Aviation Fuel Hydrant Dispenser Manufacturers such alternative offers shall be submitted with separate Bid Securities.

1.2.6 All documentation & correspondence shall be furnished in English Language.

1.3 Bid Documents

1.3.1 Bid Document will consist of the following:
- Invitation to Bid
- Instructions to Bidders (ITB)
- Conditions of Contract (COC)
- Technical Specifications
- Schedule of Prices
- Form of Bid
- Format for Bid Security
- Form of Agreement
- Format for Performance Guarantee
- Registration Certificate issued by the Registrar of Public Contracts for the local agent complying to Public Contract Act No. 3 of 1987 (Form No. PCA 3)

1.3.2 The bidders are not permitted to do any alterations in the Bid document in any form whatsoever. Any such alterations in the Bid document by the bidder, may be liable for disqualification.

1.4 Documents to accompany the Bid

1.4.1 Name of Aviation Fuel Hydrant Dispensers Manufacturer and Country of Origin and Country of Manufacture.

1.4.2 Company profile of the Aviation Fuel Hydrant Dispenser Manufacturer & Audited financial statements for the last three (03) years.

1.4.3 Detailed technical specification of the Aviation Fuel Hydrant Dispenser model offered covering chassis and all major components

1.4.4 Certificate from the Manufacturer that the Aviation Fuel Hydrant Dispenser model offered is of currently in manufacture and availability of spares for a minimum period of 10 years

1.4.5 Name and address of the Accredited Local Agent for the Aviation Fuel Hydrant Dispenser along with Legally Executed Power of Attorney issued by the Aviation Fuel Hydrant Dispenser Manufacturer and valid copy of Certificate of Registration issued by the Registrar of Companies.
1.4.6 Registration certificate of Accredited Local Agent for the Aviation Fuel Hydrant Dispenser issued by Registrar of Public Contract in terms of the Public Contract Act No. 3 of 1987 on submission of Form PCA3.

1.4.7 Name and address of the Accredited Local Agent of the Chassis manufacturer along with copy of letter of authorisation issued by the Chassis Manufacturer and valid copy of Certificate of Registration issued by the Registrar of Companies in Sri Lanka.

1.4.8 The Chassis brand offered shall be essentially represented by an Accredited Local Agent in Sri Lanka who is capable of providing warranty services/repairs as well as after sales services & spare part requirements. A Commitment Letter from the Accredited Local Agent of the Chassis Manufacturer declaring the agreement for providing after sales services aforesaid & supply of spares for the next 10 years period, shall be forwarded along with the offer. The Accredited Local Agent of the Chassis Manufacturer in Sri Lanka shall provide documentary evidence on import & supply of minimum of 30 units of Trucks and Heavy vehicles(Commercial Vehicles) of the Chassis Brand offered to Sri Lankan market during the past 10 years.

1.4.9 The chassis offered shall comply with ADR regulation(European Agreement Concerning the International Carriage of Dangerous Good by Road). A copy of the certificate of approval shall be submitted along with the bid.

1.4.10 Inspection / Performance Testing criteria of the Aviation Fuel Hydrant Dispensers and agreement to furnish test certificates on delivery of the Aviation Fuel Hydrant Dispensers

1.4.11 Manufacturing Schedule and Manufacturing Quality Plan

1.4.12 Past performance – Bidder shall forward their past supply records of Aviation Fuel Hydrant Dispensers on commercial use in the International Market for the last ten (10) years, of which minimum of fifty (50) units shall be supplied to International Airports in at least ten (10) different countries outside the country of manufacture together with supplier details and user recommendation.

1.4.13 Every Bidder shall specify the conditions of warranty offered on time/distance basis for the Chassis and Aviation Fuel Hydrant Dispenser module separately.

1.4.14 A Commitment Letter from the bidder that all major breakdowns and / or repairs within the warranty period can be undertaken on urgent basis through his Local Agent. Therefore, the Local Agent shall be well equipped, capable of handling repairs of Chassis Engine and Aviation Fuel Hydrant Dispenser module and such details shall be attached to the offer.

1.4.15 Bidder to provide a list of recommended spare parts with prices separately, for Chassis & Aviation Fuel Hydrant Dispenser module for two (02) years operations.

1.4.16 A dimensional drawing showing key dimensions of the layout of the entire Aviation Fuel Hydrant Dispenser. It shall include dimensions of the platform, operational panel, height & width of the Aviation Fuel Hydrant Dispensers.
1.4.17 Flow Schematic Diagrams of Fueling system, Hydraulic system, Pneumatic systems and Electrical Wiring.

1.4.18 Schedule of Prices (Schedule A) duly completed and signed.

1.4.19 Agreement to supply critical equipment of recommended makes as given in Schedule B

1.4.20 Copy of Receipt of payment of Bid Document fee of Rs. 5000.00

1.4.21 Form of Bid (Annexure A) duly completed and signed.

1.4.22 Bid Security Guarantee (as per Annexure B).

1.4.23 Shipment schedule

1.4.24 A form of compliance and Deviation Sheet (Annexure E)

1.5 Sealing and Marking of Bids

1.5.1 Bid shall be submitted in duplicate as per the conditions specified in this Bid document. The original and the duplicate of the Bid shall be placed in separate envelopes marked 'ORIGINAL' and 'DUPLICATE'. Both envelopes shall be enclosed in one securely sealed cover, which shall be marked "BID FOR THE DESIGN, MANUFACTURE, TESTING, SUPPLY AND COMMISSIONING OF 04 NOS. AVIATION FUEL HYDRANT DISPENSERS" (the Invitation to Bid title) on the top left hand corner and the statement, ‘DO NOT OPEN BEFORE 1400 hrs. on 10.07.2015’ (to be completed with the time and date specified in the Bid document) and shall be addressed to:

Chairman,
Ministry Procurement Committee,
Bid for the Design, Manufacture, Testing, Supply & Commissioning of 04 Nos. 3,850 lpm Capacity Aviation Fuel Hydrant Dispensers,
c/o. Procurement Function,
Ceylon Petroleum Corporation,
01st Floor,
No. 609, Dr. Danister de Silva Mawatha,
Colombo 09,
Sri Lanka.
Tel: 0094 11 5455330, 0094 11 5455331 Facsimile: 0094 11 5455424

1.5.2 If the outer envelope is not sealed and marked as required above, the MPC will assume no responsibility for the Bids being misplaced or premature opening. If the outer envelope discloses the Bidder’s identity, the MPC will not guarantee anonymity of the Bid submission but this disclosure will not constitute grounds for Bid rejection.
1.5.3 Bids, sealed and addressed as aforesaid, shall be sent under Registered cover to reach:

Chairman
Ministry Procurement Committee,
Bid for the Design, Manufacture, Testing, Supply & Commissioning of 04 Nos.3,850 lpm Capacity Aviation Fuel Hydrant Dispensers,
C/o. Procurement & Stores Function,
Ceylon Petroleum Corporation,
1st Floor,
No. 609, Dr. Danister de Silva Mawatha,
Colombo 09,
Sri Lanka.

Not later than 1400 hrs. Sri Lanka local time on 10.07.2015.

1.6 Period of validity of Bids

1.6.1 All Bids shall be valid for a minimum period of 91 (Ninety one) days from the closing date of the Bids. Bidders shall however, clearly indicate the maximum period that their offer would be valid. A Bid valid for a shorter period will be considered as non-responsive.

1.6.2 Cost, Insurance & Freight (CIF) prices indicated in the Schedule of Prices, (Schedule A) (Clause 1.16 below) shall be firm and shall not be subjected to any price variation within the period of validity stated in (1.6.1) above.

1.7 Format and Signing of Bids

1.7.1 The Bidder shall prepare an Original and a Duplicate of the Bid specified above clearly marking as “BID FOR THE DESIGN, MANUFACTURE, TESTING SUPPLY AND COMMISSIONING OF 04 NOS. AVIATION FUEL HYDRANT DISPENSERS” Original and Duplicate as appropriate. In the event of any discrepancy between the Original and Duplicate, the Original shall govern.

1.7.2 The Original and the Duplicate of the Bid shall be typed, or written in indelible ink, and shall be signed by the Bidder, or person(s) duly authorized to bind the Bidder to the Contract. All pages of the Bid except for un-amended printed literature shall be initialed by the person(s) signing the Bid.

1.7.3 Any interlineation, erasures or insertion shall be valid only if they are initialed by the person(s) signing the Bid. All corrections shall be very clear and no overwriting shall be accepted.
1.8 Clarification of Bid Document

1.8.1 A prospective Bidder requiring any clarification of the Bid document shall notify CPC in writing by hand or post or facsimile at the CPC’s mailing address indicated in ITB clause 1.5.

1.8.2 Bidder shall request in writing any clarification of the Bid document not later than fourteen (14) days prior to the deadline for submission of Bids prescribed by the CPC. Copies of the CPC’s response will be sent to all prospective Bidders who have collected Bid documents within seven (07) days prior to the closing of the Bid.

1.8.3 All correspondence shall be addressed to:

Chairman
Ministry Procurement Committee,
Bid for the Design, Manufacture, Testing, Supply & Commissioning of 04 Nos.3,850 lpm Capacity Aviation Fuel Hydrant Dispensers,
c/o. Procurement & Stores Function,
Ceylon Petroleum Corporation,
01st Floor,
No. 609, Dr. Danister de Silva Mawatha,
Colombo 09,
Sri Lanka.
and shall not be personally addressed to any officer. Such correspondence shall not be entertained and shall be considered as a disqualification.

1.9 Deadline for submission of Bids

1.9.1 Chairman, Ministry Procurement Committee will receive Bids at the address specified under ITB Clause 1.5 not later than 1400 hrs, on.

1.9.2 Ministry Procurement Committee may, at its discretion, extend the deadline for submission of Bids, by amending the Bidding document in which case all rights and obligations of MPC and the Bidders will thereafter be subjected to the deadline as extended.

1.10 Late Bids

Any Bid received by the Chairman, MPC after the deadline for submission of Bids, will not be considered and returned unopened to the Bidder.

1.11 Modification, Substitution & Withdrawal of Bids

1.11.1 The Bidder may modify or withdraw his Bid after submission, provided that written notice of the modification or withdrawal is received by the CPC prior to the deadline prescribed for Bid submission.

1.11.2 The Bidder’s modifications shall be prepared, sealed, marked and despatched as follows:
The Bidders shall provide an Original and a Duplicate, as specified in the ITB clause 1.7 of any modifications to his Bid, clearly identified and in two envelopes, duly marked “BID FOR THE DESIGN, MANUFACTURER, TESTING, SUPPLY AND COMMISSIONING OF 04. Nos. of 3,850 Liters/minute capacity Aviation Fuel Hydrant Dispensers ” The envelopes shall be sealed in an outer envelope, duly marked “BID MODIFICATIONS”.

1.11.3 A Bidder wishing to withdraw his Bid shall notify the CPC in writing prior to the deadline prescribed for the submission of Bids. A withdrawal notice may also be sent by Facsimile, but must be followed by the original, by post or by hand not later than the deadline for submission of Bids. The notice of withdrawal shall be addressed to the:

Chairman
Ministry Procurement Committee,
Bid for the Design, Manufacture, Testing, Supply & Commissioning of 04 Nos.3,850 lpm Capacity Aviation Fuel Hydrant Dispensers,
c/o Procurement & Stores Function,
Ceylon Petroleum Corporation,
01st Floor,
No. 609, Dr. Danister de Silva Mawatha,
Colombo 09,
Sri Lanka.

bearing the Bid name and the words “BID WITHDRAWAL NOTICE”.

1.11.4 Bid withdrawal notices received after the deadline for submission of Bids will be ignored, and the submitted Bids will deem to be valid.

1.12 Closing of Bids

Bids, sealed and addressed as aforesaid shall be sent under Registered Cover to reach:
Chairman,
Ministry Procurement Committee,
Bid for the Design, Manufacture, Testing, Supply & Commissioning of 04 Nos.3,850 lpm Capacity Aviation Fuel Hydrant Dispensers,
c/o Procurement & Stores Function
Ceylon Petroleum Corporation,
01st Floor,
No. 609, Dr. Danister de Silva Mawatha,
Colombo 09,
Sri Lanka.
not later than 1400 hrs Sri Lanka local time on 10.07.2015. If the Bidders or their representatives choose not to send their Bids under Registered Cover, they could deposit such Bids in the Tender Box provided for this purpose at the office of the

Manager (Procurement & Stores),
Procurement & Stores Function,
Ceylon Petroleum Corporation,
01st Floor,
No. 609, Dr. Danister de Silva Mawatha,
Colombo 09,
Sri Lanka.

1.13 Opening of Bids

1.13.1 Bids will be opened immediately after the closing date and time fixed for receipt of Bids, at the

Manager (Procurement & Stores)’ Office,
Ceylon Petroleum Corporation,
01st Floor,
No. 609, Dr. Danister de Silva Mawatha,
Colombo 09,
Sri Lanka.

1.13.2 The Chairman, MPC or his nominated representative will open the Bids, in the presence of the Bidders and / or their representatives, who choose to attend at the time on the date and at the opening place specified in the Invitation to Bid. Bidders and / or their representatives so attending shall sign a register as proof of their attendance.

1.13.3 The Bid prices, discounts, and Bidder's names, the presence or absence of the requisite Bid Security and other such details, will be announced, at the opening.

1.13.4 Bids and modifications sent pursuant to ITB Sub Clause 1.11 that are not opened will not be considered for evaluation, regardless of the circumstances.

1.14 Agent to hold Power of Attorney

1.14.1 Bids from Accredited Local Agents representing Manufacturers or from Manufacturers’ Export Agents abroad will not be considered unless they hold Legally Executed Power of Attorney from the Manufacturer, empowering the
Agent to offer on his behalf, to enter into a valid agreement on behalf of Manufacturer to fulfill all the terms and conditions of the contract, in the event of the Bid being awarded.

1.14.2 An Agent signing the Bidding document on behalf of the Manufacturer shall state Manufacturer’s name, address, telephone nos., fax nos., if any. Original of the Legally Executed Power of Attorney shall be attached to the offer. Under no circumstances, will a letter of Authority be accepted.

1.14.3 Nomination of an Agent after the Bid has been submitted will not be valid.

1.14.4 Local Agent shall also forward valid copy of their Business Registration issued by the Registrar of Companies together with their offer.

1.15 Bid Security

1.15.1 Each Bid shall be accompanied by a Bid Security, undertaking that the Bid will be held valid for the specified period, and that the Bid will not be withdrawn during that period. Such security shall be in the form of a Bank Draft or a Bank Guarantee issued by a recognized commercial Bank operating in Sri Lanka and approved by central bank of Sri Lanka.

If the bidder wishes to submit the bid security guarantee by a foreign bank, it should be confirmed by a recognized commercial bank operating in Sri Lanka, and approved by the Central Bank of Sri Lanka and payable to the CPC on demand to the value of Rupees Two Million (Rs. 2,000,000/=) or an equal amount in foreign currency freely convertible in Sri Lanka. i.e. (US$, GBP, EURO & JPY)

1.15.2 The Bid Security shall be valid for 121 (One Hundred and Twenty One) days from the date of closing of Bid. A format of Bid Security is attached in Annexure "B".

1.15.3 Failure to submit the Bid Security at the time, or before the closing of Bid, and in accordance with above said requirements, and in the format provided, will result in the Bid being rejected.

1.15.4 Bid Security from unsuccessful Bidders will be returned to them after the award is made to the successful Bidder. The Bid Security of the successful Bidder will be returned only after receipt of the Performance Guarantee.

1.16 Schedule of Prices

1.16.1 Bids shall be in the form of a Pro-forma Invoice in Three (03) copies indicating Country of Origin, Port of Shipment, H.S. Code, Terms of Payment, Delivery Period and Offer Validity. Rates quoted shall be computed on the basis of CIF
Colombo, showing Free on Board (FOB) value, Insurance and ocean freight charges separately.

1.16.2 Bidders are also required to duly sign and return the Schedule of Prices - marked Schedule A, indicating their Bids in detail together with the Pro-forma Invoice.

1.16.3 Prospective Bidders are requested to submit their offers in any single foreign currency, i.e. US$, GBP, EURO and JPY which are freely convertible in Sri Lanka.

1.16.4 All Agent’s Commissions, (if any), shall be disclosed in Sri Lanka Rupees in the appropriate column of the Schedule of Prices.

1.16.5 Prices not submitted on the prescribed form and in the manner required are liable for rejection.

1.17 Preliminary Examination of Bids

1.17.1 The MPC will examine the Bids to determine whether they are complete, any computational errors have been made, whether the documents have been properly signed, and the Bids are generally in order. The MPC may, at its discretion call clarifications from Bidders.

1.17.2 The request for clarification and the response shall be in writing within short period from the clarifications and no change in the price or substance of the Bid shall be sought, offered or permitted.

1.18 Corrections of Errors

Bids determined to be substantially responsive will be checked for any arithmetical errors and errors will be corrected in the following manner.

1.18.1 Where the discrepancy is between the amount in figure and the amount in words, the amount in words will prevail.

1.18.2 Where the discrepancy is between unit rate and the line total, resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern, unless in the opinion of the Chairman, Ministry Procurement Committee, (MPC) there is an obvious gross misplacement of the decimal point in the rate, in which case the line item total as quoted will govern, and the unit rate will be corrected.

1.18.3 The amount stated in the form of Bid adjusted in accordance with the above procedure with the concurrence of the Bidder shall be considered as binding upon the Bidder. If the Bidder does not accept the correct amount of Bid, his Bid shall be rejected without affecting the Bid Security.
1.18.4 Where the adjusted price is lower than the bid price the adjusted figure will be treated as bid price. If the adjusted price is higher than the bid price the bided figure will be the bid price. The rates will be adjusted with the concurrence of the bidder to reach the bided figure. If the bidder does not agree for such adjustment, his bid shall be rejected without affecting the Bid Security.

1.19 Conversion to Single Currency

To facilitate evaluation & comparison of Bids, all prices quoted in foreign currency will be converted to Sri Lankan Rupees at the Selling Exchange Rate of the Treasury Division of People’s Bank of Sri Lanka, prevailing on the date of opening of Bids.

1.20 Evaluation of Bids

1.20.1 The MPC will carry out a detailed evaluation of the Bids, with the assistance of Ministry Appointed Technical Evaluation Committee, to determine whether the Technical aspects are properly addressed, and the Bids are substantially responsive.

1.20.2 The evaluation methodology will comprise:

1.20.2.1 Technical requirements:

Specifications, drawings and supporting technical documents in compliance with Technical Specifications of this Bid document including the information / details requested under Clause 1.4 of ITB

1.20.2.2 Financial Evaluation of Bids

The comparison of the total CIF price for the Design, Manufacture, Testing, Supply & Commissioning of 04 Nos.3,850 lpm Capacity Aviation Fuel Hydrant Dispensers, discounts and Local Agency Commission if any, will be evaluated.

1.20.3 In addition to the Bid prices indicated in the schedule, the following factors will also be considered in the evaluation.

i. Availability of spare parts as per sub clause 1.4.4 & 1.4.8 of ITB.
ii. Prices of spare parts as per sub clause 1.4.15 of ITB.
iii. Past supply records as per sub clause 1.4.8 & 1.4.12 of ITB.
iv. Shipment Schedule as per sub clause 2.7 of COC
v. Availability of After Sales Services as per sub clause 1.4.8 and 1.4.14 of ITB

1.21 Right to accept or reject any or all Bids

1.21.1 The Ministry Procurement Committee will not be bound to make the award to the bidder submitting the lowest bid.
1.21.2 The Ministry Procurement Committee reserves the right to reject any or all Bids, without adducing any reasons. The Ministry Procurement Committee reserves the right to increase the number of Aviation Fuel Hydrant Dispenser units to be contracted for, at prices indicated in the Schedule of Prices.

1.21.3 The notice of acceptance of Bid will be sent by facsimile/e-mail followed by post to the successful Bidder, to the address given by him in the Bid document, soon after the decision of Ministry Procurement Committee.

1.22 Awarding Criteria

1.22.1 Subject to ITB Clauses 1.20 the CPC will award the contract to the successful Bidder, whose bid has been determined to be substantially responsive, lowest evaluated Bid, provided that the Bidder is determined to be qualified to perform the contract satisfactorily.

1.22.2 The successful Bidder will be called upon to Supply to CPC for the Design, Manufacture, Testing, Supply & Commissioning of 04 Nos.3,850 lpm Capacity Aviation Fuel Hydrant Dispensers, conforming to Technical Specifications, and strictly by the agreed Shipment Schedule which shall be 10 months as per clause 2.6.3 of COC.

1.22.3 The successful Bidder will be called upon to enter into an Agreement with CPC. A specimen Form of Agreement is attached as Annexure C.
2. CONDITIONS OF CONTRACT (COC)
SECTION 2: CONDITIONS OF CONTRACT (COC)

2.1 Performance Guarantee

The successful Bidder on being notified by CPC of the acceptance of his Bid, shall furnish at his own expense a Performance Guarantee, within fourteen (14) days of such notification issued by a recognized Commercial Bank operating in Sri Lanka which is approved by Central Bank in Sri Lanka or a performance guarantee issued by a Foreign Bank which is confirmed by a recognized Commercial Bank operating in Sri Lanka, and approved by the Central Bank of Sri Lanka and payable to the CPC on demand in a sum equivalent to 10% of the total Free on Board (FOB) value of the accepted Bid. The Performance Guarantee shall be substantially in the format given in Annexure D.

If the successful Bidder fails to furnish the Performance Guarantee as aforesaid, his name will be placed in the list of defaulting Contractors.

The successful Bidder in the event of his failure to furnish the Performance Guarantee as required, shall be liable for any losses, costs, expenses and damages, which the CPC may sustain in consequence of such failure, and the Bid Security shall be forfeited.

The Letter of Credit will be opened only after the receipt of the Performance Guarantee. The Performance Guarantee shall be in favour of the CPC, and shall be valid for a period not less than Three Hundred and Sixty Five (365) days from the date of anticipated final delivery.

To expedite opening of Letter of Credit, the Supplier shall on his own account instruct his Bank to Fax CPC, the date, the amount and validity period of the Performance Guarantee. Simultaneously, the original document of the Performance Guarantee shall be sent to CPC by courier.

2.2 Pre-Shipment Inspection by Third Party & Witness by CPC Officials

2.2.1 The Aviation Fuel Hydrant Dispensers shall be subject to a pre-shipment inspection for quality, quantity, & marking requirement including work scope defined in Annexure F at the sole discretion of CPC by an internationally recognized Third Party Independent Inspector accepted by CPC. The cost involved for this inspection shall be included in the schedule of price. The quality and quantity determined by this Independent Inspector shall be binding on both parties. Third Party Inspection Report shall be sent to CPC by Courier and CPC in return will send the Letter of Acceptance back to the supplier within ten (10) days after receipt of CPC approval of the Third Party Inspection Report. Shipment shall be made only after receipt of CPC approval for the Third Party Inspection Report, the letter of acceptance issued by the CPC for the third party inspection report shall be submitted to the Bank with the Original Shipping Documents. These terms shall be included in the Letter of Credit as a condition.

2.2.2 In addition to Third Party Inspection as per Clause 2.2.1 the bidder shall allow three (03) CPC Officials to Witness the Performance Test and Perform Inspection prior to the shipment of Aviation
Supply of Fuel Hydrant Dispensers. The Bidder shall give Forty Five (45) days prior notice to CPC before the Aviation Fuel Hydrant dispensers are ready for Testing and Inspection with Seven (07) days confirmation notice. Complete module shall be Factory Tested by the Manufacturer prior to final Testing by CPC Officers.

2.2.3 The Bidder shall at his own cost, afford the three (03) officers all proper and reasonable facilities covering return air tickets, food and accommodation, travelling for examining, inspection and, testing the Aviation Fuel Hydrant Dispensers and shall also supply free-of-charge such apparatus, materials tools, gauges, labour and assistance as may be required from time to time, for the purpose of such examinations, inspections & testing.

2.2.4 The prospective Bidder shall submit monthly progress reports during the execution of fabrication, pre commissioning, inspection and performance testing phases. Progress report shall be prepared which will be including the following items:

2.2.4.1 Bar chart schedule
2.2.4.2 Critical path schedule
2.2.4.3 List of activities achieved during the reporting period
2.2.4.4 List of activities planned in the succeeding period

2.3 Commissioning & Provision of Technical Training for CPC Maintenance Staff

The supplier shall commission 04 Nos. 3850 lpm capacity Aviation Fuel Hydrant Dispensers at Ceylon Petroleum Corporation Aviation Function at Badaranaike International Airport (BIA) within one month period from delivery to Sri Lanka. Failure to comply with the above requirement will entitle CPC to claim extended warranty period equal to the delay.

A Technically Competent Officer from the Manufacturer capable of providing Technical Training to CPC Technical staff shall visit CPC & conduct training on Operations, Maintenance & Troubleshooting procedures of the Aviation Fuel Hydrant Dispensers supplied. The duration of the training programme shall not be less than Two (02) days & all expenses covering travelling, accommodation, food and internal transport of the resource personnel shall be borne by the Bidder. Medium of training shall be in English Language. The technical training aforesaid shall be conducted immediately after commissioning Aviation Fuel Hydrant Dispensers. All expenses covering travelling accomodation, food and internal transport of the resource personnel shall be born by the bidder.

2.4 Warranty Conditions

2.4.1. The successful Bidder shall provide manufacturer’s warranty that the design, engineering & equipment/material supplied shall be free from defects & shall conform & shall perform so as to comply with specifications contained in the Bid document.

2.4.2. This Manufacturer’s Warranty shall cover a minimum period of 12 months from the date of Commissioning of the Aviation Fuel Hydrant Dispensers.
2.4.3. The warranty requirement for the chassis shall be 200,000km or two (02) years which ever comes first.

2.4.4. All such defects found within the Warranty Period aforesaid shall be rectified or replaced free of charge by the Supplier. Any defective component found during the warranty period shall be replaced within one week upon notification.

2.4.5. Repairs / Part replacements of the Chassis supplied on this contract shall be carried out by the Accredited Local Agent of the Chassis Manufacturer and he shall maintain a stock of spares & attend to any repair caused by manufacturing defects or inferior quality components during Warranty Period at Bandaranayake International Airport, Katunayake or at their workshop at his own expense. Services for the Chassis during the Warranty Period shall be carried out according to the Manufacturer’s recommended schedule.

2.5 Mode of Payment

2.5.1 Foreign Cost
Payments shall be made by an irrevocable Letter of Credit, 90% of the CIF value at sight and balance 10% after the delivery and acceptance by CPC.

2.5.2 Agent’s Commission

2.5.2.1 In Item No. 10 of the ‘Schedule of Prices’, the Bidder shall indicate the Local Agent’s Commission (if any), in Sri Lanka Rupees.

2.5.2.2 Agency Commission shall be paid on receipt of a Certificate from the Manager (Aviation - Operations) of CPC that the items have been received as per the terms and conditions of the contract.

2.6 Shipping documentation, Test Certificates, Approvals and Operating & Maintenance Manuals.

2.6.1 Immediately after the Aviation Fuel Hydrant Dispensers are shipped, the supplier shall send to CPC, a Fax/E-mail stating the name of the Vessel and the other relevant details. Further, within three (03) days from the date of Bill of Lading, four (04) copies of each of the following shipping documents shall be sent by Courier to CPC.

2.6.1.1 Clean on Board Freight prepaid/Collect Bill of Lading showing destination as Colombo and indicating actual amount of freight paid. If freight is not indicated on the Bill of Lading, freight receipt issued by the Shipping Company, indicating the freight shall be annexed.

2.6.1.2 Four copies of manually signed Commercial Invoices showing cost and freight separately.
2.6.1.3 The Certificate of Manufacturer, stating that the item shipped was manufactured by them and indicating the country of origin.

2.6.2 Following documents shall also be sent along with the shipment. All documents shall be in English Language.

2.6.2.1 01 hard copy of Operation & Maintenance Manual for each Aviation Fuel Hydrant Dispenser containing, operating maintenance procedures, trouble shooting guide, flow charts for the functions/ features and other relevant information and 01 hard copy of spare parts catalogue for each Aviation Fuel Hydrant Dispenser.

2.6.2.2 01 hard copy or soft copy of “Workshop Manual” and 01 hard copy of “Spare part catalogue” for each Aviation Fuel Hydrant Dispenser covering all items in the Chassis with sufficient references (Part Nos.) disassembly & maintenance procedures, and other relevant information shall be supplied.

2.6.2.3 Electrical wiring diagram.

2.7 Shipment Schedule

The “04 Nos. 3,850 lpm Capacity Aviation Fuel Hydrant Dispensers” shall be shipped to CPC within a period of 10 months from the date of establishment of Letter of Credit.

2.8 Delays in Delivery

Should the supplier fail to arrange the Design, Manufacture, Testing, Supply & Commissioning of 04 Nos. 3,850 lpm Capacity Aviation Fuel Hydrant Dispensers in due time to arrive in Sri Lanka in accordance with the stipulated and agreed date of delivery given in the bidding document, the Ceylon Petroleum Corporation will have the right to make suitable alternate arrangements for the required supplies and to claim from the supplier, the additional expenses there by incurred by the Ceylon Petroleum Corporation.

2.9 Defaults by Successful Bidder

2.9.1 If the successful Bidder, defaults in the supply or otherwise commits a breach of any of the provision in the Contract with CPC for the Design, Manufacture, Testing, Supply & Commissioning of 04 Nos. 3,850 lpm Capacity Aviation Fuel Hydrant Dispensers according to the Technical Specifications, he shall be liable to pay to CPC, all losses, damages and expenses incurred by CPC, in consequence of such default or breach.

2.9.2 Bidders shall declare that they had read the Bid conditions, and that they make the offer in compliance with, and subject to all the conditions thereof, and agree to perform the services in accordance with the said conditions in the manner therein set out, and in terms of this offer. A form of Bid as Annexure – “A” is attached.
2.10  **Liquidated Damages**

Shall the Supplier fail to Design, Manufacture, Testing, Supply & Commissioning of 04 Nos. 3,850 lpm Capacity Aviation Fuel Hydrant Dispenser within the period specified or shall he fail to replace any defective components or a part thereof with a like quantity of approved quality within the period allowed, the Supplier shall be liable to pay as a pre-estimate of liquidated damages, the sum of 1/1000th of the F.O.B. value of the Design, Manufacture, Testing, Supply & Commissioning of 04 Nos. 3,850 lpm Capacity Aviation Fuel Hydrant Dispenser per day for delay in executing the order, until the order is completed subject to a maximum of 10% of total F.O.B. value of the order. The Supplier in these circumstances will also render himself liable to be placed in the list of defaulting suppliers and be precluded from having any concern in the Ceylon Petroleum Corporation Bids.

2.11  **Patent Infringement**

Supplier shall defend any and all infringement suits in which CPC is made a defendant, alleging patent infringement on equipment purchased from Supplier. Supplier shall pay all costs and expenses incident to any such litigation. It being further agreed and understood, that CPC shall have the right to be represented therein by counsel, of their own selection and paid by them. Supplier shall pay all damages profits and/or costs, which may be subjected under the patent rights.

2.12  **Force Majeure**

Except as regards an act of God, War, Strike, Invasion, Civil war, Rebellion, Revolution, Insurrection, Earthquake, Plagues or Tsunami, the Bidder shall undertake all risks and liabilities of whatsoever kind arising out of incidentals connected with the sale.

2.13  **Arbitration**

Arbitration arising out of this contract shall be conducted under the rules of the Arbitration Centre of the Institute of the Development of Commercial Law and Practice (ICLP) in Sri Lanka and in accordance with the Arbitration Act No. 11 of 1995 of Sri Lanka. The place of Arbitration shall be Colombo, Sri Lanka.
3. TECHNICAL SPECIFICATIONS
SECTION 3: TECHNICAL SPECIFICATIONS

3.1 General

3.1.1 The specification sets out the requirements for the design, construction and testing of the Aviation hydrant dispensers with fuelling modules, which can be mounted on original internationally reputed chassis only. It may be modified by amendments attached to the order or inquiry. Any other deviations must be approved by CPC in writing.

3.1.2 Refuelling module frame shall be mounted on the vehicle chassis by using the nuts & bolts and shall not be welded enabling easily removal from the vehicle chassis. The frame of the refueling module has to be composed of set of open frame elements, structures bolted together and box steel elements are not allowed.

Further, components in the refuelling module shall be installed with nuts & Bolts as far as possible enabling easy replacement i.e in case of accident repair.

3.1.3 The vehicle is intended for use on airside areas at limited speeds (30 Kmph). It is not intended for general use on the public highway.

3.1.4 Flow performance shall be 3,850 liters/minute, depending on the components fitted, and the operating conditions.

3.1.5 The elevating platform shall be suitable for fueling B777 / A380 aircrafts and the total height should not exceed 2.6 meters allowing Hydrant Dispensers to be parked under the wing of A320 aircraft safely.

3.2 Technical Proposal

3.2.1 The bid shall be consists of Commercial proposal & Technical proposal with supporting technical data indicating that all aspect of the technical specification have been read, and fully understood. Statement of compliance without any supporting data is not sufficient.

3.2.2 Outline/general arrangement drawings indicating key dimension are to be submitted in duplicate along with the bid proposal.

3.2.3 In addition gross and net weight, individual axle weight, with other data deemed to be relevant or informative shall be included in the technical proposal.

3.2.4 Detailed construction drawings, P & ID and piping and component layout drawing shall be submitted in duplicate along with the bid proposal.

3.2.5 Approval by CPC for the Drawings will be limited to general agreement with the layout, dimensions and weight of the unit, but will not necessarily imply that the CPC or representative of CPC has the skill or knowledge, to verify or review all stress calculations, construction details, in compliance with applicable regulations, etc. Which comes under the manufacturer’s sole responsibility.
3.3 Design

3.3.1 Any modifications applied for chassis shall be made with the approval of chassis manufacturer. Aspects to be considered shall include suitability for the application.

3.3.2 Purchase of the chassis shall be done by the Aviation Fuel dispenser manufacturer.

3.3.3 Where this specification omits specific detail of equipment or design, the manufacturer will be expected to utilize his skills and general knowledge of industry norms, and ‘best practice’ in respect of the vehicle being constructed. The implication here is that, there are generally recognized constructional standards and methodology, which it is not feasible to include herein, but which nevertheless shall be applied.

3.3.4 A list of applicable standards governing the construction & components of the Aviation Fuel Dispenser are listed in section 1.5.

3.4 Testing and acceptance

3.4.1 The manufacturer should provide a flow test rig with suitable storage, pumps, connection facilities, accurate pressure gauges, pipe work and valves (which seal properly) to enable all tests to be carried out simply and efficiently.

Provision of clean, filtered test product, free of particulate contamination, bacteria and water, shall be the sole responsibility of the manufacturer.

3.4.2 Final acceptance of the completed equipment by the CPC does not relieve the supplier of his obligation to comply with this specification and any amendments or modifications as may be required by the purchase order, or to provide a completed article which is both road-worthy and fit for the purpose intended.

3.5 Standards and Specifications

Where existing practices work well and are accepted there is no implication that these shall be changed except in respect of those mentioned specifically in the remainder of this document.

A list of applicable standards governing the construction & components of the Aviation Fuel Dispenser are listed in section 3.5.1

The reference standards given are divided into the countries of origin for convenience only.

They are also broadly grouped into subject matters. Where more than one standard is listed against a particular subject, there is no suggestion that they are harmonized, equivalent or identical.

3.5.1 Applicable standards
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<th>USA</th>
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<td>Subject (not necessarily the full and proper title)</td>
</tr>
<tr>
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</tr>
<tr>
<td>DIN 28463</td>
<td></td>
<td></td>
<td>Supply of Fuel Hydrant Dispenser</td>
</tr>
<tr>
<td>ISO 228</td>
<td>BS 1560</td>
<td>JIS BO 202 p'II</td>
<td>Steel pipe flanges and flanged fittings</td>
</tr>
<tr>
<td>DIN EN</td>
<td>BS 4677</td>
<td>JIS BO 203 tpr</td>
<td>Pipe threads-tubes and fittings-thread seal type/tapered</td>
</tr>
<tr>
<td>BS EN</td>
<td>BS 1470/3</td>
<td></td>
<td>Arc welding of austenitic steel pipe</td>
</tr>
<tr>
<td>485/515/5</td>
<td></td>
<td></td>
<td>Aluminium and aluminium alloys, tube, forgings, sheet, plate</td>
</tr>
<tr>
<td>73/586</td>
<td></td>
<td></td>
<td>Welded cold formed steel structural hollow sections</td>
</tr>
<tr>
<td>BS EN</td>
<td>BS 1470/3</td>
<td></td>
<td>Code of Practice for scissor lifts (Safety requirements for lifting tables)</td>
</tr>
<tr>
<td>BS EN</td>
<td>BS 1470/3</td>
<td></td>
<td>Mobile Elevating Work Platforms</td>
</tr>
<tr>
<td>BS EN</td>
<td>BS 5395</td>
<td></td>
<td>Stairs, ladders and walkways</td>
</tr>
<tr>
<td>BS EN</td>
<td>BS 4592</td>
<td></td>
<td>Open bar/mesh gratings and panels</td>
</tr>
<tr>
<td>BS EN</td>
<td>BS 4592</td>
<td></td>
<td>Expanded metal gratings and panels</td>
</tr>
<tr>
<td>BS EN</td>
<td>BS 7079</td>
<td></td>
<td>Preparation of steel substrates before application of paint –Blast cleaning etc.</td>
</tr>
<tr>
<td>BS EN</td>
<td>BS 308</td>
<td></td>
<td>Engineering Drawing</td>
</tr>
<tr>
<td>BS EN</td>
<td>BS 2917 pt1</td>
<td></td>
<td>Graphic symbols &amp; diagrams for fluid power circuits</td>
</tr>
<tr>
<td>BS EN</td>
<td>BS 4533</td>
<td></td>
<td>Graphic symbols &amp; diagrams for electrical power circuits</td>
</tr>
<tr>
<td>BS EN</td>
<td>BS 6862</td>
<td></td>
<td>Instrumentation cables</td>
</tr>
<tr>
<td>BS EN</td>
<td>BS 2950</td>
<td></td>
<td>Cables with copper conductors for vehicles</td>
</tr>
<tr>
<td>BS EN</td>
<td>IP/Electrical</td>
<td></td>
<td>Electrical Safety Code, pt.1 of the Model Code of Safe Practice</td>
</tr>
<tr>
<td>BS EN</td>
<td>BS 4999</td>
<td></td>
<td>Degrees of protection of enclosures/low voltage switch gear and control gear</td>
</tr>
<tr>
<td>BS EN</td>
<td>BS 5000</td>
<td></td>
<td>Selection installation and maintenance of electrical apparatus for use in potentially explosive atmospheres.</td>
</tr>
<tr>
<td>BS EN</td>
<td>USA UL 698</td>
<td></td>
<td>Electrical apparatus for potentially explosive atmospheres</td>
</tr>
<tr>
<td>BS EN</td>
<td>IEC 144</td>
<td></td>
<td>Specification for electrical apparatus for explosive atmospheres with type of protection N (Zone 2)</td>
</tr>
<tr>
<td>BS EN</td>
<td>SAE J595</td>
<td></td>
<td>Rotating electric machines</td>
</tr>
<tr>
<td>ISO 4148</td>
<td></td>
<td></td>
<td>Flashing beacons-*Also EEC Automotive Directive 72/245 for EMC (Electro Magnetic Compatibility)</td>
</tr>
</tbody>
</table>
### 3.6 Chassis and related details

<table>
<thead>
<tr>
<th>Model</th>
<th>4x2 Forward tilting day cab with rear windows &amp; air-conditioning right hand driven, ADR complied</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Engine</strong></td>
<td>Diesel, four (04) cylinder, direct injection Engine with electric engine stop (Fuel cut off)</td>
</tr>
<tr>
<td></td>
<td>Min. Power 89 kw</td>
</tr>
<tr>
<td><strong>Engine of the chasis of Hydrant Dispenser offered shall be complied with the fuel specification given in clause 3.6.1.</strong></td>
<td>4-stroke naturally aspirated/turbo charged, water cooled diesel engine (refer fuel specification attached) minimum power 89 kw at rated rpm</td>
</tr>
<tr>
<td><strong>Gear Box</strong></td>
<td>Six speed manual with PTO</td>
</tr>
<tr>
<td><strong>Clutch</strong></td>
<td>Dry single plate, Hydraulic control, Diaphragm or spring type</td>
</tr>
<tr>
<td><strong>Steering</strong></td>
<td>Power assisted, Minimum Turning radius not more than 6.9 m</td>
</tr>
<tr>
<td><strong>Wheel base</strong></td>
<td>3500 - 4000 mm</td>
</tr>
<tr>
<td><strong>Paint</strong></td>
<td>As per Section 5</td>
</tr>
<tr>
<td><strong>Cab height</strong></td>
<td>Lower than 2600 mm unloaded with the becon</td>
</tr>
<tr>
<td><strong>Brakes</strong></td>
<td>Hydraulic or air operated dual circuit</td>
</tr>
<tr>
<td><strong>Suspension</strong></td>
<td>Leaf springs or air suspension</td>
</tr>
</tbody>
</table>

Most of the features mentioned below will be part of the chassis when it is purchased. Others will need to be attended to by the dispenser manufacturer.
### 3.6.1-SPECIFICATIONS/DATA SHEET OF GAS OIL AVAILABLE IN SRI LANKA
(10 mg/kg MAX SULPHUR)

<table>
<thead>
<tr>
<th>Property/Test</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>Clear, Bright and free from water and visible impurities</td>
</tr>
<tr>
<td>Density @ 15˚C kg/m³</td>
<td>ASTM D 1298 ASTM D 4052 820 - 845</td>
</tr>
<tr>
<td>Colour</td>
<td>ASTM D 1500 Max. 1.5</td>
</tr>
</tbody>
</table>

**DISTILLATION**

<table>
<thead>
<tr>
<th>Property/Test</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>T 50 ˚C</td>
<td>ASTM D 86 Min. 245</td>
</tr>
<tr>
<td>T 95 ˚C</td>
<td>Max. 360</td>
</tr>
<tr>
<td>FBP</td>
<td>Max. 375</td>
</tr>
<tr>
<td>Cetane Index</td>
<td>ASTM D 976 Min. 50 (see note-1 below)</td>
</tr>
<tr>
<td>Cetane No.</td>
<td>ASTM D 613 Min. 51</td>
</tr>
<tr>
<td>CFPP ºC</td>
<td>ASTM D 6371 Max. -5</td>
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**Sulphur Content mg/kg**

<table>
<thead>
<tr>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM D 5453 Max. 10</td>
</tr>
</tbody>
</table>

**Flash Point ºC**

<table>
<thead>
<tr>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM D 93 Min. 55</td>
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</table>

**Viscosity Kin at 40 ºC, cSt**

<table>
<thead>
<tr>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM D 445 2 - 4</td>
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</tbody>
</table>

**Water content mg/kg**

<table>
<thead>
<tr>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM D 6304 Max. 200</td>
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**Cu Strip corrosion 3 hrs. @ 50˚ C**

<table>
<thead>
<tr>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM D 130 Max. 1</td>
</tr>
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</table>

**Ash % m/m**

<table>
<thead>
<tr>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM D 482 Max. 0.01</td>
</tr>
</tbody>
</table>

**Carbon Residue, % m/m**

<table>
<thead>
<tr>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM D 524 Max. 0.2</td>
</tr>
<tr>
<td>ASTM D 4530</td>
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</table>

**Particulate Contaminations, Total mg/l**

<table>
<thead>
<tr>
<th>Specifications</th>
</tr>
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<tbody>
<tr>
<td>ASTM D 6217 Max. 10</td>
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**Total Acid No. mg KOH /g**

<table>
<thead>
<tr>
<th>Specifications</th>
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</thead>
<tbody>
<tr>
<td>ASTM D 664 Max. 0.08</td>
</tr>
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</table>

**Calorific Value Gross, Kcal/kg.**

<table>
<thead>
<tr>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM D 240 Min 10,600</td>
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**Oxidation Stability g/m³**

<table>
<thead>
<tr>
<th>Specifications</th>
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<tbody>
<tr>
<td>ASTM D 2274 Max. 25</td>
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**DSEP Rating**

<table>
<thead>
<tr>
<th>Specifications</th>
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</thead>
<tbody>
<tr>
<td>ASTM D 7261 50 - 100</td>
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</table>

**FAME**

<table>
<thead>
<tr>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM D 7371 Non Detectable (Note-2)</td>
</tr>
</tbody>
</table>

**Lubricity (HFRR wear scar dia@ 60 ºC) micron**

<table>
<thead>
<tr>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM D 6079 Max. 400</td>
</tr>
</tbody>
</table>

Note – 1: Not Applicable if any Cetane improver additives is present

Note – 2: Addition of Bio Diesel or Biodiesel blends are not permitted

*The bidder shall confirm that the engine of the Hydrant Dispenser offered complies with the fuel specification aforesaid.*
3.6.2 Features and modifications to the chassis

3.6.2.1 The cab shall be forward control to reduce overall length and forward tilting with power and manual operated to aid maintenance.

3.6.2.2 The air induction system shall be situated within the engine compartment or if it is outside of the cab e.g. vertically at the rear, the air-intake opening shall be directed forward of the cab. If the chassis designed as per the ADR this modifications are not required

3.6.2.3 An inline diesel engine shall be used, with a minimum power output of 89 kW at rated R.P.M.

3.6.2.4 A manual, fully synchronized gearbox is to be fitted.

3.6.2.5 Clutch shall be dry single plate with diaphragm or spring with hydraulic control.

3.6.2.6 The engine exhaust manifold, radiator and thermostat shall be suitable for stationary engine operation in a tropical climate.

3.6.2.7 The exhaust is to be routed forward of the front axle, with discharge to the opposite side of the operating station. Integral spark arrestor is to be fitted at the exhaust/silencer outlet, If the chassis designed as per the ADR this modifications are not required, but exhaust discharge shall be routed to the opposite side of the operating station.

3.6.2.8 A standard electric starter is to be fitted.

3.6.2.9 Electrical current is to be supplied by a heavy duty alternator and rectifier to heavy duty/high capacity batteries, suitable for a tropical climate. Selection should taken into account that although the engine will be kept running during fuelling, overall journey times will be short.

3.6.2.10 Front and rear directional signals, hazard flasher, reverse warning and brake lighting are required in addition to normal road illumination lights.

3.6.2.11 Power steering with a reasonable degree of ‘feel’ shall be fitted.

3.6.2.12 Axles and tyres should have the chassis manufacturer’s written approval for the loading to be imposed at normal air field driving speeds.

3.6.2.13 Because the vehicle will travel only short distances, the normal ‘cold’ inflation pressure, as stated on the tyre wall, will not increase with natural heating to ensure that the correct rolling radius is achieved. In addition, it must be noted that the chassis may be overloaded in this application compared with normal road use.

Accordingly the correct inflation pressures for single and dual wheel use may be much higher, and shall be determined in consultation with the tyre manufacturer.

3.6.2.14 Spring and Stabilisers selected for the chassis must be suitable for the applied loads over the anticipated life of the vehicle and such that undue settlement will not occur. Deflection under load, when traversing typical road bumps and hollows at reasonable speed must not allow the suspension to contact its stops or the drive shaft to contact adjacent equipment.
3.6.2.15 Where modification or strengthening to the chassis is necessary, this must be done either by the chassis manufacturer or with his approval/co-operation.

3.6.2.16 The wheel base of the chassis shall be selected so that the equipment can be arranged without exceeding the permitted load for front and rear axles and so that the chassis frame remains substantially horizontal.

3.6.2.17 After refuelling module is installed, the chassis shall be evenly loaded so that it is level across the width.

3.6.2.18 The height of centre of gravity of the vehicle should not be greater than 95% of the distance between the outer ground contact points of the tyres.

3.6.2.19 Tyres are to be “anti static” (ref. BS 2050 and ISO 2883) with resistance to earth not less than 10,000 ohms unused, and not more than $1 \times 10^6$ ohms used.

3.6.2.20 Dual large rectangular rear view mirrors (convex type) are required. If necessary, their supports shall be extended to provide a clear view alongside the vehicle/beyond the platform.

3.6.2.21 No ash tray or cigar lighter is to be fitted. However, if the chassis is normally provided with a cigar lighter socket, then the electrical supply shall be disconnected and insulated.

3.6.2.22 Adequate ventilation is required for use in hot climates. Cab heater or air conditioning shall not be provided, however ventilation fan shall be fitted.

3.6.2.23 To prevent fuel or fuel vapour from contacting hot parts of the engine or exhaust, a metal fire screen is to be fitted, extending from the back of the cab, over most of its width, to the top of the chassis and below on each side to 300 mm above ground level.

To allow the cab to tilt forward, the fire screen shall consist of two parts. One section attaches to the back of the cab extending almost the whole of its width, and this overlaps, by 50mm minimum, measured as a vertical dimension, another section attached to the chassis frame.

The gap between the two parts shall be as small as practicable but in any case should not more than $\frac{1}{4}$ “.

As necessary additional screening shall be attached to the front wheel mud flaps or the side of the chassis frame to screen the exhaust pipes.

3.6.2.24 Rear mudguards and mud flaps shall be provided.

3.6.2.25 An automatic device shall be fitted to increase engine idling speed when PTO drive is selected. This helps to reduce gearbox chatter, which can occur at slow speeds under load – i.e. when the air compressor is running, and hydraulic systems are in use.

3.6.2.26 A system must be provided to stop the engine from the platform, control station and the opposite side of the control station. Controls shall be the push button/lock type, requiring a special action to reset them.
3.6.2.27 Vehicle **electrical requirements** are described separately in Section 2.2. Where possible, it is better that equipment normally fitted by the chassis manufacturer retained for further use but when necessary, the dispenser manufacturer will need to carry out rewiring and other modifications.

3.6.2.28 The **battery housing** may be inside the cab (usually under the driver’s seat) or outside the cab. In case of the latter, the dispenser manufacturer may need to re-locate it for equipment constructional reasons or to ensure that it is remote/protected from areas of possible fuel spillage – either from the vehicle or aircraft vents.

3.6.2.29 The vehicle shall be right hand driven. All controls, instrument and operational sampling points (Filter) shall be fitted on the left hand side of the dispenser.
3.7 **Electrical Requirements**

3.7.1 **Standards and specifications**

The following requirements mention that apparatus should comply with particular BS, EN and IEC standards. The notes are for convenience and guidance but it is recognized that many acceptable equivalents exist within the standards, codes of practice and requirements covered by IEC, CENELEC (EN standards), BASEEFA (SFA certification standards), BS IP, UL, VDE, DIN, PTB etc. Much of the information is similar but harmonization is far from complete.


BS.5345 is mentioned because it not only includes a list of other standards but is also the code of Practice for selection, installation and maintenance of electrical apparatus for use in potentially explosive atmospheres, as opposed to being a specification per se.

The following are also mentioned because of their direct relevance:

- BS.2950 – Cartridge fuse links for telecommunications and light electrical apparatus. BS.6862 Pt.1 – Cables with copper conductors for vehicles.
- BS-EN.60947/IEC.144 – Degrees of protection of enclosures for low voltage switch gear and control gear.

3.7.2 **Miscellaneous Items**

3.7.2.1 An intermittent **audible alarm** shall be installed set to operate when the platform descends.

3.7.2.2 **Lighting** (with glass lenses) is required to illuminate the meter counters and all gauges and controls at the operating station plus platform and access ladders. These lamps may be controlled either locally, from the vehicle cab, or near the operating station by a separate switch.

3.7.2.3 An adjustable **platform light** shall be fitted to illuminate the aircraft panel. It should not be of such high intensity that it causes a dazzling effect but of sufficient brightness to enable, by adjusting its position, to give adequate illumination.

3.7.2.4 A **flashing beacon** of approved make is required, centrally placed on top of the cab roof. Flash rate shall be between 60 and 90 per minute, the power rating being equivalent to a 36 Watt tungsten bulb. The device should meet requirements for Electro-magnetic compatibility.

3.7.2.5 Where applicable, all **electrical connections** shall be fitted with heat shrink insulation sleeves, and well fitted boots as a minimum standard

3.7.2.6 All cable and electrical connections to be **labeled** and **colour coded** (with matching details in the operating/maintenance manual).
3.7.2.7 Any modifications or repairs to electrical circuits or equipment on vehicles shall be to recognized manufacturer’s standards or equivalent.

3.7.2.8 Beep or voice type reversing aid or system shall be provided.

3.7.3 General design - Electrical

The electrical system shall be designed and installed to minimize the risk of sparking and electrical fires. In particular the system should conform to the following requirements:

3.7.3.1 There shall be electrical continuity between the chassis, the platform, inlet hose lifters, recovery tank and all fueling components. Electrical resistance should not exceed 10 ohms.

The above does not apply to fuelling hoses or nozzles which are covered by provision for conducting static electricity and are semi-conductive.

The nominal system voltage on the circuit should not exceed 24 volts and the equipment shall be suitable for the appropriate zone as defined in British Standard 5345 (BS EN 60079).

3.7.3.2 For a Class II (2) product.

Jet A-1 fuel is covered by the category of Gas Group II A, Temperature Classification T3.

Zone 0 within the product recovery/ depressurizing tank

Zone 1 Within an area between the ground and point 300 mm above and on each side of any discharge opening or vent.

Zone 2 within an area between the ground and a point 1000mm above and on each side of a discharge opening, vent or sealed (gasket/O ring) joint.

3.7.3.3 All wire conductors behind the rear of the driver’s cab shall conform to BS.6862 or equivalent to ensure that they are adequately insulated and able to carry more than the designed circuit current without causing an unsafe rise in wire temperature.

The conductors should also be adequately fixed and protected so as to minimize the risk of damage or deterioration. Plastic flexible conduit is acceptable provided that it is resistant to degradation by UV light. Where metal conduit is used for added protection and durability in particular location, then it must be corrosion resistant.

Conduit must not be routed where it might provide a tempting hand hold or be easily stood upon.

All terminals including battery terminals shall be effectively protected and insulated by a cover against inadvertent contact and spillage of flammable liquids.
All electrical enclosures shall confirm to IEC.144/BS.EN.60947 (was BS.5420)/IP65 standards

3.7.3.4 Behind the rear of the driver’s cab:-

- screw-in or capless **bulbs** shall not be permitted

- **Junction boxes**, connectors and all electrical equipment shall be adequately protected and shielded as far as practicable from the ingress of moisture or dangerous substances under normal conditions of use.

3.7.3.5 A **master switch** to Zone 2 requirements, as defined in BS.5345 (BS EN 60079) shall be placed as near as possible to the battery to enable all electrical circuits to be isolated.

The master switch shall be located outside the vehicle driving side or next to the driver’s seat just inside the door.

It should not prevent intrinsically safe or flameproof circuits, as defined in BS.5345 (BS EN 60079-10-1:2009), requirements, from being taken from the battery side of the master switch. The master switch control shall be readily accessible to persons outside the vehicle and its location shall be indicated by a clearly visible notice with an indication to when it is in the “ON” position.

The Master switch shall meet EC requirements and approved by BASEEFA

### 3.7.4 Circuit Protection

The following steps should also be taken to ensure protection of the electrical circuits –

3.7.4.1 All circuits, with the exception of the main battery supply and the starter and generator circuits shall be protected with **fuses or circuit breakers** in the feed side of each circuit.

3.7.4.2 **Exposed fuse, wire or links** shall be avoided, unless fitted within a sealed unit.

3.7.4.3 The number of circuits connected to any single **circuit protection device** should not exceed four and the rating of the device shall be compatible with the smallest conductor in any of these circuits.

3.7.4.4 The total **current consumption** of any circuit or group of circuits should not exceed 80% of the rating of a fuse type circuit protection device. Thermal circuit breakers can be safely designed to carry 100% of their rating continuously but this rating shall be limited to a level which gives a temperature rise within the performance specification of the cable insulation.

3.7.4.5 Any **fuse type circuit protection device** shall be designed to open circuit within 10 seconds when passing a current equal to 200% of its normal rating in accordance with BS.2950. For a thermal circuit breaker, a trip time of 30 seconds at 200% of its normal rating is recommended as a maximum.
3.7.4.6 Grouping of circuits shall be so arranged that the failure of a minor circuit should not render a major or obligatory circuit inoperative.

3.7.4.7 All circuit protection devices with the exception of any barrier device for a tachometer or other intrinsically safe device shall be mounted forward of the cab rear wall.

3.8 Brake interlocks – pneumatic/electrical requirements

3.8.1 A brake interlock system, with switches in series, is to be fitted, so that when any of the fuelling nozzles is not secure in its holder, or the inlet coupler, is not stowed, or the platform is not in the fully down position or a power take off is selected, for the inlet hose support bar is down, then the vehicle brakes will be applied, (either main system or parking brake system).

An interlock is not required for the bonding cable clips stowage

Interlock systems which cause the engine to stop are not permitted.

3.8.2 Typically, the air supply system shall consist of a small compressor driven from the PTO, close coupled to or belt driven from a hydraulic motor. A direct engine driven compressor is not acceptable. The air reservoir should have a capacity of at least ten liters. An external charging point is not required.

3.8.3 An intermittent warning beeper with a small red indicator light shall be installed in the cab to indicate if there is insufficient air pressure to operate the interlock/braking system.

Beep intervals shall be adjustable by internal means only; the beep rate can be thus set according to the air charging rate coincident with the need to avoid loss of driver concentration. An on/off switch, wire sealed in the on position, shall be provided for vehicle maintenance purposes.

The device should also operate in the interlock override mode even when air pressure is satisfactory (see 2.3.12)

3.8.4 For PTO operation, a separate warning light shall be provided to clearly indicate when it is engaged. It should not be possible to drive the vehicle with the PTO engaged.

3.8.5 Unless otherwise specified, interlock sensing/actuation shall be initiated by electro-magnetic proximity switches, installed such that there is no loss of magnetic flux to the chassis or sub-frame. The switches shall be de-energized when equipment is not stowed.

Where an all-pneumatic system is used as an alternative, the design shall be such that air is exhausted from the switch when equipment is removed from its stowage.

The interlock system must not be activated inadvertently due to uneven road conditions.

3.8.6 In the event that an interlock is inadvertently activated and the brakes applied while the vehicle is moving, the application shall be slow enough to bring the vehicle to a controlled halt without endangering the driver or passengers.
3.8.7 This specification does not require that the chassis **rear brake warning lights** be illuminated when the interlock system is activated. Separate warning light assemblies, suitable for continuous illumination of 21 watt bulbs, shall be fitted for this purpose.

These lights may be activated whenever the interlock system is activated, either during fuelling or when the vehicle is moving.

3.8.8 Whether the interlock switches are pneumatic or of the electrical reed switch/magnetic proximity type, the system shall be designed to **exhaust air** from the vehicle brake actuating pilot - the pilot then allows pressurized air to apply the brakes. Systems which require a **positive air pressure signal** on the pilot to cause the vehicle brakes to be applied should not be used.

3.8.9 The use of shuttle, check, or **non-return valves** shall be minimized.

3.8.10 All switches and related devices shall be designed, arranged and protected to **withstand** external fuel contact and **environmental** conditions – bright sunlight/high and low humidity/dust and windblown sand/rain/ etc.

3.8.11 **An emergency override** pneumatic switch shall be fitted in the vehicle cab to allow the vehicle to be driven even if interlock is operating to apply the brakes. This override switch is to be clearly marked and wire sealed in the position where it is non operative.

3.8.12 Two large (50mm min. dia.) **warning lights**, protruding 30 to 40 mm, shall be provided in the cab in a prominent position, with shielding as necessary from bright sunlight and to avoid windscreen reflections at night.

- One flashing **red**, to indicate that the override system is in operation.

- One flashing **amber**, to indicate if any interlock has been operated (equipment not stowed).

Small pneumatic ‘blinking eye’ type indicators shall **not be used**.

The color **green must not be used** for any function since it might be understood to indicate that it is safe to drive the vehicle away from an aircraft, even though the interlock warning light is flashing.

### 3.9 Functions and construction

The manufacturer should provide a schematic diagram of the fuelling circuit showing arrangements and lay out of equipment on the module. All components must be located in such a manner as to provide the simplest possible pipe work configuration consistent with required performance and must be readily accessible for removal, operation and maintenance. It is the manufacturer’s responsibility to ensure that adequate space is available before fabrication is started.

When a fuelling component is not specifically mentioned by name, the manufacturer is required to propose a suitable item. When a particular component is specified, the manufacturer may submit for consideration an alternative which is considered to be equal, but no items shall be changed without prior approval of CPC.
3.9.1 Dimensions

Width : Not to exceed 2.8 m
Length : To be as short as practicable
Max Height : Not to exceed 2.6 m

3.9.2 Performance

3.9.2.1 Flow and Pressure Controls

Primary pressure and surge control shall be provided by regulating valves installed in the hose end delivery couplings.

As standard, deadman and secondary pressure control shall be provided by a valve incorporated into the dispenser inlet coupler.

Secondary pressure control shall be operated by using pressure loss compensation devices (venturis) in the deck and reel supply lines (4 inch inlet couplers), the secondary valve shall limit the pressure downstream of the hose end valve (primary) when blocked open, to 3.7 bar (55 lbf/in²) under flow conditions above 500 l/m), and 4.4 bar (65 lbf/in²) at shut off.

Under flow conditions, it is not necessary for the venturi throat (sense) pressure to be the same value as that downstream of the primary valve since the compensation provided by the venturi may be either total (allowing for all downstream losses) or partial (compensating to a point somewhere between the venturi outlet and the outlet of the delivery nozzle.).

The compensation point will vary according to the equipment fitted downstream of the venturi (hose size/length, model of delivery coupling, type of quick disconnect etc.) as well as by venturi adjustment (mixing of venturi throat and venturi inlet pressure).

Flow should pass easily from the venturi throat into the fuel sense line, but be restricted in the reverse direction to prevent undue dissipation of pressure changes into venturis/hoses not being used (i.e. install leaky non return valves).

Venturi/hose system selection should not be arranged by using pilot operated valves signalled from interlock switches.

3.9.2.2 Deadman Control

This function is incorporated within the dispenser inlet coupler.

The standard method of control shall be an electric over air system. However, it shall be recognised that individual units may be required to have an all pneumatic twin hose, direct acting system.
A deadman timer system shall be incorporated.
Single hose pneumatic air bleed systems are not acceptable.

The deadman operation should shut-off in not less than 2 seconds from maximum rated flow with an over-spill quantity of less than 200 litres. Opening time of the valve shall be 5 – 10 seconds.

The deadman operating handle is to be easily operated by one hand and designed to so that when dropped into the ground or stowed it is not normally possible for it to become operative.

Direct pneumatically operated deadman override system shall be provided. Push and hold type Deadman override switch shall be located on the control panel and sealing provision shall be provided.

**Special Note:** Quick disconnect fittings, adequately secured against accidental separation, and shall be installed in fuel sense and air reference lines adjacent to the inlet coupler in order to facilitate removal for maintenance

### 3.9.3 Flow Performance

The maximum flow rate obtainable will depend on various factors such as available inlet pressure, pressure limiting/control system, hose sizes/lengths, hose end coupling components, and downstream flow resistance.

However, target flow rates shall range as follows under the conditions stated:-

- Hydrant Pit valve inlet pressure 8.6 bar (125 lbf/in²).
- Delivery (test rig) inlet pressure 2.1 bar (30 lbf/in²).
- 4 inch API inlet coupler.
- Reel Hose(s) 30m x 2½ inch.
- Deck Hoses 3.4 m (approximately) x 2½ inch.
- Primary (hose end) regulators operating.
- 60 mesh strainers in the delivery couplings
- Inlet hose 10m x 4 inch.

(a) Compensated secondary pressure control, partially blocked (10 lbf/in² D.P.) filter elements, high loss quick disconnects on delivery couplings.

<table>
<thead>
<tr>
<th></th>
<th>Flow Rate (l/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two deck hoses</td>
<td>3,850</td>
</tr>
<tr>
<td>One deck hose</td>
<td>1,925</td>
</tr>
<tr>
<td>One reel hose</td>
<td>1,370</td>
</tr>
</tbody>
</table>

**Note:** With the compensated (venturi) system per above, but with clean filter elements, standard hose end quick disconnects, and 60 mesh strainers (for example), flow rates up to 3,850 l/min shall be obtainable. If the flow rate is higher than this, then the air reference pressure shall be reduced to limit the flow to that value.
An acceptable flow rate for such an arrangement is to be decided following discussions between the CPC and vehicle manufacturer, but 2,270 l/min shall be considered as a minimum under the test conditions specified.

3.10 General constructions requirements

3.10.1 Miscellaneous

3.10.1.1 Where a fuelling component is not specified by name, the manufacturer is required to propose a suitable item for CPC’s approval. Where a component is specified but ‘typical’ or ‘equal’ is stated, the manufacturer should submit details of an alternative items.

3.10.1.2 The meter, all controls and system instruments are to be located close to the ‘operating station’.

3.10.1.3 The fuelling equipment shall be laid out in a compact, neat and tidy manner to give a good appearance to the dispenser, while allowing sufficient free space for ease of maintenance.

3.10.1.4 All hydraulic power for the platform and hose reels is to be derived from engine driven hydraulic system, An electrically operated system is not acceptable.

3.10.1.5 There shall be a minimum clearance of 300 mm between the ground and vulnerable fittings such as sample point and drain line outlets. This distance allows easy access for a bucket, sample jar or small bore hose connection. However, sample points should not be too high off the ground otherwise excessive splashing and spillage could occur.

3.10.1.6 Only open channel corrosion resistant structures are to be used for vertical or horizontal members of the panel and top deck. If the material is Stainless Steel or Aluminum, square or rectangular tubing can be used for the structure. Finished appearance of the unit must be good. All steel sub-assembly components must be grit blasted and Hot Zinc Spray coated or Hot Dip Galvanized before attachment.

3.10.1.7 The design and position of equipment should minimize corrosion. Surface preparation and coating shall be of the highest standard with water traps avoided. All small fastenings shall be of non corrosive materials.

3.10.1.8 All welding shall be continuous where practical. Where stitch welding on exterior components is used, epoxy sealant shall be applied to un-welded areas to prevent water entrapment. All welding must achieve full penetration and any weld splatter must be removed.

3.10.1.9 All pop rivets shall be stainless steel or aluminium with high magnesium alloy (5%) material composition to British Standard 1473 Al Mg5 or similar.
3.10.1.10 The material or finish of fuel sense lines should differ from that of pneumatic lines for ease of identification.

3.10.1.11 Tamper proof covers or locking devices are required on the following controls to prevent inadvertent alteration:-
- the hydraulic flow divider (if fitted)
- the air sense pressure regulator
- hydraulic hose reels rewind speed controls
- platform speed controls
- venturi adjusters (as applicable)

3.10.1.12 Temperature fuses are not required on pneumatic lines controlling the deadman valve. They must not be installed on the fuelling component brake interlock or vehicle primary brake systems.

3.10.1.13 Panels to which the user’s visual manifestation is to be attached shall be completely smooth. Any protrusions shall be ground flat, and depressions shall be filled. If these panels conceal equipment which requires maintenance, they shall be easily removable using quick release, non corrosive fasteners.

3.10.1.14 The material or finish of fuel sense lines should differ from that of pneumatic lines for ease of identification. Plastic tubing must not be used for lines containing fuel.

3.11.1.15 Hoses:-

- Only approved hoses and hose assemblies shall be used. Compliance with recognized international specifications (API 1529/BS3158) is not, in itself, sufficient indication of acceptability.

- Test certificates for hoses to be provided. If hose couplings are removed and refitted, the hose assembly shall be re-tested to proof pressure (40 bar).

- Attachment screw threads shall be BSPP (Whitworth Rohrgewinde).

- The couplings for use with type C hose shall be bolted clamp type meeting VG 85 328/VG.95 950 requirements

- Swaged couplings shall be avoided if possible.

- Hose coupling tails, which contain more than 35% copper, shall be internally tin plated.

3.10.1.16 Push and hold type Deadman valve override system with the sealing provision is to be installed.

3.10.1.17 Where the operation of one hydraulically driven component can adversely affect the operation of another by diminishing oil pressure/supply rate, then a tandem pump type arrangement shall be used. Separate gauges to monitor delivery pressure are necessary.
3.10.1.18 Although individual items are mentioned elsewhere, below is a summary of isolating valve/sealing requirement:-

- Ball valves, manually operated, in the pipe work supply to the deck and reel hoses.

- Ball valve, at fuel entry to the dispenser.  
  (These valves will be used for isolating the hoses during pressure testing, and should thus be suitable for test/differential pressure of 20 bar).

- Ball valve (manual, sealed open), in the fuel sense line.  This is to facilitate in-situ pressure testing of the inlet hose and/or eliminate spillage during sense line replacement/coupler removal.

- Depressurising valve, self closing.

- Ball valve (manual) in series with non return valve, both items in parallel with/across the main delivery line isolating valves-for depressurizing flow and to be closed when hose pressure testing.

- Ball valves (manual) for pressure gauge testing.

- Two inlet valves, spring return and one manual drain valve for the VCFS unit.

- Line isolating and test valves for the differential pressure gauge.

- Drain/sample valves as main pipe drain, and two per filter drain line (4/filter vessel).

- Ball valves (manual) for the product recovery tank- one at inlet in case the automatic depressurizing system fails to open and one for samples/draining.

- Dry break quick disconnects for the inlet coupler fuel/air sense lines, and if required, a dry break quick disconnect fitting in a T connection to suit air operated hydrant pit valves.

- Leaky non-return valves for venturi operation/selection.

3.10.2 Labels and signs

3.10.2.1 All gauges, controls, switches and warning lights are to be labeled using engraved laminated or similar plastic UV light resistant material suitably inscribed to give white letters on a contrasting background or vice versa.

Notwithstanding the above, items whose functions are very obvious do not need to be so identified. Excessive labeling/identification shall be avoided where it results in overcrowding or potential confusion.

3.10.2.2 Self-adhesive labeling or painting (except on the cab) is not acceptable.  Labels inside the cab may be bonded in position but those outside the cab shall be affixed using rivets. Care
shall be taken to ensure that labels are aligned correctly/not askew and located adjacent to the item or control to which they apply.

3.10.2.3 The Secondary Pressure Control Valve ‘fuel sense pressure’ gauge shall be labeled as such. If a venturi pressure control system is fitted (non standard), the gauge shall be labeled ‘venturi pressure’ not ‘fuelling pressure’ or ‘nozzle pressure’.

3.10.2.4 A fuelling circuit and operating instruction plate shall be affixed near the control station.

3.10.2.5 Warning labels shall be attached under the platform advising ‘do not work under lift without safety stays/locks in place’.

3.10.2.6 An instruction plate shall be attached near the pump selector/gear lever or on the dashboard giving clear instructions for PTO engagement/disengagement.

3.10.2.7 Labels for tyre inflation pressure shall be affixed to the wheel arches/mudguards.

3.10.2.8 Filter monitor sample points are to be clearly marked – Filter Inlet, Filter Outlet.

3.10.2.9 Jet A-1 grade stickers (API.1542) shall be fixed to sides, front and rear of vehicle. ‘No smoking’ signs are to be attached to the doors of the cab (International Symbol).

3.10.2.10 The language used for labels and signs, including those for the vehicle fuse box, shall be English.

3.11 Major components and assemblies

3.11.1 Flow Meter

3.11.1.1 Only one positive displacement (PD) flow meter is to be fitted. Turbine type meters are not acceptable for sales purposes.

3.11.1.2 The meter shall be provided with a calibration/test certificate using kerosene or a test fluid with a viscosity representative of Jet A-1.

This meter is available with optional flow direction configurations – left to right or vice versa – horizontal or vertical. For this dispenser, it has been found that a horizontal meter with right hand discharge is preferred.

Compensating devices for fluid temperature should not be fitted.

3.11.1.3 Meter characteristics are to be:-

- Accuracy to be :-
  a) +/- 0.05% at 75% of meter rated maximum flow rate or the maximum achievable if less.
  b) +/- 0.2% at 20% of meter rated capacity.
• Maximum linearity:
  a) 0.18% for 4 inch and 6 inch triple capsule size
  b) 0.15% for 3 inch and 4 inch double capsule size.
  c) 0.10% for 2½ inch and 3 inch single capsule size.

• Repeatability should not exceed 0.02%.

• The indicated reading of the mechanical rate of flow indicator (ROF) shall be accurate to +/- 5% of the true value and measurement units shall be in liters per minute (LPM).

3.11.1.4 The meter register must be fitted with a non-resettable totalizer and a large resettable counter. The right hand wheel or drum must be subdivided. Measurement units shall be in liters.

3.11.1.5 The meter shall be capable of occasional over speeding by 25% without damage or losing set calibration.

3.11.1.6 Meters must be able to operate/count under reverse flow and shall be fitted with a rate of flow indicator.

3.11.2 Reels and hoses

3.11.2.5 Under-wing hose reel shall be of the Catherine wheel type, single width with a minimum core diameter of 600mm, and be located close to the meters and controls.

3.11.2.6 Swivel joints which need grease lubrication are not permitted. In addition, the design of the swivels shall be such that seals are easily accessible and can be replaced without the need to either remove the reels or engage in major disassembly work.

3.11.2.7 The reels are to be free running out and hydraulic power rewind. The control levers (each with lock, reel out rewind functions) are to be situated at the hose reels at control station side.

  Rewind speed shall be adjustable by means of a valve or other device which can be locked/sealed in its set position.

3.11.2.8 Suitable rollers or trays below the reel and rollers at the pull of points are required to ensure proper hose handling, prevent drooping and tangling etc.

3.11.2.9 If chains are used to drive the hose reels, then they should either be self adjusting or some mechanical means of adjustment shall be provided. They should also be fitted with guards if there is a possibility of accidental contact by the operator.

3.11.2.10 Hoses must be easy to pull off the reels under all conditions but adjustable devices to prevent excessive overrun, when pulling stops, shall be provided if necessary.

3.11.2.11 Male threaded connections are required on hose reel outlets. It should not be necessary to remove the reel outlet elbow in order to facilitate hose removal. The female swivel nut connection on the hose at the reel end shall be easily accessible using normal tools.

3.11.2.12 Hose reels must be suitable for pressure testing hoses to 20 bar while connected.
3.11.2.13 Hose clamps at the reel end must be positioned so that projections do not bear upon the next hose layer and cause deformation.

**3.11.3 Elevating platform and hoses/stability aspects**

3.11.3.1 **A double scissor pattern** elevating platform system, hydraulically powered is required behind the cab. **Fork lift type** platforms are not acceptable.

Pivot joints shall be essentially self lubricating and **maintenance free** without the need for regular greasing.

For enhanced stability, the scissor arm support area dimensions shall be such that they are adequate for the length/width of the platform.

**Safety stays** shall be provided and fitted in a convenient position for ready use.

3.11.3.2 **Stability**

A stabilizing system shall be used/deployed when the platform is used, particularly at maximum elevation.

A manual control shall be provided to lower the stabilizers instantly when required. Provision shall be made available to retract the stabilizers immediately when it is required to move the hydrant dispenser in case of an emergency.

3.11.3.3 **Actuation** of the platform would normally be from **2 hydraulic cylinders** spaced and positioned to give even support to the whole platform area. Cylinders, which have a short stroke and are positioned at one side of the scissor arrangement do not, in general, provide adequate stability, and shall be avoided.

3.11.3.4 Hydraulic cylinders shall be of the **displacement type**. Direct acting cylinders with vented ends, with or without a leakage return line, are not acceptable.

The cylinders should incorporate emergency ‘fuses’ or restrictors to prevent rapid collapse in case of a supply hose burst. In addition, there shall be separate **flow control valves** to regulate the rate of ascent and descent.

Ideally, the fuses should not activate even if the descent rate adjusting valve is inadvertently fully opened.

3.11.3.5 The platform is to be **adjustable** from the lowered position of approximately 1.35 meters up to 5.5 meters minimum in about 15 seconds. Internal cylinder stops or blocks on the lower frame may be used to limit the extension of scissors lifts capable of reaching more than 5.5 meters to reach B777/A380 Aircrafts.

If necessary, full elevation may be obtained in two stages.
Safety rails, minimum 975 mm high, toe board, and a self closing gate are to be fitted.

3.11.3.6 The platform width shall be as great as possible without projecting beyond the inlet hose, presenting a risk of head injury when in the lowered position – e.g. when taking samples or unstowing/stowing the inlet coupler. The lower part of the panel on the operating side may be sloped inward to increase accessibility under the platform.

Typical minimum free internal area dimensions shall be at least width of the vehicle by 1200 mm, increased where appropriate for access/standing areas or transition steps.

3.11.3.7 The floor plate material of the platform shall be corrosion resistant, removable, non slip, non abrasive to hoses, strong enough to support the weight of at least 3 people with safety, and have enough open area to allow proper drainage of rainwater. Aluminium open strip type mesh is preferred.

3.11.3.8 Access between the ladder and platform shall be a relatively smooth transition for the operator – typically, a rear facing extension area from the platform would be needed for this purpose. It must be possible for the operator to reach and leave the platform at its highest position.

Special attention shall be paid to safety for the operator. For example, it should not be possible, if the operator is climbing the ladder, for his foot to become trapped should the platform suddenly descend.

Also, ladder sections which are designed to overlap/slide should not be capable of sticking and suddenly releasing/falling.

3.11.3.9 Control lines to and from the platform shall be routed neatly underneath and attached to the scissor horizontal arms using a combination of hose and tubing to suit. Lines should not be bundled/wrapped together such that they form an unsightly assembly separate from or attached to the supply pipe boom (or riser hose if installed as an exception to this specification).

3.11.3.10 Normal control for adjusting platform height shall be a single lever, 3 position valve – raise/stop or neutral/lower. When released, the lever should automatically return to the stop position. A wing contact probe/sensor shall be provided to stop the vehicle engine, upon activation.

An intermittent beep alarm is required to sound when the platform is descending.

3.11.3.11 Emergency lowering valves must be provided – one on the platform and another accessible from ground level. These must function even if the normal platform control is jammed in the raise position.

3.11.3.12 An emergency engine stop button, of the push/lock off type, shall be fitted on the platform guardrail in an easily accessible position.

3.11.3.13 Use of a single large bore/4inch hose is not permitted since this not only tends to be unsightly, but it also requires bifurcation on the platform, and tends to induce problems of kinking when bent tightly, even if swivel are installed.
Instead, the supply shall be via rigid pipe, resting/rolling on the platform at one end, and connected to the main pipe work by a swivel at the other end.

(If, by derogation, a riser hose is fitted, it must not be routed to the side of the platform)

Male threaded hose couplings should not be used on riser hoses. The female swivel nut types are preferred but couplings with integral TW (Tank Wagon) flanged are also permitted where more appropriate.

3.11.3.14 Platform fuelling hoses shall be laid transversely – enter right/stowed left. The comments in item 3.11.3.13 concerning female swivel nut and TW (Tank Wagon) flanged connections also apply at the hose inlet end. Lift assisting devices are not required and should not be needed if the arrangement has been well designed. Isolating valves are not required on platform hoses.

3.11.3.15 The length of the fuelling hoses must be such that there will be no additional strain applied to the aircraft adapter and fuelling nozzle when connected at a height of B777/A380 Aircrafts and the platform is in its lowest position. The hoses may be of slightly different lengths to aid routing on the platform, handling, nozzle stowage, prevention of kinks etc.

3.11.3.16 Independent stowages, with brake interlock switches may be used for the two fuelling nozzles but a combined type requiring only one switch is preferred. A suitable cover arrangement shall be available to protect those from rain.

Stowages must not be placed on the platform floor, but instead, attached to the upper/forward end of the platform side guardrail.

3.11.3.17 No equipment which the operator is likely to use on a routine basis such as sampling equipment or a bonding reel, shall be placed near, alongside or under an overhanging/projecting platform area. This can be a serious safety hazard and lead to injury.

3.11.3.18 Two (02) numbers of Wings stop shall be provided on each side of the platform railing to stop the engine or to lower down platform before collision the aircraft wings by platform railing.

3.11.4 Inlet coupler and hose

3.11.4.1 The inlet coupler shall be stowed on the same side as the operating control station, with dispenser entry on the opposite side (normally the right)

3.11.4.2 The inlet hose shall be connected to the dispenser via a heavy duty swivel joint and 100 mm ball type isolating valve.

3.11.4.3 The inlet hose shall be fitted with heavy castor wheels mounted on metal sleeves (2 wheels/sleeve) secured firmly (with suitable padding) to the hose. The sleeves shall be long enough to provide adequate support, prevent hose kinking when lifted, be used to stow the hose on the dispenser, and shall be able to accommodate fuel sense/air reference lines without them becoming damaged during use.

3.11.4.4 As standard, the hose stowage points shall be the Fluid Transfer type ‘easy lift’/self locking lever type and designed such that the hose remains secured on uneven road surfaces. The hook
which attaches to the hose sleeve shall be adjustable in height in case the 200mm dimension described in 3.4.4.5 is not sufficient in local circumstances. The hose must not be stowed directly on hooks attached to the dispenser.

3.11.4.5 There shall be a clearance between the castor wheels and the ground of approximately 200mm minimum. This is to avoid damage not only by curbs, but also by speed limiting humps in the roadway, ground undulations, drainage channels etc.

3.11.5 Filter monitor

3.11.5.1 Only approved vessels shall be used. These comply with API/EI latest edition requirements and are fitted with an interlock system so that the cover cannot be closed unless all elements are installed.

3.11.5.2 The filter monitor cover should have a swing bolted cover (not flanged through bolts) and be installed to allow easy removal of the elements without the need to remove any other components or panels. It shall be situated to open on the opposite side of the fueller from the ‘operating station’.

3.11.5.3 It should have ¾ inch low point/sample drain lines with ball type isolating valves both at the vessel and at the sampling outlet point on both clean and dirty sides of the filter element mounting/division plate. The sample/drain lines shall be as short as possible and conveniently positioned for use with a bucket or jar – ground clearance is to be approximately 300 mm.

3.11.5.4 The filter monitor is to be fitted with a position type differential pressure gauge. Isolating valves shall be fitted in the sense lines together with a valve to allow fuel from the underside of the piston to be bled to a collection bar for the purpose of verifying that the integral filter is not blocked and that the piston is free to move over the whole of its potential stroke. The low pressure side isolating and piston chamber bleed (drain) valves may be combined into one multiport valve if desired.

Also see item 3.5.8.

3.11.5.5 An Automatic air eliminator is required on the highest point of the filter monitor. The air bleed line is to be taken back into the product recovery tank through a visible flow (Visiflow) indicator, easily identifiable from the operating station.

The flow indicator should not be a plain window type, but should incorporate a ball or spinner to indicate that flow is occurring. The design shall be such that incoming air or vapor will easily displace accumulated liquid downstream – i.e. it shall be self draining.

Air shall be able to pass freely into the recovery tank vapor space, but liquid leakage should pass via a tube to the bottom.

A non-return valve should not be installed in the air eliminator line since this would prevent vacuum relief when necessary and thus make sampling difficult under such conditions.

3.11.5.6 A closed circuit, “Visual Check Fuel Sampler” (VCFS) unit shall be fitted with an adapter for a Shell Water Detector and also with separate connections/valves (self closing) to upstream and downstream of the filter monitor.
3.11.5.7 A suitable 100-mesh Stainless Steel Strainer shall be fitted just upstream to the Filter Monitor to avoid entering large particles such as rust, coatings and welding spatters in the fuel hydrant system. Facilities shall be provided to easily remove and clean the strainer.

3.11.5.8 Re-settable system shall be provided to cut off the refuelling when the differential pressure reaches to 22 psi of filter monitor vessel (JIG Bulletin No. 58)

3.11.6 **Pipe work, flanges and isolating valves**

3.11.6.1 If aluminum alloy piping is used, it must be seamless. If stainless steel pipe is used, then it should also be seamless unless specific approval is sought and given for an alternative. Mild steel is not permitted even if internal surfaces are completely coated by hot tin dip or epoxy lining.

**Thin pressed steel, seam welded piping/flanges** (e.g. Allegheny type) or sections made from spun aluminium half shells/toroids or similar are not permitted.

For visual appearance, pipe sections should normally be **butt welded** together. If it is necessary to use bell end or sleeve type joints, the purchase shall be advised accordingly.

For information, the following stainless steel material has been found to be generally suitable:

- Pipe to ASTM A.312 grade TP.304L, Schedule 5S (0.083” thick).
- Forged flanges to ASTM A.182, grade F.304L.
- Wrought fittings to ASTM A.403, grade WP.304L.

ASTM grades A.321 and A.316 are also acceptable.

3.11.6.2 **Victualic joints and flexible couplings** are not permitted.

The manufacturer must inform the CPC if he considers such a joint or coupling to be absolutely essential. In such cases, the equipment fitted must be of an approved type and be installed such that **isolation and routine testing** can be done to a pressure of **20 bars**. Also see 3.5.7.

3.11.6.3 For compact construction and where appropriate, **flanges** to DIN.28459/28460/28461/28462 **TW pattern** are recommended. Similarly, the **TTMA pattern** would be acceptable providing they are **specially made** to meet the **pressure rating** and service conditions required by this document. Otherwise, flanges shall be to ANSI.B16.5 class 150 pattern dimensions.

3.11.6.4 **Swivel Joints** are to be self lubricating, without the need for grease. Ductile iron swivels are not acceptable even if they are internally coated.

3.11.6.5 All pipe work is to be **fully drainable**. There shall be a drain line with ball isolating valve and Kamlock coupling/sealing cap installed from a point where the bulk of the fuel can be drained.

Other piping low points are to be fitted with minimum ¾ inch BSPPF (mutter) drain points, fitted with screwed plugs (parallel thread with sealing washer).
3.11.6.6 Plugged, parallel threaded connection ports shall be provided on pipe work in accessible positions to permit hose testing to be carried out on the vehicle. Provision shall also be made in the design of the piping layout to permit in situ routine testing of riser hoses (if used instead of/as an exception to a swivel boom) to the elevating platform.

3.11.6.7 All hoses shall be capable of being isolated for routine pressure testing to 20 bars, without the need to remove them from the vehicle.

Accordingly, all pipe work, fittings and isolating valves which would be subject to this pressure shall be suitably rated for ‘hose test use’, even though the normal system hydrostatic test pressure is 15 bars. Isolating valves should not leak in the reverse direction when subject to 20 bars applied from the downstream side.

3.11.6.8 All fuel sample drain, sense and gauge lines shall be stainless steel except in sizes of ½” and above when aluminum can also be used. Where there are individual sections as part of a whole, it shall be possible to dismantle them separately i.e. use compression ferrule type fittings and avoid multiple screwed joints.

Elbow fittings with tapered threads must never be used in parallel threaded ports such as on the differential pressure gauge and filter monitor vessel. This makes it difficult to dismantle and re-assemble the fittings so that they are aligned correctly again. It also encourages injudicious use of liquid sealant and/or PTFE tape and may result in over tightening, cracking and/or distorted and unsightly tubing.

Rather, it is better to use a male threaded stub tube adapter and compression elbow, a banjo fitting or male stud coupling, the tube then being bent in the required direction.

External sealing should preferably be made using bonded seals (Dowty type – metal washers/rings with rubber insert) or equivalent. On differential pressure gauges, a rubber ‘O’ ring face seal or chamfer and seal in accordance with the type used on ports according to USA standards AND.10049/10050 and MS.33649 is also acceptable. Internal end sealing washers are also acceptable where the port is suitable.

3.11.6.9 Valves on drain/sample lines are to be ball type, terminating in Kamlok type couplings with quick release sealing caps secured by retaining wires or chains.

3.11.6.10 Certain materials should not be used. No copper, copper alloys with more than 35% copper, zinc or cadmium shall be in contact with the fuel.

All valves, couplings and swivels etc. in contact with the fuel shall be non-ferrous.

Valves may use aluminum, stainless steel or chromium plated bronze components.

3.11.6.11 Where, as an exception to this specification, isolating valves are actuated by pneumatic cylinders, consideration shall be given to protecting shafts and seals, which could be damaged in a potentially dirty/wet environment, by use of a flexible rubber boot. This may apply even if the shaft is made of stainless steel.

Advice on this aspect shall be sought from the cylinder manufacturer since in some cases, a rubber boot may accelerate rather than prevent wear by ‘inhaling’ and accumulating abrasive particles/moisture during the extension mode.
3.11.6.12 All components, piping and coupling threads are to be BSPP.

3.11.7 Depressurizing and samples – Product recovery tank.

3.11.7.1 A minimum of 140 liter capacity product **recovery tank** of Aluminium or Stainless Steel is required, and equipped with fill point, vent, fire resistant window type **level gauge** and drain. The liquid level must also be easily visible from the control/operating station using a separate gauge if necessary. And also it is necessary to provided high level alarm for the 140 litre product **recovery tank**

3.11.7.2 To prevent the dump tank bursting if it overfills the total **liquid vent capacity** at the maximum design internal pressure should exceed the maximum inlet liquid flow capacity, based on a supply pressure of 10 bar.

**Samples**

3.11.7.3 The **fill point** shall be of an easy to use design incorporating a **funnel**, removable screen filter and down pipe. The fill point cover should prevent the entry of rainwater, be operable by one hand and stay in the open position when so set. Large diameter fill covers/inspection hatches of the type used on vehicle cargo tanks should not be used

3.11.7.4 The **funnel opening** shall be of an adequate size and positioned high enough above surrounding surfaces or obstructions so that a full 5 litre jar can be easily positioned and emptied without spillage.

**Depressurizing**

3.11.7.5 To allow for pressure relief after fuelling, both a manual and automatic **depressurizing system** shall be fitted, fuel passing to the product recovery via a down tube to near the bottom. Splash filling is not permitted.

3.11.7.6 The automatic system shall be activated to reduce the system pressure to 1 bar when the power take-off is disengaged, and all nozzles/couplers are stowed.

3.11.7.7 A failure in the system which signals the automatic valve to go closed when fuelling is taking place would cause the recovery tank to fill rapidly and result in a spillage. Therefore, as an extra safeguard, the automatic valve must also be signalled to close when the **deadman handle** is operated.

3.11.7.8 There should also be a **thermal pressure relief valve** by-pass, sets to11.5 bar, in case the automatic system fails to open when required.

3.11.7.9 In addition, a manual isolating valve (sealed open) shall be installed to isolate entry to the dump tank in case the automatic/thermal relief system fails open during fuelling.

**Emptying**
3.11.7.10 As standard, the tank shall be provided with a manual drain ball valve complete with Kamlok coupling, sealing cap and chain. The outlet shall be easily accessible and 300 mm above ground level.

3.11.8 Control/Operating Station

3.11.8.1 All controls, instruments and operational sampling points (filter) shall be fitted on the left hand side of the dispenser.

A “Visual check Fuel Sampler” (VCFS) is to be fitted and located in the most convenient position, left (at the control station), with outlet connections made directly to the dump/product recovery tank.

3.11.8.2 The following shall be grouped together at the control station:-

a) Sho-Flo air eliminator indicator (with indicator ball).

b) Bulk meter with mechanical register.

c) Delivery line isolation ball valves, lever operated, suitable for 20 bar test pressure.

d) Pneumatic air regulator for pressure control, with rapid response and high capacity for self relieving of excess downstream pressure.

e) Differential pressure gauge with L.P. side test drain point and isolating valves.

f) Gauges to show the pressure for-dispenser inlet, fuel sense to the SPCV, air reservoir, control air reference and hydraulic system.

Fuel and air reference pressure gauges are to be dual calibration (bar and lbf/in²). Accuracy shall be +/-1% full scale overall, +/-0.5% of full scale at mid range. Sensitivity and repeatability shall be better than +/- 0.05% full scale. Range shall be 0-11 bar/160 lbf/in² approximately.

All full and air reference pressure gauges should have a minimum 100mm dial face and be glycerin filled to BS 1780 standard. Air reservoir and hydraulic pressure gauges should have a 63mm minimum dial face.

g) A deadman handle fitted with 15m of Suzy (telephone type) cable, and stowage bucket.

h) Quick disconnect fittings (male and female halves) with isolating valves to permit the inlet, sense point, and air pressure gauges to be tested in situ.

i) Spring return, lever operated de-pressurization valve.

j) Manual isolating valve for the automatic depressurizing system.
k) Push and hold type switch for deadman override

3.11.9 Other Items

The following miscellaneous equipment is to be fitted.

3.11.9.1 Weatherproof **lockable stowage** for two 5 litre containers and miscellaneous sampling equipment shall be provided. Typical dimensions shall be 600mm long x 400mm high x 250mm deep. Standard electrical enclosure boxes, fitted with a wooden internal base panel, shall be supplied. Drain holes should also be provided.

3.11.9.2 A manual **rewind reel**, with 30 meters of **bonding cable** and a substantial clip are to be fitted near the operating station, but well away from the platform.

Another reel shall be installed on the opposite side of the vehicle in a convenient location.

**Characteristics of the reel** and its operation are important. Materials shall be corrosion resistant. It must not over-run on reeling out when the cable is no longer being pulled. It must not be stiff to rewind. It must be possible for the operator to properly/evenly guide the cable onto the reel over its full width, thus avoiding localized coil build up and subsequent loosening/overlaying/tangling. It must not be possible for the reel/cable to unwind due to vibration when the vehicle is moving.

The **cable** is to be very flexible, non corrosive, resistant to kink damage and have substantial tensile strength. Braided copper cable (16/12/006) shall be provided. For protection against abrasion, it must be covered in a suitable, UV light resistant plastic coating. The coating may be transparent (to aid location of faults or damage) or colored bright yellow or have a reflective to aid visual identification of its presence on the ground.

An **interlock switch** is not required at the bonding clip securing point.

3.11.9.3 **Bonding connections** shall be installed at the product recovery (dump) tank and at the sample/drain panel.

3.11.9.4 Two bucket or scabbard type **fire extinguisher** holders shall be provided, one at each side of the vehicle, suitable for 2 Nos. of 9kg BC Type dry powder fire extinguishers. They must be easy to use, at a shallow slope, with water drain holes and of non corrosive material. To ease handling and help prevent the hose from being squashed or damaged, wooden slats either side or the lower center line may be found useful.

Two 9 kg BC type dry powder fire extinguishers shall be provided.

Holders which require clamps or latches must not be used.

3.11.9.5 A 2kg CO₂ **fire extinguisher** shall be fixed in an accessible position in the **cab**.
3.11.9.6 Standard safe refuelling ladder shall be provided with a hydrant Dispenser and provision shall be provided to store the ladder on the Hydrant dispenser.

SECTION 4: TESTING AND TEST REPORTS

4.1 Testing may be performed before or after finish painting but if done before, note that some checks will need to be repeated depending on the equipment removed.

4.2 On completion, hydrostatic pressures of 15 bars or 20 bars (as applicable) shall be applied to the fuelling circuits using the product, followed by performance/functional tests to check that all items are in good working order.

These tests shall be repeated in the presence of CPC representative/inspector if so requested.

4.3 The Manufacturer shall provide a set of filter elements for flow testing.

4.4 Proof is to be furnished that the filter monitor and strainer have been hydrostatically tested to the design test pressure.

4.5 A calibration/test certificate for the flow meter shall be provided.

4.6 A complete functional test on all items of equipment shall be undertaken prior to shipment of the Hydrant Dispensers.

4.7 An Inspection test report shall be forwarded to CPC, with a copy also being included in the vehicle operating/maintenance manual.

SECTION 5: EXTERNAL PAINTING

5.1 General

The vehicle is required for operation in a humid, saliferous, tropical climate having a humidity of about 90% maximum, bright sunlight and a daily average air temperature range of 35°C/40°C. Surface temperatures will be much higher.

Coatings should also not be harmed or readily discolored by contact with grease, oil hydraulic fluids, fuels or routine pressure/chemical washing.

It is therefore essential that surfaces to be painted are correctly prepared and properly coated, with particular attention to hidden surfaces to avoid early breakdown of paint film. The final finish must be smooth and free from specks and runs.

The mating faces of bolted assemblies must be sealed with a mastic type compound to prevent corrosion resulting from the entry of water.
Any components or assemblies which **ought not to be painted**, such as nozzles, hoses, interlock switches, screw threads, adjusting devices, pressure/vacuum valves, data plates etc., shall be removed or suitably masked. **Open ports** shall be securely capped.

5.2 **Surface Preparation, Priming and finish Painting**

The following information is provided as a general guide but notwithstanding this, the paint manufacturer’s advice on selection and application instructions should always be followed.

The **applied must be experienced** with suitable premises, all necessary equipment and safety facilities and be able to use his own skill and judgment to provide a high quality and durable finish.

5.2.1 **Preparation/Priming**

5.2.1.5 **Bare steel** shall be bright/de-greased before painting. If de-rusting chemical solutions are used, all traces shall be removed by neutralizing/washing. Tanks and steelwork with mill scale or corrosion shall be grit-blasted to BS.4232:1967 2nd Quality Swedish Standard Sa.2½, resulting in a fine surface profile no coarser than fine/medium grade as defined by ISO.8503. After blast cleaning, all contaminants shall be removed by vacuum/dry compressed air/brush and de-greased before Hot Zinc Spray coating or Hot Dip Galvanizing.

It is vital that the process of **blast cleaning** is carried out by a competent operator to ensure that the correct surface condition and blast profile is achieved. Also, great care must be taken to **protect components** such as lights, electrical wiring, wheel hub bearings, hydraulic equipment and also to prevent ingress of the highly abrasive media into components such as the recovery tank or engine.

5.2.1.6 After grit-blasting or de-rusting by chemical solutions, **Hot Zinc Spray coating or Hot Dip Galvanize** shall be done over all the steel structures and the steel plates in hydrant dispenser module.

5.2.1.7 Although, after **Hot Zinc Spray coating or Hot Dip Galvanize** over the surface blasted to fine/medium grade can have peaks measuring in excess of 75 microns. It is therefore essential to achieve 50 micron dry film thickness of primer when measures above the peaks.

Synthetic enamel primer of zinc chromate primer may be used. Enamel primer shall be used if subsequent coats of paint are to be applied without delay. Zinc chromate primer shall be used if there is likely to be a delay of more than 3 days after priming. Vehicles, which are transferred to another factory, shall be given two coats of zinc chromate before dispatch.

5.2.1.8 Where primed steel has a coat which is adhering well, is not affected by paint solvents, is not soft, brittle, chalking, flaking, powdery or showing signs of humidity blistering, and there is not rusting, the priming coat shall be washed, de greased and rubbed down wet.

If in doubt, the coat shall be removed completely. Also remove the coating from any areas where it is excessively thick.

The underlying surface shall be retreated as described in 5.2.1.1. Synthetic enamel primer shall then be applied and allowed to dry.
5.2.1.9 Where primed steel has a coat which is adhering well, is not affected by paint solvents, is not soft, brittle, chalking, cracking, flaking, powdery or showing signs of humidity blistering, and there is not rusting, the priming coat shall be washed, de-greased and rubbed down wet.

If in doubt, the coat shall be removed completely. Also remove the coating from any areas where it is excessively thick.

The underlying surface shall be retreated as described in 5.2.1.1. Synthetic enamel primer shall then be applied and allowed to dry.

5.2.1.10 Galvanized Steel plate or electrically deposited zinc coatings, such as on Zintec sheet shall be treated with Lithoform or with an approved hot phosphate surface treatment. Alternatively, zinc coated steel work may be de-greased and given a thin coat of phenolic modified wash primer before painting. It should not be abraded.

5.2.1.11 Aluminium or aluminium-alloy sheet, if filling is not needed, shall be de-greased and treated with a thin coat of wash primer before painting. It should not be abraded.

5.2.1.12 Wood surfaces shall be abraded smooth and dry before priming/painting.

5.2.1.13 Glass fiber reinforced plastic shall be de-greased and lightly abraded before priming/painting.

5.2.2 Preparation/Finish Painting

5.2.2.1 Further Preparation:-

Any indentations, welds or rough uneven surfaces shall be filled with stopping putty or brushing filler applied in thin layers at suitable intervals. When completely dry/cured, the surface shall be rubbed down wet with waterproof abrasive paper.

5.2.2.2 Finish coating:-

The cab (if necessary) and other components (as required) shall be under coated and top coated according to the paint manufacturer’s instructions.

Particular care must be taken to achieve the correct film thickness at each stage, taking into account the surface texture/finish of the item being painted. If necessary, additional coats shall be applied but excessive thickness shall be avoided as this can reduce the durability of the coating.

Specks and runs, shall be avoided and in the case of panels, will not be accepted.

5.3 Color scheme / visual identity
5.3.1 Half of the cab, fueller trailer shall be painted in white (RAL 9010) and the lower half in “Signal” red (RAL 3000). The chassis and frame shall be painted in Grey (RAL 7000).

5.3.2 Hydrant dispenser module, the chassis, recovery tank, mudguards, wheels, fuelling components and paneling shall be painted in Grey. For the vehicle exterior, a high gloss finish is necessary. However, the confirmation of the colour scheme will be notified after the Tender is being awarded Emblems and lettering will be done locally.

SECTION 6: INSTRUCTION MANUAL

6.1 Quantity

6.1.1 Each Hydrant Dispenser shall be supplied with the normal operating and routine maintenance manuals in English provided by the chassis manufacturer.

6.1.2 One Operation manual and One Spare Part Catalogue covering the remainder of the vehicle and added interface equipment shall be provided for each of the Hydrant Dispensers.

A draft of the manual shall be submitted to CPC for approval prior to dispatch. All instructions, operation guidelines and maintenance guidance shall be drafted in a simple manner even layman could understand.

6.1.3 One workshop manual for the chassis and One Spare Part Catalogue shall be provided for each of the Hydrant Dispensers.

6.1.4 The cost of these manual shall be included in the Schedule of prices.

6.2 Miscellaneous sections

6.2.1 A title page showing manufacturer’s name/address/telecommunication details, customer, purchase order number, works order/serial number.

This shall be followed by 4 colour photographs large enough to identify main components (or colour photocopies thereof) showing the vehicle right and left views, the rear, and top.

6.2.2 An index/contents list showing the various sections and list of illustrations.

6.2.3 A list of applicable specifications and standards – e.g. BS, ISO, EN etc

6.2.4 General safety precautions relating to workshop practices, fire prevention/precautions, toxic vapors/fumes, the battery, welding mains electrical equipment, asbestos packing (if any). Also list sources of potential danger when driving, fuelling etc. and stress that the equipment should only be operated by personnel qualified to do so by the user company.
6.2.5 A list of threaded fastener sizes used – metric /UNC/UNF/BSW/BSF etc., with spanner/hexagon sizes and recommended torque values.

6.2.6 Basic vehicles data chassis details (make/model/VIN/engine model power output serial no. wheel base etc.) actual measured weights (make/model/VIN/engine model power output serial no. wheel base etc.) actual measured weights per axel when loaded tyres/pressures - actual dimensions (heights of cab, platform, overall length, width) - scissor lift fabrication number.

6.2.7 General Description

This shall be written to aid understanding of the more complex details later in the manual. Content can be short or long according to the other information provided. A simple diagram shall be included.

6.2.8 Operating Instructions

To be read only at first, in preparation for carrying out the commissioning procedure (6.2.9).

To cover such topics as – un-stowing and stowing the inlet hose - connecting the hydrant coupler - platform operation - reeling out and rewinding the hose reels - starting flow - stopping flow - depressurizing the hoses - use of emergency engine stops - use of the sampling cabinet and dump/recovery tank - use of the interlock override - etc.

6.2.9 Commissioning procedure

It may seem illogical to place this section here, after the operating instructions, but it is essential that the operator has a full understanding of the system before undertaking this procedure.

To cover topics such as packing removal – installing (as applicable) nozzle, inlet coupler/hose, filter elements, strainer, fire extinguishers bonding reels or anything else such as lights, fuses and relays which may have been removed for safe keeping during shipment/transportation – purging air from the fuelling pipe work – purging air from the SPCV/deadman valve – flushing the hoses – checking/cleaning nozzle strainers – clearing of sample tank and filter sample/drain lines – etc.

6.3 System detail sections

These sections are needed to describe very clearly, details of the various systems as follows. For clarity, it is suggested that numbered items on circuit drawings also be given a letter prefix. Where the systems interface, the diagrams should so indicate and thus, the related or linked item will be easier to identify.

It is suggested that the following letter prefixes be used:-

A - Fuelling system – e.g. A5 Meter, A17 Fuel sense pressure gauge.
B - Pneumatic system – e.g. B17 Emergency stop control, B9 Interlock override switch
C - Hydraulic system – e.g. C23 Cylinder, C4 Flow control valve, reel.
D - Electrical system – e.g. D 35 Interlock switch, D 12 I/S relay unit.
E - Miscellaneous – e.g. E 17 Drawbar coupling, E6 Intake hose carriage.

Each of these sections should include a clear circuit diagram, on large size paper (A3 folded) for clarity if necessary, with all components given a discreet item number such as C5, D23 etc with any interfaces to other systems shown.

Where components can fall into two categories, it is suggested that the code letter to apply is that for the first diagram in which it appears.

For example, a pneumatically operated pressure switch to activate a warning light would appear as code B in both pneumatic and electrical system.

Each section should also include a table showing for example, the following information:-

<table>
<thead>
<tr>
<th>Item</th>
<th>Part No.</th>
<th>Description</th>
<th>Qty.</th>
<th>Location</th>
<th>Make</th>
</tr>
</thead>
<tbody>
<tr>
<td>A16</td>
<td>540K44551139</td>
<td>100mm ball valve</td>
<td>1</td>
<td>Left, platform supply line</td>
<td>Renus</td>
</tr>
</tbody>
</table>

Where it is not feasible to describe the item location such that it could be easily found, then simple sketches or photographs shall be provided.

For wholly bought out/unmodified items, original manufacturer’s part numbers must be used. Where items have been purchased and modified or added to by the Hydrant Dispenser manufacturer to form a distinguishable separate assembly, then preferably, the separate part numbers shall be given. Where this is really not feasible a new unique part number may be given and the Hydrant Dispenser manufacturer may be mentioned as the supplier.

6.3.1 Fuelling system A

Comprising – Diagrams of the fuelling circuit and operating panel, parts list, operating/ functional descriptions of fuelling, secondary pressure control system, depressurizing etc. Reference shall be made to the item numbers on the circuit and what occurs when each control is selected.

6.3.2 Pneumatic system B

Comprising - A diagram of the pneumatic circuit including inter-connections with other systems, parts list, operating/functional descriptions of deadman control system (if pneumatic), air reference supply to the SPCV, brake interlock system, engine stop control system etc.

Reference shall be made to the item numbers on the circuit and what occurs in what sequence to what component, where air can go and does go under various circumstance.

6.3.3 Hydraulic system C
Comprising - A diagram of the hydraulic circuit including, parts list, descriptive information on safety, cleanliness, the reservoir, pump, pressure relief and flow control system, hose rewind and elevating platform operations/controls.

Reference shall be made to item numbers on the circuit and where the oil travels in each situation.

Under ‘Trouble Shooting’ as per item 6.4.2 cause of action to be taken to remedy a ‘stuck up’ platform and to re-set various flow controls shall be included.

This may be necessary following injudicious opening of the platform cylinder outward flow control, allowing excess flow rate and triggering of the cylinder emergency fuses/restrictors. In turn, this would cause the platform to stick in the up position or only descend exceptionally slowly.

6.3.4 Electrical system D

Comprising – A diagram of the electrical circuit including wire colors and interconnections with other systems, parts lists, operating/functional descriptions of operations lights, obstruction lamps, deadman system (if electrical), platform alarm, brake interlocks (if electrical switches), brake override warning light, battery isolator, alternator protection circuit etc.

6.3.5 Miscellaneous items E

Comprising - Itemized parts list/location description etc. Components to be included with diagrams if necessary can include such things as sampling cabinet, chain tensioners, hose reels guide rollers, draw bar coupling, bonding reel, nozzle stowage assemblies/shrouds, scissor lift assembly, cab fire extinguisher, PTO drive shaft modifications, recovery tank contents gauge, earthing/bonding lugs, tamper proof covers for adjusters, etc.

6.4 Maintenance

6.4.1 Routine inspection and lubrication

This part of the manual applies to the items and equipment installed by the dispenser manufacturer as opposed to the chassis itself.

Aspects covered should include recommended lubricants and schedules – daily, weekly, monthly, 3 monthly, 6 monthly etc as appropriate.

Typical details might be:

Daily - check air reservoir drain

Weekly - check/top up hydraulic oil reservoir level, grease drawbar coupling pin, top up the pneumatic system lubricator and drain water.
Monthly - Apply a few drops of oil to the platform gate hinges, air cylinder pivots pins, deck nozzle stowage cover hinges, inlet hose ‘easy lift’ pivots. Apply grease to spring loaded catches.

Quarterly - Check and top up oil level in bulk meter gear box. Check/replace oil filter in hydraulic system. Clean the pneumatic system filter elements. Lubricate the hose reel rewind chains.

6.4.2 Trouble shooting

Clearly it is not possible to cover every eventuality and difficulty which might be encountered in a complex system. Sections covering the fuelling, pneumatic, hydraulic, and electrical systems shall be good enough for users to educate themselves and decide what may be causing trouble.

Nevertheless, the following major difficulties shall be addressed and suggestions made to investigate and remedy the situation.

- Brakes cannot be released
- Interlock action to apply brakes slow or not working
- No fuel flow when in the fuelling mode.
- Flow rate unusually low in the fuelling mode.
- Release of the deadman handle does not stop flow or flow stops too slowly
- Elevating platform will not rise, stop rising or lower
- PTO pump will not engage or disengage
- Reels will not rewind, lock or free-wheel out
- Stabilizing legs or inlet hose lift bar will not go down/retract
- Air pressure developed is to low.

6.4.3 Recommended set of spare parts

Two separate lists of spare parts are required as given bellow.

(a) Normal spare part requirements for approximately 2 years of operation, on a per unit basis.

(b) Major maintenance spare part requirements anticipated over a 5 year period, on a per unit basis.

6.4.4 Component servicing and repair

In this section, it will not be sufficient only to enclose manufacturers’ general leaflets and information sheets.

In some cases, for the more simple assemblies, it will be sufficient to provide only the drawings covered by item 6.6 below.
In other cases, **complete and current information** will be required for such items as:

- Bulk meter
- Platform hydraulic cylinders
- Hose reel swivels
- Fuelling nozzles and regulators
- Inlet coupler/secondary pressure control/deadman valve
- Filter monitor element changing
- Strainer mesh cleaning
- Differential pressure gauge
- Hydraulic pump and motors
- Automatic depressurizing valve
- Dial pressure gauge
- Air pressure regulator
- Interlock switch

### 6.5 Test Certificates

Certificates shall be provided for the recovery tank pressure test, bulk meter calibration, the 15 bar general circuit pressure test, the 20 bar system test downstream of the closed delivery line isolating valves/upstream of the inlet isolating valve.

In addition, the manufacturer should enclose a copy of his own checklist/test schedule/results.

### 6.6 Illustrated parts list and drawings

General arrangement, sub-assembly and any useful detail drawings or descriptive sketches, which are not included elsewhere, shall be placed here, together with an index.

The aim shall be to provide as much information as possible in the form of an “illustrated catalogue” of components, with readily available (not necessarily specially created) explored views and parts lists so that locally, equipment can be dismantled/repaired if necessary without specialized overhaul instructions to hand.

As necessary, the drawings shall be marked with the item number from the detailed parts lists and placed in sections A, B, C, D and E.

Full size drawings shall be carefully folded and kept in plastic pockets, together with any other booklets and leaflets and leaflets covering complete units, such as pressure control equipment, meters, etc.
SCHEDULE – A

Schedule of Prices
TENDER FOR THE DESIGN, MANUFACTURER AND SUPPLY OF 04 NOS.
AVIATION FUEL HYDRANT DISPENSERS

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Unit Price (FOB.)</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>Cost for 04 Units (FOB)</td>
<td></td>
</tr>
<tr>
<td>03</td>
<td>Less Discount, (if any)</td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>Total Insurance Charges for 04 units</td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>Total Freight Charges for 04 units</td>
<td></td>
</tr>
<tr>
<td>05</td>
<td>Total C I F Cost for 04 units</td>
<td></td>
</tr>
<tr>
<td>06</td>
<td>Cost of Pre-Shipment Inspection by a Third Party (as per clause 2.2.1 of COC), for 04 units</td>
<td></td>
</tr>
<tr>
<td>07</td>
<td>Cost of Witness of Inspection by three (03) CPC officials as per Claus 2.2.2 &amp; 2.2.3</td>
<td></td>
</tr>
<tr>
<td>08</td>
<td>Cost of Commissioning &amp; provision of Operations and Maintenance Training for CPC Staff (as per clause 2.3 of COC)</td>
<td></td>
</tr>
<tr>
<td>09</td>
<td>Cost of Workshop Manual and Spare Part Catalogue for the Engine &amp; Chassis of the 04 units (as per Clause 1.2.1 of ITB)</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Agency Commission,( if any)</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Grand Total for 04 units</td>
<td></td>
</tr>
</tbody>
</table>

Currency: ...........................................
Grand Total for Four (04) units in Words: .................................................................................................................................

Offer Validity: .........................................................
Delivery Period: ..................................................
Payment Terms: ..................................................
Country of Origin: ..................................................
Country of Manufacturer: ...........................................
Warranty Condition: ..................................................
Name of Bidder: ..................................................
Address: ..........................................................

Signature of Bidder: ..........................................
Company Seal:(Rubber Stamp)
Recommended Makes of critical components of the Hydrent Dispenser

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Recommended Make(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Inlet Coupler</td>
<td>Carter Model 64910-USA</td>
</tr>
<tr>
<td>2.</td>
<td>Inlet hose</td>
<td>Elaflex-German</td>
</tr>
<tr>
<td>3.</td>
<td>Filter Monitor</td>
<td>Facet-UK</td>
</tr>
<tr>
<td>4.</td>
<td>DP gauge</td>
<td>Gammon-USA</td>
</tr>
<tr>
<td>5.</td>
<td>Flow Meter</td>
<td>SATAM -France</td>
</tr>
<tr>
<td>6.</td>
<td>Deadman system</td>
<td>Fluid Transfer-UK</td>
</tr>
<tr>
<td>7.</td>
<td>Reel hose</td>
<td>Elaflex-USA</td>
</tr>
<tr>
<td>8.</td>
<td>Dock hoses</td>
<td>Elaflex-USA</td>
</tr>
<tr>
<td>9.</td>
<td>Pressure fuelling nozzles</td>
<td>Cater Model 64200-USA</td>
</tr>
</tbody>
</table>
ANNEXURE-A

Form of Bid

To: The Chairman
Ministry Procurement Committee,
c/o Procurement & Stores function,
Ceylon Petroleum Corporation
1st Floor,
No. 609,
Dr. Danister de Silva Mawatha,
Colombo 09,
SRI LANKA.

From: ……………………………….
………………………………
………………………………

Sir,

A-1 Having familiarized ourselves with the formal request for Instruction to Bidders and Conditions of Contract, Technical Specification for Design, Manufacturer and Supply of 04. Nos. of 3,850 Liters/minute capacity Aviation Fuel Hydrant Dispensers we offer to complete the whole of said services in conformity with the said document.

A-2 unless and until a formal Agreement is prepared and executed this Bid together with your written acceptance thereof shall constitute a binding contract with us.

A-3 We understand you are not bound to accept the lowest or any Bid you may receive.

A-4 The Bid we are offering is complete and fulfils the requirements discussed in the Technical Specifications of the Bid document.

A-5 We agree to abide by this Bid for the period of Ninety One (91) days from the date of opening of the same. Bid Conditions and prices quoted shall remain binding upon us and may be accepted at any time before the expiration of the period.

A-6 We agree to be bound by the Bid, Bid Conditions, Technical Specifications and Performance Guarantee.

A-7 We affirm that the said items will be delivered within …………..months after we receive notice of acceptance of our Bid / establishment of the Letter of Credit from the CPC.
A-8  We offer the lump sum fixed price of (foreign cost in figures) ........................................ (in words) ................................................................. Sri Lanka Rupees (local cost in figures) ................................ (in words)

for Design, Manufacturer and Supply of 04. Nos. of 3,850 Liters/minute capacity Aviation Fuel Hydrant Dispensers to CPC as detailed out in this Bid document and details of the lump sum price is as given in the Schedule of Prices. We agree that it is open to the Ministry Procurement Committee to reject this Bid or to accept.

Dated this ................................ day of ...........................................2015.

Signature ................................................. in the capacity of.................................................................

.................................................................

................................................................. duly authorized to sign bids for and on behalf of:

Name .................................................................

Address .................................................................

.................................................................

.................................................................

Witnesses:

1. Signature: ................................................. 2. Signature: .................................................

Name: .................................................  Name: .................................................

.................................................................  .................................................................

Address: .................................................................  Address: .................................................................

.................................................................  .................................................................

.................................................................  .................................................................

Company Seal (Rubber Stamp)
Format for Bid Security

[This Bank Guarantee form shall be filled in accordance with the instructions indicated in brackets]

………………………[insert issuing agency’s name and address of issuing branch or office] ……………

Beneficiary : ……………[ insert (by PE) name and address of Employer/ Purchaser]

Date : ……………[ insert (by issuing agency) date]

BID SECURITY NO. : ……………[insert (by issuing agency) number]

We have been informed that ……………[insert (by issuing agency) name of the Bidder; if a joint venture, list complete legal names of partners] (hereinafter called “the Bidder”) has submitted to you its bid dated ……………[insert (by issuing agency) date] (hereinafter called “the Bid”) for execution/ supply [select appropriately] of [insert name of Contract] under Invitation for Bids No. ……………….. [insert IFB number] (“the IFB”)

Furthermore, we understand that, according to your conditions, Bids must be supported by a Bid Guarantee.

At the request of the Bidder, we ……………[insert name of issuing agency] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ……………[insert amount in figures] ……………[insert amount in words] upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder.

   (a) has withdrawn its Bid during the period of bid validity specified; or
   (b) does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter “the ITB”) of the IFB; or
   (c) having been notified of the acceptance of its Bid by the Employer/ Purchaser during the period of bid validity, (i) fails or refuses to execute the Contract Form, if required, or (ii) fails or refuses to furnish the Performance Security, in accordance with the ITB.

This Guarantee shall expire: (a) if the Bidder is the successful bidder, upon our receipt of copies of the Contract signed by the Bidder and of the Performance Security issued to you by the Bidder; or (b) if the Bidder is not the successful bidder, upon the earlier of (i) our receipt of a copy of your notification to the Bidder that the Bidder was unsuccessful, otherwise it will remain in force up to ……………[insert date]

Consequently, any demand for payment under this Guarantee must be received by us at the office on or before that date …………………………………

[signature(s) of authorized representative(s)]
Form of Agreement

This Agreement made this ________________ day of _________________ 2015, by and between CPC established by an Act of Parliament namely Act No. 28 of 1961 & having its registered Office at No. 609, Dr. Danister de Silva Mawatha, Colombo 09, in the Government of the Democratic Socialist Republic of Sri Lanka (hereinafter called and referred to as the “CPC” which terms of expression as herein used shall where this context so requires and admits mean & include the CPC & its Successors & assigns) of the one part and ____________________ of ________________________ a Company duly incorporated & having its registered Office at _______________________________ (hereinafter called the “Supplier” which terms of expression as herein used shall where this context so requires and admits mean & include the ________________ & its successors & assigns) of the other part.

Whereas the CPC is desirous that the Goods known as the Design, Manufacturer and Supply of 04 Nos. of 3,850 Liters/minute capacity Aviation Fuel Hydrant Dispensers shall be supplied by the Supplier and has accepted a Bid by the Supplier for the supply of such equipment, and the remedying of any defects therein.

The CPC and the Contractor agree, as follows:

- In the Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract and Supplier’s scope of work hereinafter referred to.

The following documents shall be deemed to form and be read and construed as a part of this Agreement.

- Letter of Acceptance dated
- The Technical Specifications
- The Bid dated
- The Conditions of Contract
- The Completed Schedules
- The Supplier's Proposals

In consideration of the payments to be made by the CPC to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the CPC to supply and remedy any defects therein, fit for purpose in conformity in all respect according to the provisions of the Contract.

The CPC hereby covenants to pay the Supplier in consideration of the Supply and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Agreement at the times and in the manner prescribed by the Agreement.
In Witness whereof the parties have hereunto caused this Agreement to be executed the day, month & year afore written.

<table>
<thead>
<tr>
<th>Authorized Signature of the Chairman or Managing Director of CPC</th>
<th>Authorized Signature of the Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>In the presence of</th>
<th>In the presence of</th>
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<tbody>
<tr>
<td>Name</td>
<td>Name</td>
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<tr>
<td>Signature</td>
<td>Signature</td>
</tr>
<tr>
<td>Address</td>
<td>Address</td>
</tr>
</tbody>
</table>
FORMAT FOR PERFORMANCE GUARANTEE

…………………………………….[issuing Agency’s Name and Address of issuing Branch or Office]……………..

Beneficiary : …………………………….[Name and Address of Employer] …………………………….

Date : …………………………………..

PERFORMANCE GUARANTEE NO : …………………………………

We have been informed that ………………….[name of Contractor/ Supplier] (hereinafter called “the Contractor”) has entered into Contract No. …………………….[reference number of the contract] dated ……………………with you, for the ……………….. [insert “ construction”/ “Supply”] of ……………………..[name of contract and brief description of Works] (hereinafter called “the Contract”)

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Contractor, we ……………………….. [name of Agency] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ……………..[amount in figures] (…………………) [amount in words], such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the ……………day of ……………, 20… [Insert date, 28 days beyond the scheduled contract completion date] and any demand for payment under it must be received by us at this office on or before that date.

…………………………………

[ Signature(s)]
COMPLIANCE / DEVIATIONS SHEET

Please mark “√” if complied with the tender requirement or mark “X” if there is any deviation and indicate the deviation in the cage provided.

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification/Condition</th>
<th>Complied</th>
<th>Deviation if any</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Name of Fuel Hydrant Dispenser Manufacturer and Country of Origin as per ITB 1.4.1</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Company profile of the Fuel Hydrant Dispenser Manufacturer as per ITB 1.4.2</td>
<td>General</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Detailed technical specification of the Fuel Hydrant Dispenser model offered covering chassis and all major components as per ITB 1.4.3</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Certificate from the Manufacturer that the Fuel Hydrant Dispenser model offered is of currently in manufacture and availability of spares for a minimum period of ten (10) years as per ITB 1.4.4</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Name and address of the Accredited Local Agent for the Hydrant Dispenser along with Legally Executed Power of Attorney issued by the Fuel Hydrant Dispenser Manufacturer and valid copy of Certificate of Registration issued by the Registrar of Companies as per ITB 1.4.5</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Registration certificate of Accredited Local Agent for the Aviation Fuel Hydrant Dispenser issued by Registrar of Public Contract in terms of the Public Contract Act No. 3 of 1987 on submission of Form PCA3 as per ITB 1.4.6</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Name and address of the Accredited Local Agent of the Chassis manufacturer along with a copy of the letter of authorisation issued by the Chassis Manufacturer and valid copy of Certificate of Registration issued by the Registrar of Companies in Sri Lanka as per ITB 1.4.7</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>A Commitment Letter from the Accredited Local Agent of the Chassis Manufacturer declaring the agreement for providing after sales services &amp; supply of spares for the next ten (10) years period as per ITB 1.4.8</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Conformation from the chassis manufacturer that the engine model offered meets the diesel fuel specification (Clause 1.5 of the technical Specification) available in Sri Lanka</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Documentary evidence provided by the accredited local agent on import &amp; supply of minimum of thirty (30) units of Light Trucks and heavy vehicles(Commercial Vehicles) of the Chassis Brand offered to Sri Lankan market during the past 10 years as per ITB 1.4.7</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>Specification/Condition</td>
<td>Complied</td>
<td>Deviation if any</td>
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<tr>
<td>11</td>
<td>Inspection / Performance Testing criteria of Fuel Hydrant Dispenser and agreement to furnish test certificates on delivery of the Fuel Hydrant Dispensers as per ITB 1.4.8</td>
<td>Necessary</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Manufacturing Schedule and Manufacturing Quality Plan as per ITB 1.4.9</td>
<td>Necessary</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Past supply records of Fuel Hydrant Dispensers on commercial use in the International Market for the last 10 years, of which minimum of Fifty (50) units shall be supplied to International Airports in at least Ten (10) different countries outside the country of manufacture together with supplier details and user recommendation as per ITB 1.4.10</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Every Bidder shall specify the conditions of warranty offered on time/distance basis for the Chassis and Fuel Hydrant Dispenser module separately as per ITB 1.4.11</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>A Commitment Letter from the bidder that all major breakdowns and / or repairs of Chassis, Engine and Fuel Hydrant Dispenser module within the warranty period can be undertaken on urgent basis through his Local Agent as per ITB 1.4.12</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>A list of recommended spare parts with prices separately, for Chass &amp; Fuel Hydrant Dispenser module for two (02) years operations as per ITB 1.4.13</td>
<td>Necessary</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>A dimensional drawing indicating key dimensions of the layout of the entire Fuel Hydrant Dispenser. It shall include dimensions of the platform, operational panel, height of the Fuel Hydrant Dispenser, width of the Fuel Hydrant Dispenser as per ITB 1.4.14</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Agreement to supply the mandatory recommended makes of criticle equipments</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Flow Schematic Diagrams for Fuel, Hydraulic, Pneumatic Systems and Electrical Wiring as per ITB 1.4.15</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>A copy of the certificate of approval to verify the compliance of ADR regulation for the chassis offered</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Schedule of Prices (Schedule A) duly completed and signed as per ITB 1.4.16</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Bid validity per clause 1.6</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Form of Bid (Annexure A) duly completed and signed.</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Bid Security (as per Annexure B).</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Agreed with Shipment &amp; Delivery conditions per Clause No. 2.6</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Agreed with Delivery Period per Clause No 2.6.3</td>
<td>Necessary</td>
<td></td>
</tr>
<tr>
<td>Specification/Condition</td>
<td>Complied</td>
<td>Deviation if any</td>
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<td>----------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>27 Document Fee &amp; Bid deposit Paid for each Principal Bidder</td>
<td>Mandatory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 Agreed with Payment Terms &amp; Other Requirements</td>
<td>Mandatory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29 Agreed with Penalty on Delayed Delivery per Clause No. 2.8 of COC</td>
<td>Mandatory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 Agreed with the Requirement for Pre-Shipment Approval of CPC</td>
<td>Mandatory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31 Selected third Party Inspection Company name Given</td>
<td>Mandatory</td>
<td></td>
<td></td>
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<tr>
<td>32 Agreed to submit third Party Inspection Certificate</td>
<td>Mandatory</td>
<td></td>
<td></td>
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<tr>
<td>33 Agreed to submit Certificate of quality</td>
<td>Mandatory</td>
<td></td>
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<tr>
<td>34 Name &amp; Address of Local Agent &amp; Agency Commission Given (if any)</td>
<td>Necessary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35 If Relevant, VAT Registration No. Given</td>
<td>Necessary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36 Deviations from Specifications, terms &amp; conditions, if any, indicated</td>
<td>Mandatory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37 Other Deviation, if any</td>
<td>Optional</td>
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</tbody>
</table>

Failure to furnish mandatory documents listed in the Form of Compliance / Deviation Sheet - Annexure E before the closing of Bid will result in the Bid being rejected. The Compliance / Deviation Sheet shall be duly completed, signed and forwarded along with the offer.

**Company stamp**

**Signature**
ANNEXURE – F

SCOPE OF WORK OF THE THIRD PARTY INSPECTOR

1 Certify that following equipments are in compliance with applicable standards / specifications
   a) Electrical Enclosures - IEC 144/BS.EN 60947/ IP 65 standard
   b) Double pole master switch - BS 5345
   c) PD Meter - API MPMS 6.4
   d) Pipes- ASTM A 312 grade TP. 304L and Sch 5S, or ASTM grade A321 or ASTM grade A316
   e) Flanges- ASTM A 182 grade F 304L (Dimensionally in accordance with ANSI B 16.5)
   f) Pop rivets material - BS 1473 Al Mg 5 or Similar

2 Certify that hydrostatic test for dump tank and piping circuit is in accordance with applicable test pressures defined in chapter 4.2

3 Certify that the hydraulic and pneumatic systems are leak free

4 Verification of mechanical integrity of the complete unit

5 Verification of tank calibration and contents.

6 Confirmation of stability and weight distribution.

7 Welding procedure approval, welder qualification and welding inspection.

8 Verify that the electrical requirements defined in section 3.7 are met.

9 Verification of the marking requirements as per API 1542

10 Certify the as built drawings.

11 Submission of third party report