

शुद्धि पत्र सं0- एल/03/07-8

इस कार्यालय के निविदा सूचना सं0-एल/02/2007-08 दिनांक 24.07.07 में निम्न सुधार किया जाता है :-

1. निविदा सूचना के अंग्रेजी भाषा में उल्लेखित मद संख्या -1 से 4 तक के कार्य का निविदा खुलने की तिथि 06.09.07 एवं मद सं0-5 से 8 तक के कार्य के लिए निविदा खुलने की तिथि दिनांक 07.09.07 पढा जाय ।
2. निविदा सूचना के मद सं0-3 के बाद निम्न जोडा जाता है :-
निविदाकार अपने आफर को फ़ैक्स के माध्यम से भेज सकते हैं जो प्रत्येक कार्य के खुलने की तिथि में अंकित समय के अन्दर इस कार्यालय में पहुच जाना चाहिए एवं फ़ैक्स की प्रमाणित प्रति , फ़ैक्स करने की तिथि से 10 दिन के अन्दर इस कार्यालय में पहुच जाना चाहिए, अन्यथा उनके आफर पर विचार नहीं किया जायेगा ।
3. निविदा सूचना के मद सं0-3 में समान प्रकृति के कार्यों के लिए अनुभव में क्रम सं0-1,3,4,5,6 एवं 7 के स्थान पर 3,4,5,6 एवं 7 पढा जाय ।
4. निविदा सूचना के मद सं0-2 में उल्लेखित कार्य के लिए एच टी वी सी बी का स्पेसिफिकेशन बुकलेट में लगा दिया गया है ।
5. निविदा सूचना के मद सं0-8 में उल्लेखित कार्य के लिए लिफ्ट एलिवेटर का स्पेसिफिकेशन बुकलेट में लगा दिया गया है ।
6. निविदा सूचना के सभी आठ बुकलेट के साथ संलग्न कार्य शेड्यूल में उल्लेखित भण्डार आपूर्ति के साथ होने वाले कार्यों के मद के लिए फर्म द्वारा भण्डार आपूर्ति करने पर उन सभी मदों में 70 प्रतिशत भुगतान किया जायेगा ।
7. निविदा सूचना में उल्लेखित क्रम संख्या -3,4,5,6,7 एवं 8 के कार्यों के बुकलेट में कार्य शेड्यूल के फुटनोट में उल्लेखित 5 प्रतिशत परफारमेंश गारन्टी के लिए बी जी के अतिरिक्त कैश डिपोजिट , डिपोजिट रीसिप्ट , पे आर्डर , एन एस सी या एफ डी आर भी जमा किये जायेगे ।
8. निविदा सूचना के क्रम संख्या -7 पर उल्लेखित कार्य के शेड्यूल के फुटनोट के मद संख्या -12 में RITS के स्थान पर RITES पढा जाय ।

मण्डल विद्युत इंजीनियर
पूर्वोत्तर रेलवे , वाराणसी
भारत के राष्ट्रपति की ओर से

CORRIGENDUM No-03/07-08

The following corrections has been made in this office Tender notice No-L/02/2007-2008 Dated-24.07.07

1 The date of opening for the work mentioned in English version at Sr no. 1 to 4 should be read as 06-09-07 & for the work at Sr no. 5 to 8 to be read as 07-09-07.

2 The following terms is added after item no-3

The contractor may send their offer through FAX .which must reach in this office as mentioned in notice for opening date & time against each work. But the conformation copy of the FAX must reach this office within ten Days from the date of FAX other wise their offer will not be considered.

3 Work at Sr no 1,3,4,5,6,7 mentioned at item no-3 of tender notice should be read as Work at Sr no 3,4,5,6,7 .

4 The specification of HT VCB has been enclosed in booklet for work at sr no-2 .

5 The specification of lift elevator has been enclosed in booklet for work at sr no-8.

6 70% running payment to be made to the contractor on supply of material against the all items for execution of work inclusive supply of material mentioned in work schedule in Booklets of all 8 works.

7 The following is added in connection with performance guarantee mentioned in footnote of work schedule in the Booklet of the work at Sr no-3,4,5,6,7 &8 in the tender notice cash deposit, deposit receipt, pay order, NSC or FDR in addition to BG for 5% bank guarantee.

8 The word RITS should be read as RITES in item no12 of footnote of the work schedule against the work at Sr no-7 of tender notice.

DIVISIONAL ELECTRICAL ENGINEER
N.E RLY VARANASI
For & on the be half of President of India

ENCLOSURE OF ITEM NO-4 OF CORRIGENDUM
NORTH EASTERN RAILWAY
ELECTRICAL DEPARTMENT

CEE's SPECIFICATION NO. CEE/Specification/H. T. Panel/ V.B.BS/July,2003

SPECIFICATION FOR 11 KV SWITCH GEAR PANELS (Vacuum type circuit breaker)

1. GENERAL

- 1.1 This specification covers the design, manufacture, testing and supply of 11 KV, 3phase, 50 HZ Air insulated metal-clad vacuum indoor switchgear units with horizontal draw-out and vertical isolation circuit breaker.

2. CONSTRUCTIONAL FEATURES

- 2.1 The switchgears shall be of sheet steel construction with M.N sheet of not less than 3 mm thickness, and shall be totally dust and vermin proof. The panels shall be rigid without using any external bracings. The switchboard panels shall comply with Technical specification of each component and shall be designed for easy operation, maintenance and future extension and bus bars, metering ckt breaker, chambers and cable box chamber shall have proper access for maintenance. Proper Interlocks shall be provided for safe operation and maintenance of switchgears.

All instruments shall be mutually interlocked and safe guarded in every respect from damages and provision with mechanical indicators of connection and disconnection positions. The switchgears shall be complete with all necessary wiring fuses, auxiliary contacts, terminal boards etc.

- 2.2 The components and bus bars should be rated for 250 MVA for 3 seconds. The bus bar shall be capable of connecting one switchgear panel to other through a proper insulated arrangement, which does not decrease the insulation strength of the bus bar at the point of connection between two panels.
- 2.3 The breakers should be able to be drawn out in horizontal position at ground level (with vertical Isolation). When the breaker is drawn out in horizontal position none of the live components inside the 11 KV switchgear panels should be accessible. The safety flanges / shutters should be robust and should automatically cover the components when the breaker is drawn out. The drawn out position should have complete interlocking arrangement at the fully inserted and fully drawn out position of breaker. Withdrawal of the breaker should not be possible when the breaker is in ON position. It should not be possible to close the circuit breaker in service condition unless all the auxiliary and control circuit are connected.
- 2.4 Panel drawing should be such that no foreign particle should enter the panel chamber.

3. BUS BARS AND CONNECTORS:

- 3.1 Bus bars and all other electrical connections between various components should be electrolytic copper of rectangular cross section. The bus bar sections should be of ample capacity to carry the rated current continuously without excessive heating and for adequate

meeting the thermal and dynamic stresses in the case of short circuits in the system up to full MVA rating and time specified in Para 2.2.

- 3.2 All bus bar connections shall be firmly and rigidly mounted on suitable insulators to withstand short circuit stress and eliminate vibrations.
- 3.3 Adequate clearances between 11 KV point and earth and between phases shall be provided to ensure safety as per provision in Indian Electricity Rules 1956 amended up to date. Switchgear shall be capable of withstanding the basic insulation level as per IS 1318/1991 and any amendment thereof.
- 3.4 Sharp edges and bends either in the bus bars or bus bar connection shall be avoided as far as possible. Wherever such bend or edges are unavoidable suitable compound or any other insulation shall be supplied to prevent local ionization and consequent flashover.

4. CIRCUIT BREAKERS:

- 4.1 The circuit breakers shall be vacuum drawn out type, suitable for Installation in the switchgear cubicles offered. The breakers should fully comply with IS 13118/1991 and any amendment thereof. Constructions of breakers should be such that the point, which requires frequent maintenance shall be easily accessible.
- 4.2 The circuit breakers should be of spring operated/ charged type for 3 pole simultaneous operation. The speed of closing operating shall be independent of the speed of hand operating lever. The indicating device should show the open and close positions of breakers, visible from the front of cubicles. The mechanism will have provisions for the reserve charge to facilitate quick re-closing.
- 4.3 The breakers should be capable of making and breaking the short circuit current in accordance with the requirement of IS 13118/1991 and any amendment thereof and shall have three phase rupturing capacity of 250 MVA for 3 seconds. The continuous current rating of breaker should not be less than 400 Amps. For the ambient temperature (Average 45°C) conditions specified in IS 13118/1991 and any amendment thereof. The total break time should be less than 0.15 second.
- 4.4 Comprehensive interlocking system to prevent any dangerous or inadvertent operation should be provided. Isolation of circuit breaker from bus coupler or insertion into bus bar should only be possible when the breaker is in the open position.
- 4.5 Sufficient number of auxiliary contacts should be provided for control signalling and annunciation.
- 4.6 Breaker shall ensure high-speed extinction and designed to limit excessive over voltage.

5. PROTECTION RELAYS:

- 5.1 All the incoming and outgoing switchgear units shall be provided with well tried protective relays designed to disconnect the faulty circuits with speed and certainty without interfering with healthy circuits and should conform to IS: 3231/1965 and any amendment thereof , regarding accuracy and other features.
- 5.2 The protections relays mounted on the panels should be of the draw out type. The relays must be capable of resetting without necessity of opening the case.

- 5.3 The protection relays should be provided with flag indicators each functional elements of relay shall be provided with its own flag indicator to enable the type of fault conditions to be identified.
- 5.4 The breaker should be provided with shunt trip arrangement the trip coil should be operative on D.C voltage to be obtained from battery and battery charger or through power pack unit provided for each panel. The supply to power pack unit (Rectifier and condenser assembly) should be taken from the P.T the incoming panel for each set of the incoming & two outgoing panel the battery and battery charger inside a cubicle or power pack unit for each panel should be included in the scope of supply.
- 5.5 Incoming units should be provided with 2 Nos 5 Amps over current relays and one on E/F relay of IDMT type shunt tripping with setting range 50-200% for O/C and 20-80% for E/F relay and ordinary inverse characteristics.
- 5.6 Each of the incomer switchgear units shall be provided with 3 elements of 5 Amps/1A non directional, 3VA over current relay of the IDMTL type for shunt tripping with setting range of 50-200%. The definite minimum time shall be 3 second at 10 times plug setting.
- 5.7 Each of the feeder panels shall be provided with shunt tripping two over current and one earth fault IDMTL. 3 VA relays of 5 Amp. rating having ordinary inverse characteristic and with definite minimum time 3 seconds at 10 timer plug setting elements.
The O/C element shall have setting of 50 to 200% in seven equal steps and E/F element shall have setting of 20 to 80% in seven equal steps. High set instantaneous elements of low transient over reach not exceeding 5% should be incorporated in the O/C and earth fault relays for all the outgoing feeder panels capable of adjusting the setting from about 5 to 20 times normal rating in the O/C relays and 2 to 8 times in earth fault days.
Protective relays should withstand 20 times the maximum current for 3 second at any tap setting.

6. CURRENT TRANSFORMERS:

- 6.1 The requirement of ratio, VA capacity , class of accuracy, accuracy limit factor etc for CT's installed in different type of units are tabulated below:

Ite m	Unit	Core/ct	VA	ALF	Class of accuracy
1	Incoming	Protection	15	10	10PIO
	Panel	Metering	15	Less than 5	10
2	Outgoing	Protection	15	10	10 PIO
	Feeder panel	Metering	15	Less than 5	1.0

- 6.2 The desired accuracy should be available even at the lower ratios' and all CT's should withstand fault current corresponding to 250 MVA for 3 seconds.
- 6.3 The secondary terminal of the current transformers should be such that effective and firm wire terminations are possible. Shorting links of adequate capacity should be provided at the terminal blocks for shorting of the leads from secondary terminals of current transformers. The secondary terminals of current transformer's should be earthed at one point.
- 6.4 The secondary winding resistance of CT's should be as low as possible but not greater than 0.2 ohms per 100 turns.

6.5 The magnetization curves justifying sufficient knee-point voltage must (invariably) be submitted with bid.

7.0 CABLE TERMINATION

7.1 Suitable arrangement shall be provided in panel for terminating 3 core XLPE cables up to 400 sqmm.

7.2 All control cable/wirings should be suitably terminated through lug terminals and wiring should be duly numbered.

8.0 AUXILIARY/CONTROL WIRING:

8.1 All the secondary wiring in the panel should have high quality PVC insulation and the same should have conductor size of not less than 2.5 sq. mm of copper. All the wiring should be neatly run and groups of wires should be securely fixed by clips so that wiring can be checked without necessity of removing the clamps. Wiring between fixed and moving portions of the panel should be run in flexible tubes and the same should be so mounted to avoid any damages to them due to mechanical movements.

9.0 Details of fittings and mounting of equipments in the switch panel shall be as per appendix-1 enclosed.

10.0 TESTS:

10.1 The circuit breakers, voltage transformers and current transformers shall be subjected to the following routine tests apart from type tests in accordance with the details specified in the relevant Indian Standards, as amended from time to time.

10.2 Circuit Breakers IS 13188 of 1991.

10.21 ROUTINE TESTS:

- (a) Power frequency voltage dry test on the main circuit.
- (b) Voltage test on control and auxiliary circuits.
- (c) Measurement of resistance of the main circuit.
- (d) Mechanical operating test.
- (e) Test of protection system by current injunction type relay test sets.

10.2.2 Type Tests:

- (a) Test of prove mechanical performance.
- (b) Tests to prove mechanical operation.
- (c) Tests to prove that temperature rise of any part does not exceed specified limits.
- (d) Tests to prove that insulation complies with specified limits.
- (e) Tests to prove short-circuit making and breaking performance.
- (f) Tests to prove short time current performance.
- (g) Tests to prove performance when breaking line charging current.
- (h) Tests to prove performance when breaking cable charging current.
- (i) Tests to prove the performance when breaking single capacitor bank current.
- (j) Tests to prove the performance when breaking small inductive currents.

10.3 Voltage transformers IS 1356 (Part-I)/ 1992 or latest.

10.3.1 Routine Tests:

- (a) Verification of terminal making and polarity.
- (b) Power-frequency dry withstand tests on primary windings.
- (c) Power-frequency dry withstand tests on secondary windings.
- (d) Determination of errors according to the requirements of the appropriate accuracy class.

10.3.2 Type Tests:

- (a) Verification of terminal marking and polarity.
- (b) Power frequency dry withstand tests on primary windings.
- (c) Power frequency dry withstand tests on secondary windings.
- (d) Determination of errors according to the requirements of the appropriate accuracy class.
- (e) Temperature rise test.
- (f) Impulse voltage tests on voltage transformer for service in electrically exposed installations.

10.4 Current Transformer IS-2705)Part II & III)/ 1992 or latest.

10.4.1 ROUTINE TESTS:

- (a) Verifications of terminal markings and polarity.
- (b) High voltage power-frequency test on primary windings
- (c) High voltage power frequency test on secondary windings
- (d) Over voltage inter turn test
- (e) Determination of errors according to the requirements of the appropriate accuracy class.

10.4.2 Type Tests:

- (a) Verification of terminal markings and polarity.
- (b) High Voltage power frequency test on primary windings
- (c) High voltage power frequency test on secondary windings
- (d) Over voltage inter turn test
- (e) Determination of errors according to the requirements of the appropriate accuracy class
- (f) Short time current test.
- (g) Temperature rise test.
- (h) Impulse voltage test for current transformers for service in electrically exposed installations.

The tenderer shall submit all above type test, certificates of reputed test houses along with complete test report along with Tender documents.

11. Inspection & Testing:
- 11.1 All Routine Tests and Inspection shall be made at the place of manufacturer unless otherwise specifically agreed upon by the manufacturer and purchaser, at the time of purchase. The manufacturer shall afford the inspector representing the purchaser of reasonable facilities without charge, to satisfy him that the material is being furnished in accordance with the specifications.
- 11.2 The purchaser has the right to have the tests carried out at his own cost by and independent agency whenever there is dispute regarding the quality of supply.

12.0 Painting:

All metallic surface except enamelled and bright parts, exposed to weather shall be given a suitable priming coating and two coats of best paint or varnish of Dark Admiralty Grey Colour. All material surfaces in contact with lubricating oil shall as far as possible be painted with best resistant oil insoluble, insulating varnish.

Before applying primer coat of paint on panel, there shall be effectively cleaned by alkaline degreasing. After above process the oxide scale and rust formation shall be removed in a hot bath of sulphuric acid. Thereafter the panels shall be washed with cold water to remove all traces of acidic solutions, will then be subjected to phosphatising/ process for developing a phosphate layer on the surface for attainment of durable paint coating. After the above process the panels shall be dried in a dust free atmosphere and shall be sprayed with high corrosion resistant red-oxide primer. The finishing coat shall be applied by spraying two coats each of 15 micro thickness, synthetic enamel of aircraft gray to BS-38 IC shade 693.

Packing:

Circuit breakers shall be delivered suitable packed. Although the method of packing left to the discretion of the manufacturer it should be robust enough for rough handling that is occasioned during transportation by ship/rail/road.

Guaranteed Technical particulars:

The Guaranteed technical particulars of the 11 KV circuit breakers offered shall be given by the Tenderer (as per Appendix (II))

Successful tenderers shall supply two complete sets of instruction manuals and shall also submit schematic circuit and wiring diagram layout diagram for approval before taking the manufacturing work. After approval is given the successful tender shall supply two sets of circuit diagram along with instruction manuals of protection relays.

Accessories and spares:

1. Tenderer shall quote separately for the spares of the panels as demanded by indenter vide appendix 'A'. The procurement of the spares will be purely optional.
2. Tenderer shall mention the cable size of incoming/outgoing along-with their offer.
3. The tenderer shall submit circuit diagram along with cabling arrangement and position of equipments on the panel along-with their offer.

For CHIEF ELECTRICAL ENGINEER
NORTH EASTERN RAILWAY
GORAKHPUR

CEE's SPECIFICATION CEE/ Specification /HT Panel/V.B/85/July, 2002 Appendix-I

DETAILS OF FITTING AND MOUNTINGS OF EQUIPMENTS IN SWITCH PANEL

A. Incoming Unit:

Each unit should have the fittings and equipments as follows:

1. 1No. metal clad switch unit housing complete, having integral circuit breaker lowering and raising mechanism and all necessary supports in door floor mounted.
2. 1No. 80 watts (continuously rated) tubular heater with switch working on 230V single phase supply.
3. 1No. Triple pole 400 Amps circuit breaker fitted with vacuum interrupters with rupturing capacity of not less than 250 MVA at 11 KV for 3 second.
4. 1 No Manually charged manually released spring closing mechanism fitted with mechanical 'ON' and 'OFF' indicators.
5. 1 No Set D.C operated shunt trip cots suitable for operating in conjunction with protection relays, Power pack or Battery Charger cubicle.
6. 1No. Set of isolating plugs and sockets with automatic safety shutters and pad locking arrangement facilities shall be provided for proper opening the safety shutter for cleaning inspection / or testing.
7. 1No. Complete set of Mechanical interlocks.
8. 1No Auxiliary switch with minimum four normal closed and four normally open contacts. The contact terminal shall be brought out and terminated at terminal board irrespective of whether terminals is used or not.
9. 1No Multi-way plug box for secondary wiring between the fixed and moving portion.
10. 1No Earth bar.
11. 1No Set of copper bus bars of not less than 400 Amps continuous rating.

12. 1 Set Current transformer of required accuracy, output etc for protection and metering as per para 6.1 of the specification and ration as per description given in tender specification.
13. 1 No 3 phase of immersed draw out type voltage transformer of ratio 11000/110Volts star/star connected class B accuracy having 100 VA per phase output to operate the integrating kilowatt hour meter, volt meter, power factor meter etc and earth HT and LT phases isolating plug and sockets and first filling of oil as per IS:335/1998
14. 1 No Set of independently operated automatic shutters for bus bar cable and voltage transformer orifices, which shall be clearly levelled and individually pad locked.
15. 1 No. Sheet steel instrument panel mounted on the front of the unit with hinged access doors and totally enclosed wiring terminals mounted therein.
16. 1 No. Electronic TRIVECTOR METER type ER 300P suitable for 3 phases three wire, wire unbalanced load cum max. Demand indicator and time interval of 30 minutes for CT PT ratio mentioned above similar to L&T make or similar.
17. 1No. Voltmeter suitably sealed to suit P.T. ratio IS: 1248 of part II
18. 1 No. Ammeter selector switch, rotary pattern suitable for reading the current in any phase on the above ammeter with off position.
19. 1No. Voltmeter selector switch, rotary pattern suitable for reading the voltage between any two phases on the above voltmeter.
20. 1 No AC shunt triple relays/triple pole adjustable definite minimum time inverse time characteristics combined over load and earth fault (2 Nos. O/C and 1 No E/F) relay, with definite minimum 0.3 seconds at 10 times plug setting. The relay shall be arranged for over current protection with setting from 50 to 200% of 5A and earth fault protection with setting 20-80% mounted in a draw out case, tropicalised with flag indicator.
21. 1 Set. Indicating pigmy lamps operating at 230 V AC single phase one coloured 'RED' another 'GREEN' to show the closed or open position of circuit breaker.
22. Power Pack (Rectifier Condenser Unit) or Battery Charger cubicle (as applicable)
23. 1Set complete set of self-contained inter connectors foundation bolts wiring terminal board, cables , cables sockets and another necessary sundries to complete the unit.
24. Suitable arrangement for holding XLPE cable box (up to 400 sq mm) as per para 7.0

OUTGOING UNIT:

Each unit should have the fittings and equipments as follows:

1. 1 No. Metal clad switch unit housing complete with transportation trucks, if required having integral circuit breaker, lowering and raising mechanism and all necessary supports.
2. 1 No 80watt(Continuously rated) tubular heater with switch working on 230V AC single phase supply.
3. 1 No. Triple pole 400A circuit breaker fitted with vacuum interrupters with rupturing capacity of not less than 250 MVA at 11 KV for 3 seconds and with first filling of oil.
4. 1No. manually charged manually released spring closing mechanism fitted with mechanical 'ON' and 'OFF' indicators.
5. 1 Set D.C operated shunt trip cols suitable for operation in conjunction with protection relays, power pack unit or battery charger cubicle.

6. 1No. set of isolating plugs and sockets with automatic safety shutters and pad-locking arrangements. Facilities shall be provided for proper opening the safety shutter for cleaning inspection and or testing.
7. 1 No. Complete of Mechanical interlocks.
8. 1No. Auxiliary switch with minimum four normal closed & four normally open contacts. The contact terminal shall be brought out and terminated at terminal board irrespective of whether terminals are used or not.
9. 1No. Multi-way plug box for secondary wiring between the fixed and moving portion.
10. 1 No. Earth bar.
11. 1 No. Set of copper bus bar of not less than 400A continuous rating.
12. 1Set Current transformer of required accuracy, output etc. for protection and metering as per Para 6.1 of the specification as per description given in the tender specification.
13. 1No. Sheet steel instrument panel mounted on the front of the unit with hinged access doors and totally enclosed wiring terminals mounted therein.
14. 1No. Ammeter suitable scaled to CT ration as per IS 1248 Part II of 1983
15. 1No. Ammeter selector switch, rotary pattern suitable for reading the current in any phase on the above ammeter with off position.
16. 1 No 3 phase 3 wire energy motor duly wired for measuring energy fed to the panel as per IS 13010 of 1990.
17. 1 No Triple pole, adjustable definite minimum time, inverse time characteristics combined overload and earth fault (2 Nos. O/C and 1 No. E/F)AC shunt trip relay with instantaneous high set trip feature with definite minimum 0.3 secs, at 10 times plug setting. The relay shall be arranged for over current fault protection with setting 50-200% of 5A and earth fault protection with setting 20-80% mounted in a draw out case, tropicalised with flag indicators.
18. 1 No. Indicating pigmy lamps operating at 230V AC single phase one coloured 'RED' and another 'GREEN" to show the closed or open position of the circuit breaker.
19. Power pack (Rectifier Condenser unit) or Battery Battery Charger cubicle (as applicable)
20. 1 No. AC shunt type relays/triple pole, adjustable definite minimum time inverse time characteristics combined I and earth fault (2 Nos. O/C and 1 No. E/F) relay with definite minimum 0.3 seconds at 10 times plug setting. The relay shall be arranged for over-current protection with setting 50 to 200% of 5A and Earth fault protection with settings 20-80% mounted in a draw out case tropicalised with flag indicator.
21. Suitable arrangement for holding XLPE cable, cable box(upto 400 sq. mm) as per para 7.0

C BUS COUPLER:

Bus coupler panel shall be without CT, PT meters and relays . But with vacuum draw out type circuit breaker with trip and close push buttons. Suitable necessary interconnecting fishplates for connecting adjacent circuit breakers.

D. ARRANGEMENT OF PANEL

CASE-1: One cubicle consisting of one incoming and two outgoing panels as per specification.

CASE-2: One cubicle consisting of two incoming one couple and three outgoing panels as per specification.

The requirement of Case-1/Case-II as above shall be specifically mentioned in the demand.

CEE/HT-CB/056-1/7-88(Revised in July/2002)

Schedule of Guaranteed Technical particulars (To be filled in by Tenderer)

S.No.	Description	Particulars to be filled in by Tenderer
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A. Vacuum Circuit Breaker

1. Make
2. Type
3. Normal current carrying capacity
4. Maximum current capacity for 3 sec.
5. Breaking capacity at the rated voltage
 - a. Symmetrical amperes
 - b. Asymmetrical amperes
6. Minimum air clearance (a) Phase to phase (b) Phase to earth
7. Rating and voltage of space heaters
8. Rating and voltage of space heaters
9. Conformity to IS 3427 of 1997
10. Opening time
 - a. With no current
 - b. At breaking current
11. Making time

B. Potential Transformer

1. Make
2. Type
3. Ratio
4. Volts ampere burden
5. Class of accuracy
6. Conformity with Indian Standard specification.

C. a) Current Transformer (for metering circuit)

1. Make
2. Ratio
3. Volt amp burden
4. Class of accuracy
5. Rated voltage
6. Conformity with Indian standards specification

b) Current Transformer (for protection circuit)

1. make
2. Type
3. Ratio
4. Volt amp Burden
5. Class of accuracy

6. Rated voltage
7. Conformity with Indian standards specification

Note:- Please indicate whether common CT (Current Transformer) with two separate course in each CT or separate CTs are provided for metering as well as for protection circuits.

D. INSTRUMENTS:

(a) Ammeter with selector switch:

8. Make
9. Type
10. Class of accuracy
11. Range
12. Size in mm
13. Conformity with Indian standard specification

(b) Voltmeter with selector switch:

1. Make
2. Type
3. Class of accuracy
4. Range
5. Size in mm
6. Conformity with Indian standard specification

(c) Energy meter/Electronic Type Trivector meter:

1. Make
2. Type/Model No
3. Range of setting in percent of full load
4. Type of Trip provided?
5. Is the setting adjustable?
6. Type of limo lag
7. Is time lag adjustable
8. Trip coil voltage and power requirement in walls.

E. Over Current & Earth Fault Relays:

1. Make
2. Type /Model No and whether solid state type or dynamo meter disc type
3. Range of setting in percent of full load
4. Types of trip provided?
5. Is the setting adjustable?
6. Time lag duration & type
7. Is time lag adjustable?
8. Trip coil voltage and power requirement in watts.

F. Trip/Closing Coil

1. Trip/closing coil operating voltage
2. Trip/closing coil power requirement in watts.
3. Whether power for trip coil is derived from external DC source or power pack unit provided (Rectifier capacitor)
4. Amp Hour rating of battery & battery charger voltage.

Note: If trip coil is to be operated from external DC source then Battery and Battery charger should be included in the offer and the rate should be given separately. In case power pack is provided then its cost should be included along with the panel.

- G. CUBICLE:
 - 1.0 Material details
 - 1.1 Cold rolled/hot rolled
 - 1.2 Thickness, structural frames and load bearing members
 - 1.3 Thickness front and rear
 - 1.4 Thickness side and top

 - 2.0 Size of cubicle
 - 2.1 Length
 - 2.2 Height
 - 2.3 Depth

 - 3.0 Weight of cubicle (HT switch panel) in KG
 - 3.1 Complete
 - 3.2 Movable portion
- H. Bus bar capacity
- I. Whether certificate for type test attached
- J. Other information, if any

Signature of Tenderer

ENCLOSURE OF ITEM NO-5 OF CORRIGENDUM

Specification for Lift :-

To be furnished and erected in accordance with following details-

Load-Kgs	884 Kgs (13 persons)
Speed- Mps	1.0 m/sec.
Travel (Max.)-Mts	7.00 Metres
Stops & Opening (Max)	Ground floor to first floor, 2/2 (All openings on same side)
Power supply	400 volts 3 phase 50Hz Alternating current
Control	A.C. Variable voltage , Variable frequency with closed loop
Operation	Simplex Full Collective
Machine	Geared placed directly above the hoistway
Car size	2000mm wide X 1100mm deep inside dimensions
Hoistway required	2500mm wide X 1800mm deep finished dimensions
Car Enclosure	IND-160
▪ Car panels	Steel powder Coated panels
▪ Handralls on 3 sides	Mirror stainless steel
▪ False Ceiling	CD-35 (power painted)
▪ Flooring	Vinyl Tiles
▪ Car Entrance	Protected by centre Opening sliding Steel door in powder Coated Finish.
▪ Size	900mm Wide X 2000mm high
▪ Hoistway Entrances	Protected by centre Opening sliding Steel door in powder Coated Finish.
▪ Size	900mm Wide X 2000mm high
▪ Door Operation	Automatic with ACVVVF Door operator
▪ Door Protection	Multi Ray Electronic door Protection Device
▪ Signals (Design)	S-60
<i>SIGNALS</i>	1. Combined luminous Hall Button & Digital Hall Position Indicator. 2. Integral full height Car operating panel with luminous buttons, Digital Car Position Indicator combined with direction arrows. Overload warning indicator & service Cabinet. 3. Battery operated Alarm Bell and Emergency light. 4. Fireman's Switch at main lobby.
Face Plate Finish	Stainless steel in hairline finish.
Face Plate Shape	Rectangular.

