

Technical Conditions of the Contract: -

Supply, installation, commissioning, and maintenance of a biometric-cum-face recognition access control system (10 Nos Multi-modal biometric reader) integrated with the existing Electronic Gate Pass System for monitoring entry and exit of workers, staff, and visitors at BHEL Singareni 1x800 MW TPP, including 1-year warranty and 2-year AMC.

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The scope of the work will comprise of but not limited to the following: (All the works mentioned here under shall be carried out within the accepted rate unless otherwise specified.)

Part-A TECHNICAL SPECIFICATIONS OF READER: -

	SI	Parameter	Requirement
1. Biometric	a	Face Recognition	10K (1:N) + 10K (1:1) minimum
	b	Fingerprint	10K templates
	c	Fingerprints per Person	1 template per face (CRITICAL)
	d	Smart Card	Mifare/Proximity
	e	Proximity Reader	In-built
	Sl.	Parameter	Specification
2. Display & Interface	a	Display	5-inch Touch Screen (minimum)
	b	Keypad	Yes (Virtual + Physical)
	c	LED Indicators	To be available
	d	Speaker	Mini speaker for alerts
	e	Camera	≥2MP WDR camera with IR illumination for low light conditions
	f	Light	Adjustable brightness LED
	Sl.	Parameter	Specification
3.Performance & Accuracy	a	Face Recognition Speed	≤1 second
	b	False Acceptance Rate (FAR)	≤0.0001 (0.01%)
	c	False Rejection Rate (FRR)	≤1% (better preferred)
	d	Transaction Capacity	500K+ records
	Sl.	Parameter	Specification
4. Storage & Offline Capability	a	Flash Storage	8GB ROM minimum
	b	RAM	512MB minimum
	c	Offline Storage	≥30 days for 8-9K persons
	d	Battery Backup	≥5 hours operation
	Sl.	Parameter	Specification
5.Hardware Platform	a	CPU	900MHz Dual Core (minimum)
	b	Operating System	Linux (Embedded)
	c	Dimensions	91.93×202.93×21.5mm (max)
	d	Protection Rating	IP66 (weatherproof)
	e	Temperature Range	-10°C to +45°C
	f	Humidity	10%-90% (non-condensing)
	Sl.	Interface	Requirement
6.Communicati on Interfaces	a	TCP/IP	MANDATORY (Ethernet RJ45)
	b	WiFi	Optional (backup connectivity)
	d	RS485	For daily-chain multiple readers
	e	Push Data	Inbuilt real-time DB table updates
	Sl.	Parameter	Specification
7.Power & Environmental	a	Power Supply	220-240V AC, 50Hz ±3% /-5%
	b	Backup Battery	≥5 hours operation during outage
	c	Operating Temperature	-10°C to +50°C
	d	Operating Humidity	10%-90% non-condensing
	e	Protection Rating	IP66 (outdoor installation)
	f	Electrical Cabinet	IP54, dust & vermin-proof, tropicalized

	Sl.	Parameter	
8.Standard Functions	a	ID Card management	
	b	Camera integration	
	c	9-digit User ID support	
	d	Access Levels configuration	
	e	Groups management	
	f	Holidays setup	
	g	Anti-pass back feature	
	h	Record query capability	
	i	Tamper switch alarm	
	j	Multiple verification modes (AND/OR logic)	

Part-B SCOPE OF WORK: -

Supply, Installation, Commissioning & AMC of biometric-cum-face recognition attendance and access control system with data integration of installed system with existing BHEL Electronic Gate Pass System at BHEL Singareni 1x800 MW TPP.

1. Vendor to Supply: -

- 1.1 10 Nos multi-modal biometric readers (Face/Fingerprint) along with the required software and Licenses
- 1.2 UPS + Batteries (5+ hours capacity) for readers & the server.
- 1.3 IT peripherals (switches, cables, network equipment)
- 1.4 Consumables for installation (brackets, labels, cable trays)
- 1.5 2 sets of documentation (hardcopy + Flash drives with software)
- 1.6 All tools required for installation & commissioning and further maintenance for the entire contract period.

2. Installation & Integration: -

2.1 Civil coordination

- 2.1.1 Civil works are not in vendor's scope of work. However, Vendor has to furnish recommended civil drawing, if any.

2.2 Electrical work (Vendor Scope)

- 2.2.1 BHEL will provide the power source at a single location. Vendor has to make necessary arrangements for further supply sources to the equipment.
- 2.2.2 Vendor has to supply and install all the internal wiring, cable runs, circuit breakers and provide proper earthing for all equipment.
- 2.2.3 Vendor to supply & install the Battery backup system to support the system for a minimum time of 5 hours.
- 2.2.4 IP54 Protection for all electrical cabinets should be ensured and equipment supplied should be suitable for outdoor environment.

2.3 Hardware installation

- 2.3.1 Installation of the required no of readers as per requirement at designated gate locations
- 2.3.2 All readers are to be properly mounted on gate locations with optimum cable management and power supply connections
- 2.3.3 Each Reader has to be tested individually and test results to be recorded. The reader is also to be configured and integrated with the software and server.

2.4 Other Terms and Condition

2.4.1 System Availability

- All Machines must work 24 hours × 7 days × 365 days
- Planned downtime will be allowed with prior intimation to BHEL Engineer-in charge.

2.4.2 EGPS Integration (MANDATORY)

- Vendor software MUST mandatorily connect to existing BHEL EGPS.

- Scheduled data exchange should occur where the worker IDs, validity dates will be sent across to/from Readers → middleware server → BHEL EGPS
- Vendor will have to test the integration before go-live.

2.4.3 Updates & Upgrades (Vendor Responsibility)

- Install ALL OEM updates during 3-year contract:
 - Software patches
 - Firmware upgrades
 - Hardware improvements
- All the above will be at no extra cost to BHEL
- Any updates MUST NOT break the EGPS integration.

2.4.4 Machine Relocation

- Vendor will move (or) relocate the readers between the installed locations FREE of cost within the plant premises, i.e. BHEL Singareni 1x800 MW TPP where in the number of relocation are unlimited in nature.
- This activity is inclusive of Dismantling + reinstallation + reconfiguration + testing of the reader and the system.
- The reader should work immediately after relocation without any interruptions, glitches, etc
- No downtime is applicable/allowed for the readers which are not scheduled for movement.

2.4.5 Full System Responsibility

- Vendor owns ENTIRE system maintenance which includes: -
 - Face recognition readers
 - Network cables + switches + all other IT Peripherals.
 - Software + database
 - UPS + batteries
 - Accessories
- Vendor replaces ANY failed equipment
 - During warranty period: full replacement free including consumables.
 - During AMC period: repair/replacement including wear & tear except consumables.
- Vendor has to supply spare parts from stock and supply on order. In other words, Vendor to maintain sufficient spares as stock during the entire contract period.

2.4.6 BHEL Self-Procure Rights

If Vendor delays spares > 7 days:

- BHEL buys parts directly and is liable to deduct the cost from the RAB of the vendor with and overhead of 15% from the vendor bills.
- Vendor is still responsible for installation, configuration, commissioning and testing of the spare.

2.4.7 Breakdown Penalties (>48 Hours)

- Breakdown > 48 hours = Immediate action by vendor for supply of the damaged / broken part.
- Vendor has to supply the standby part/machine of the same specifications or better specifications until the damaged part is repaired/replaced.

2.4.8 Power Failure Handling

- Readers must store punch data locally for up to 7 days during extended power outages.
- Readers must have an inbuilt battery backup to support minimum 5 hours operation.
- UPS + Battery backup should have a capacity for 5 Hours to support continuous operation of the entire system.
- Readers stores ALL attendance data during outage
- Auto-syncs data when power returns

- No data loss, no manual entry required
- Test certificate required during commissioning.

PART-C INTEGRATION & DATA REQUIREMENTS

1. Proof of Concept (POC) and General Deployment

- 1.1 Vendors must provide a Proof of Concept (POC) before quote submission to demonstrate technical feasibility, conducted at BHEL PSSR, Pallikaranai, Chennai. Refer Annexure- A for further details.

2. Hardware Installation

- 2.1 Install face recognition biometric readers at all plant gates.
- 2.2 Connect all entry control readers to the central BHEL Electronic Gate Pass System (EGPS) database via LAN.
- 2.3 Ensure transmission of in-out attendance data from readers to the central database server (fixed IP). Store all data (across machines, months, and dates) in a single table.

3. Workmen Registration and Authorization

- 3.1 Register all workmen exclusively using their BHEL EGPS-generated Workman ID in the biometric readers' database.
- 3.2 Integrate authorization data with EGPS, including start and end dates for entry validity.
- 3.3 Automatically revoke access after end date expiry; replicate changes (e.g., validity updates or deletions) from EGPS to all readers.
- 3.4 Use a vendor application on a fixed schedule to sync updates.
- 3.5 If a workman's data is deleted from EGPS, remove it from all connected machines (distinct from mere validity expiry).

4. System Integration and Accessibility

- 4.1 Fully integrate biometric database and software with existing BHEL EGPS.
- 4.2 Make the system accessible from client PCs on the BHEL LAN for MIS reports.
- 4.3 Enable real-time data synchronization between attendance reader software and EGPS.

5. Data Management and Backups

- 5.1 Track entry/exit times for all contract workers/agencies.
- 5.2 Provide backup and restoration of reader data to a locally connected PC or central server.
- 5.3 Implement machine health and connectivity monitoring from the central server.

6. Reporting and Notifications

- 6.1 Generate daily and monthly attendance reports for plant entries/exits.
- 6.2 Produce detailed/mini notifications or reports for punch-in/punch-out at day's end.
- 6.3 Automatically send email/SMS notifications if a worker hasn't punched out within 24 hours, alerting the individual and officials.

7. Data Synchronization Requirements: -

Sync Direction	Data Elements	Frequency	Latency	Failure Handling
EGPS → Readers	Workman ID, Validity Dates, Status	Hourly (scheduled)	<5 min	Retry 3x, log failure, alert
Readers → Server	Punch record (workman ID, time, gate, score)	Real-time	<5 seconds	Local storage, auto-sync on reconnect
Server ↔ EGPS	Validation, confirmation, audit log	Real-time	<10 min	Queued, retry mechanism

8. Offline Operation

- 8.1 Reader should have a minimum punch data storage for 5000-6000 persons.
- 8.2 The reader should use the cached authorization data when the BHEL EGPS system is unavailable.
- 8.3 Once connectivity restored, automatic sync of buffered data is to be ensured with loss of data in offline period.

9. Network Failure Handling

Outage Duration	Reader Behaviour
<5 minutes	Queued sync on reconnect
5 min - 2 hours	Use cached authorization, record locally
2-7 days	Local storage in reader
>7 days	Vendor to restore from external backup

10. Power Outage

10.1 The Battery Backup should be for a minimum of 5 hours.

10.2 All readers have in-built battery backup and the central server to have a separate UPS system. During outage, Local punch recording continues and on restoration of power the data is to sync automatically.

10.3 Readers to have an alert system for battery health indication.

11. Real-Time Synchronization

11.1 99.9% of punches are to be recorded within 5 seconds

11.2 Zero data loss during network issues and all readers are to be synced within 24 hours.

11.3 The system should have a minimum scheduled synchronisation interval of every hour and mandatory fixed synchronisation times (Eg. 12PM, 3PM, 6PM, 9PM, etc) .

11.4 Vendor to provide the Configuration access for the synchronisation schedule and the synchronisation logs for both success and failure are to be maintained.

PART -D : INSTALLATION, COMMISSIONING & HANDOVER

1. Vendor to carry out the following:

1.1 If required, Bidder may visit site for a better assessment of the installation setup.

1.2 Network infrastructure assessment (LAN, Wi-Fi availability)

1.3 Power availability check (220V, 3-phase, grounding)

1.4 Environmental conditions (dust, humidity, temperature)

1.5 Space availability for readers & server

1.6 Documentation: Site assessment report.

2. Vendor to prepare:

2.1 Reader placement layout (scale 1:50)

2.2 Cable routing diagram

2.3 Network topology (LAN, switches, IP addressing)

2.4 Server room layout (cooling, power, backup)

2.5 Civil foundation recommendations (drawings), if any.

2.6 Electrical power distribution diagram

3. Vendor installation: -

3.1 The procurement, supply, electrical works, power supply setup, reader installation, mounting, connections, network setup of the readers with server and data base installation is to be completed.

3.2 Testing schedule: -

Test Type	What We Check	Must Pass
Machine Tests	Face recognition, UPS with battery backup capacity of 5+ hrs	All machines work individually
Connection Tests	Reader ↔ Server data flow, BHEL Electronic Gate Pass System sync, single table storage	Perfect data sync, no missing records
Load Tests	500K+ punches, reports (<5 sec), power/network failure recovery	Handles peak load without crash

4. Commissioning & Handover

- 4.1 All the defects logged in the daily report are to be checked, reviewed and resolved.
- 4.2 Critical defects are to be fixed within 8 hours, high severity- 24 hours, medium severity- within 48 hours and Low severity- before the go live.
- 4.3 Before GO live, All the test records are to be cleaned, all workman master data is to be validated, Authorization rules confirmed, Backup verified & tested, Disaster recovery tested.

5. Knowledge Transfer & Documentation: -

- 5.1 Hard Copy Documentation (2 sets)- Installation & commissioning manual, System operation & maintenance guide, Troubleshooting reference, Technical specification sheet, API documentation on Free of cost basis.
- 5.2 Digital Documentation (2 flash drives)- All above in PDF format, Software license keys, Installation scripts, Backup/restore scripts, Configuration templates on Free of cost basis.
- 5.3 Training Sessions (2 days)- Hardware setup & configuration, Network & database management, Backup & disaster recovery, Incident response, User & operations training (2 persons for 8 hours/day for 2 days = 2x2x8= 32 hours), User interface overview, Workman enrolment & deletion, Report generation, Alert management, Troubleshooting

PART E: CONTRACT PERIOD & MAINTENANCE

1. Contract Duration- The contract is valid for a period of 3 years/36 months.
2. BHEL at any time can terminate the service contract by giving three months prior notice in case service provided is not satisfactory.
3. Contract start date will be mutually agreed/written intimation between BHEL and the successful vendor.
4. If BHEL desires to extend the contract beyond 3 years, the extension period will be for a period of 6 months and the AMC rates for extension period will be at the same rates of the original contract.
5. Vendor to provide the Original Manufacturer's Warranty Certificate for applicable items with extended warranty option and the warranty claim process documentation. If no warranty claim process exists, the process as mentioned in clause part G.4 will be applicable.

PART F: OTHER DETAILS & COMPLIANCE

1. System Specifications for Actual Operations- **Deleted.**
2. The system must withstand the following conditions at sites: -
 - 2.1 Outdoor installation (gates are outdoors)
 - 2.2 Dust & sand particles (harsh environment)
 - 2.3 Water spray (cleaning operations)
 - 2.4 Temperature extremes (-10°C to +45°C)
 - 2.5 High humidity (seasonal monsoon)
 - 2.6 Vibrations from machinery
 - 2.7 Diesel fumes & smoke
 - 2.8 Extended UV exposure
3. All equipment must be tropicalized & IP66 rated and all electrical control cabinets & panels should be dust and vermin proof.
4. Accessibility & Usability
 - 4.1 Touch screen interface should be easy for workers to use.
 - 4.2 The reader should have an option for multiple language support, if required by site.
 - 4.3 The readers should have an option for Large fonts for better visibility in bright sunlight.
 - 4.4 There should be an option for audio prompts for users with visual impairment.
 - 4.5 The user interface should be very simple with No complex navigations.
 - 4.6 There should be an Emergency exit option (manual fall back).
 - 4.7 The enrollment process should be very simple and easy to access and use.

5. Data Retention & Compliance
 - 5.1 Biometric data protection (encrypted)
 - 5.2 Privacy policy compliance.
 - 5.3 Regular audits (quarterly)
 - 5.4 Incident logs maintenance
 - 5.5 Compliance certifications (if applicable)
6. Cybersecurity Requirements
 - 6.1 The system should maintain a secure communication channel using HTTPS / TLS encryption
 - 6.2 Access management should be Password protected.
 - 6.3 Role-based user management
 - 6.4 There should be protection against SQL injection and malware
 - 6.5 No backdoor remote access
 - 6.6 All software must be digitally signed by OEM
7. All biometric and attendance data collected under this system shall be the exclusive property of BHEL.
8. Vendor is not authorised/ permitted to store, process, or transmit any biometric data outside the BHEL network without written permission.
9. At contract completion vendor must provide the following to BHEL:
 - 9.1 Complete database dump
 - 9.2 Source configuration file(s).
 - 9.3 System architecture document(s).
 - 9.4 Password(s) handover.
 - 9.5 Admin credentials.
10. End-of-Contract Support: - Upon completion or termination of the contract, the vendor shall provide the following at No additional cost.
 - 10.1 Hand over complete system configuration details.
 - 10.2 Provide the complete database backup to BHEL
 - 10.3 Assist BHEL in transition to new vendor if required.
 - 10.4 Ensure system continuity for minimum 30 days transition period.

PART G: WARRANTY & AMC

WARRANTY

1. **Warranty duration will be** 12 months from date of successful commissioning of the complete system and issue of Completion Certificate.
2. Throughout the contract period including the AMC period, the agency shall promptly attend to any complaint and get the faulty equipment repaired/replaced in the shortest possible time at BHEL' site. The agency shall guarantee a system availability of 98%. The availability shall be reckoned on a quarterly basis (three calendar months).
3. What's Covered under warranty: -
 - i) Free replacement for manufacturer's defects
 - ii) Free bug fixes in Software
 - iii) Firmware upgrades- Free Fixes
 - iv) Database schema issues- Free restoration
 - v) Uptime SLA: 98% (penalties apply)
 - vi) Quarterly maintenance: 4 visits/year
 - vii) Integration failures.
 - viii) Performance degradation.
4. Warranty Claims process: -
 - 4.1 Vendor will report the issue to BHEL and investigate the issue within 24 hours of the discovery.
 - 4.2 During warranty period: Free repair/replacement

- 4.3 Replacement: Like-for-like or better specification, to be done within 48 hours (critical issue), 1 week (non-critical issue)
- 4.4 Documentation: Warranty claim form filled.
- 5. Warranty Exclusions:
 - 5.1 Damage due to misuse or unauthorized modifications
 - 5.2 Power fluctuations (client to provide stabilized supply)
 - 5.3 Environmental damage (salt spray, chemical corrosion)
 - 5.4 Third-party damage
 - 5.5 Normal wear & tear Consumables (cables, brackets, labels)

Annual Maintenance Contract (AMC) - AMC shall commence immediately after completion of 12-month warranty period.

6.1 AMC to Cover: -

6.1.1 **Hardware Maintenance:**

- 6.1.1.1 Preventive maintenance (quarterly)-
- 6.1.1.2 Firmware upgrades
- 6.1.1.3 Spares of equipment in whole or part of (wear & tear replacements)
- 6.1.1.4 Reader relocation (within site, free)
- 6.1.1.5 Cable & connector replacements
- 6.1.1.6 UPS battery replacement (during AMC Period and after the 3 years contract period)
- 6.1.1.7 AMC shall include unlimited repair and replacement of failed parts except consumables.

6.1.2 **Software Support:**

- 6.1.2.1 OEM updates (as released)
- 6.1.2.2 Bug fixes (within 5 days)
- 6.1.2.3 Database optimization (quarterly)
- 6.1.2.4 Backup verification (weekly)
- 6.1.2.5 Security Patches(monthly)

6.1.3 **Preventive Maintenance:**

- 6.1.3.1 Quarterly visits (4 times/year)
- 6.1.3.2 Health check of all readers
- 6.1.3.3 Network connectivity verification
- 6.1.3.4 Database backup integrity check
- 6.1.3.5 Performance tuning
- 6.1.3.6 Documentation review

6.1.4 **Technical Support**

- 6.1.4.1 Monday-Saturday: 9 AM to 6 PM (standard)
- 6.1.4.2 24x7 Emergency Support (Critical Issues)
- 6.1.4.3 Response time SLA maintained
- 6.1.4.4 Incident tracking & reporting

6.1.5 **AMC Exclusions (Chargeable)-** The cost will be paid at actual and the spares/parts repaired/replaced will be from the OEM only, unless specified.

- 6.1.5.1 Major software rewrites or architecture changes
- 6.1.5.2 Replacement of reader models (upgrades only)
- 6.1.5.3 Third-party software licensing
- 6.1.5.4 Network infrastructure changes (client scope)
- 6.1.5.5 Data recovery beyond 1 event/year
- 6.1.5.6 Extended support (>24x7 hours)
- 6.1.5.7 Consultant/advisory services

PART H: RATE SCHEDULE & COMMERCIAL TERMS

Instructions to the bidders

- A. Tenderers are requested to affix their company seal and authorized signature in all pages.
- B. Bidders shall quote 'Total Amount' in the format enclosed. Any other entry elsewhere in the price bid shall be treated as Null and Void. Quoting of rates in any other form/ formats will not be entertained.
- C. The above mentioned 'Total amount' is for the entire Bill of Quantity (BOQ) given in the Price Bid. Total amount shall be excluding taxes.
- D. BHEL has pre-fixed the weightages for the amount of individual items of Bill of Quantity with respect to the 'Total Amount' in price bid.
- E. Based on the pre-fixed weightages, the amount for the individual items of the Bill of Quantity shall be arrived at. This amount shall be rounded off to the nearest rupee.
- F. Based on the quantities of individual item and the amount arrived in SI No: E above, unit rate of individual items shall be derived. This unit rate shall be rounded off to two decimal places.
- G. Delivery is the essence of the contract for BHEL. Offer deviating delivery schedule may be liable for rejection.

Price Bid Format Vendor to quote all-inclusive rates (no hidden charges): - As per Annexure C

- 1.1 The price is inclusive of Warranty support and maintenance along with the Quarterly preventive maintenance (4 visits) for a period of 12 months of warranty period.
- 1.2 Total contract Value will be inclusive of supply, delivery, installation, Data Integration, Commissioning, Warranty for 1 year and 2 years of AMC.
- 1.3 After receipt of Purchase Order from BHEL, the Supply and Delivery, Installation, Erection of biometric-cum-face recognition readers, along with the Data Integration and Commissioning Portion shall be completed within 30 days from the date of written intimation from site.
- 1.4 Date of commissioning will be the date of complete testing and handover of the system to BHEL.
- 1.5 The erection and commissioning with the BHEL EGPS system shall be done by the vendor at BHEL Singareni site. A commissioning certificate to be issued after successful commissioning and prove out of the system.
- 1.6 The activities shall be started as per directions of Construction Manager/General Manager of BHEL. The contractor has to augment his resources in such a manner that following activities are achieved on specified schedules.
- 1.7 Extra Cost Items (Chargeable Beyond Quote)
Following items are NOT included in quoted rates (if required):
 - 1. Extended Hardware Warranty (Beyond 1 year)
 - o Quotation to be submitted with bid
 - o Optional; BHEL can avail if desired
 - 2. Extended Software License (Beyond initial 3 years)
 - o Quotation separates
 - o Renewal rates for Year 4+ if contract extended
 - 3. Major Hardware Upgrades
 - o Quotes on demand
 - 4. Network Infrastructure
 - o LAN cabling beyond 100m
 - o Additional switches/routers beyond the requirement.
 - o Quotes based on requirement
 - 5. Civil Works
 - o Client scope; not vendor's cost
 - 6. Consultant Services
 - o System architecture redesign
 - o Custom feature development
 - o Quotes on demand

PART I: PAYMENT TERMS & CONDITIONS

1. Payment Terms

1.1 For Supply Portion: - 100% of the supply portion will be released within 45 days against Supply, Installation, DATA integration and commissioning with submission of following Documents.

- a) On acknowledged receipt of materials (OR) SRV issued by the BHEL SINGARENI.
- b) GST Compliant Invoice (1 Original + 2 copies).
- c) Inspection Report duly signed by Supplier's and BHEL's representative.
- d) Manufacturer Test Certificate.
- e) Warrantee Certificate for Supplies.
- f) Submission of the Commissioning certificate issued by the BHEL.
- g) Newness Certificate.

1.2 For the Service portion: The service portion will start after the expiry of 1 year of warranty period and the payment for the service portion will be released quarterly in arrears for a period of 8 quarters (2 years) within 30 days of submission of invoice. Vendor to carry out regular inspection, maintenance of all installed systems on quarterly basis. Apart from the quarterly inspection if any shortcoming observed with installed systems at any time, operating agency has to attend it without any additional financial implications.

Vendor to submit the following documents: -

- 1) GST Compliant Invoice (1 Original + 2 copies).
- 2) Quarterly reports containing, reader healthiness, any security incidents, successful/unsuccessful attempts highlighting any failed /unauthorised entries, error logs, etc. duly certified by BHEL and Vendor.

1.3 GST Treatment

- GST Registration: Vendor to provide GST certificate copy
- GST Rate: 18% on total contract value
- GST Payment: Extra by BHEL (not included in quoted rates)
- HSN Codes: To be mentioned in invoice
- Input Tax Credit: Vendor's responsibility

PART J : PENALTY & PERFORMANCE CLAUSES-

1. System Uptime Performance

1.1 Minimum Uptime Requirement-Target: 98% System Availability per quarter
System uptime is defined as:

$$\text{Uptime (\%)} = \frac{\text{Total Operational Time}}{\text{Total Contract Time}} \times 100$$

Where:

- **Total Operational Time** = Time during which system is fully functional
- **Total Contract Time** = Total time in the quarter excluding approved exclusions

1.2 Inclusion in Downtime: -

- Reader failure
- Software crash or malfunction
- Central Server failure
- Integration failure with Electronic Gate Pass System
- Inability to record attendance or authenticate users

1.3 Exclusions from Downtime: - Downtime penalties do NOT apply during:

- Planned preventive maintenance (≤ 4 hours/month, 72 hrs notice)
- Force majeure such as natural disaster, civil unrest, pandemic or any government restrictions
- Client-caused issues such as power failure, network breakdown)
- Scheduled system backups communicated in advance.

1.4 Uptime Penalty Schedule

Quarterly Uptime	Penalty	Impact
≥98%	NIL	No penalty
95-98%	10% of quarterly billing	Deduction from RAB
90-95%	12.5% of quarterly billing	Deduction from RAB
<90%	15% of quarterly billing	Contract Termination Warning letter will be issued.
<90%	For 2 consecutive quarter	Contract liable for termination

- Quarterly billing value shall be calculated as 25% of annual AMC value

1.5 Calculation Method

- Uptime shall be calculated **monthly**
- Quarterly uptime = average of the three months**
- Monthly reports shall be submitted by the vendor
- Final calculation shall be validated by **BHEL engineer In charge.**

1.6 Total Penalty Cap for System Uptime clause is

- Penalties for non-upkeep of system Uptime in any quarter shall not exceed 15% of the total quarterly Billing value.
- If multiple breaches occur:
 - Penalties shall be aggregated
 - Total deduction shall be limited to 15% of quarterly billing
- Unused penalty capacity **shall not carry forward to subsequent quarters.**

2 Defect & Quality Penalties

2.1 Issue Classification & Response Times

Severity	Issue Type	Response Time	Resolution Target	Breach Penalty
Critical	System down, all readers offline, zero attendance recording	2 hours	8 hours	- Per critical defect: 5% of quarterly billing - If not resolved within 8 hours: Additional 5% penalty - Per day of unresolved: Additional 2.5% penalty └ Max: 10% of quarterly billing
High	Multiple readers offline (>20%), database inaccessible, data loss risk	4 hours	24 hours	- Per defect: 2.5% of quarterly billing - If not resolved within 24 hours: Additional 2.5% - Per day of unresolved (after 24h): 1% penalty - Max: 5% of quarterly billing
Medium	Single reader offline, sync delay >15 min, performance degraded, minor feature failure, user inconvenience	8 hours	48 hours	- Per defect: 1% of quarterly billing - Resolution target: 48 hours - No penalty if resolved within SLA - Max: 5% of quarterly billing
Low	Minor bugs, cosmetic issues, feature requests, slow response	24 hours	3 days	- Per defect: 0.5 % of quarterly billing - Resolution target: 3 days - No penalty if resolved within SLA - Max: 5% of quarterly billing

2.2 Definition of Response

Response shall be considered valid only when:

- Vendor has been notified **AND**
- Technical investigation has started

The following shall qualify as response:

- Technical investigation initiated
- Remote system access obtained
- On-site engineer dispatched

The following **shall NOT** be considered response:

- Acknowledgment email without investigation

2.3 If the vendor fails to meet response timelines **on three cumulative occasions in the quarter**, the following penalty shall apply:

- 10% deduction from the value of the subsequent Running Account Bill (RAB).

3. Data Synchronization Penalties

3.1 Sync Failure Metrics

Target: 99.5% successful syncs

Definitions:

- **Successful Sync:** Punch record received by central server within **5 seconds**
- **Failed Sync:**
 - Punch not recorded
 - Recorded with delay greater than **5 seconds**

Calculation: Success Rate= $\frac{\text{Successful syncs} \times 100}{\text{Total syncs}}$

4. EGPS Integration Sync Penalties

Sync Type	Target	Breach Penalty
Workman master data	100% synced within 5 min	2% of RAB per failed sync
Validity date updates	100% within 60 min	1.5% of RAB per failed record
User deletion	100% within 5 min	3% of RAB per undeleted user
Audit log push	95% within 24 hours	1% of RAB per missing record

5. The penalties are applicable during the Warranty period and the deductions shall be made from security deposit of the contractor.

5.2 If penalties exceed Security deposit, the balance shall be recovered from subsequent RAB.

6. Total Penalty Cap & Aggregation

Category-wise caps:

- System downtime penalties: 15% of quarterly billing
- Defect and Quality Penalties: 10% of quarterly billing
- Sync failure penalties: 10% of quarterly billing
- Total quarterly cap: 15 % of total quarterly billing value

Excess penalties: Cannot be carried forward to next quarter.

PART K:- PQR & EVALUATION CRITERIA

Bidder shall essentially meet all the Qualifying Requirements as cited below: -

1. Technical

- 1.1 Bidder should have supplied & installed a Biometric attendance and access Control System with Face recognition Biometric Attendance readers, at any Power Plant or other infrastructure project or any other industry in the last three years from latest date of bid submission. Bidder to submit work orders copies for orders executed which shall be subjected to verification.

- 1.2 Bidder must provide "Completion Certificates" or "Satisfactory Performance Certificates" from the end-user (Client) along with the Purchase Orders (POs) which shall be subjected to verification.
- 1.3 Bidder to submit a self-declaration letter that bidder has not been blacklisted by any PSU, Government organization, or BHEL unit in the past 3 years due to any reason.
- 1.4 Only Technically qualified bidder will perform the PoC (or) Live demonstration at BHEL PSSR Chennai before the price bid is opened.
- 1.5 Warranty declaration- Vendor has to provide the Original Warranty certificate from the OEM for support for spares and services for the warranty period.

2. Proof of Concept

- As mentioned in the Part C, clause 1 “Vendors must provide a Proof of Concept (POC), if they are qualified technically, submission to demonstrate technical feasibility, conducted at BHEL Integrated Office Complex, 24/4, TNEB road, Pallikaranai, Chennai-600100.
- The PoC Demonstration has to be completed within 7 working days of the written intimation from BHEL Chennai.
- The equipment required for the demonstration of the PoC shall be in the scope of the Bidder.

Price bids of those bidders who stand qualified subsequent to the compliance of PQR criteria 1 & 2 shall be opened.

Explanatory Notes for PQR

1. ‘Supplied’ in QR - A means bidder should have achieved the criteria specified in the QR-A even if the total contract has not been completed or closed and bidder shall furnish relevant documents against the above PQRs inclusive of Purchase order (wherein PO no., date, PO Value etc. is legible) along with *proof of supply (i.e. - Copy of Invoices / LR Copies/ Completion Certificate/ Store Receipt Vouchers/ Payment Advice etc.)* in the respective attachments in their offer in support of PQR.
2. Latest date of offer submission (considering all tender extensions, if any) shall be reckoned as the date of Technical Bid opening and this date shall be considered for the evaluation of credential thus submitted for PQR-A.
3. Consortium bidding is not allowed.
4. After satisfactory fulfilment of all the above criteria/ requirement, offer shall be considered for further evaluation as per NIT and all other terms of the tender.
5. MSME bidders are not exempted from the PQC and technical qualification along with PoC demonstration is mandatory.

Credentials furnished by the bidder against “PRE-QUALIFYING CRITERIA” shall be verified from the issuing authority for its authenticity. In case, any credential (s) is/are found to be spurious, offer of the bidder is liable to be rejected and BHEL reserves the right to initiate any further action as per its internal guidelines.

PART L: - PROJECT INFORMATION

S NO.	DESCRIPTION	DETAILS
1.	Name of the Project	1 x 800 MW SCCL Thermal Power Project
2.	Owner	Singareni Collieries Company Limited
3.	Site Location	Telangana
4.	Location Coordinates	The latitude and longitude of site are 18o 48'30" to 18o 50' 35" N and 79o 34' 00" to 79o 35' 30"E respectively
5.	Nearest Village	Pegadapalli village
6.	Nearest Town	Mancherial of Telangana (distance 14.6 Km)
7.	Nearest Highway	NH-16 (Nirmal-Chinnur section) (distance 500M)
8.	State capital	Hyderabad City: 250 Kms
9.	Nearest Railway Station	Mancherial railway station on Nagpur-Kazipet main rail line of South-Central Railway, located at a distance of about 14.6 kms.
10.	Nearest Airport	Shamshabad Airport, Hyderabad at a distance of about 250 KM.
11.	Vicinity Plan of the project is enclosed as Annexure I.	

PART M: CORRECTIONS / REVISIONS IN SPECIAL CONDITIONS OF CONTRACT, GENERAL CONDITIONS OF CONTRACT AND FORMS & PROCEDURES

Sl. No.: 01

Following Clauses in General Conditions of Contract (GCC) are modified/ revised/ added:

S. No	GCC Clause Reference	Modification / Revision / Addition in GCC Clause
3.	GCC Clause 1.10.3, Sl. No (vii)	The following mode of deposit, Sl. No. (vii) is added: e) Insurance Surety Bonds
4.	Note mentioned under the GCC Clause 1.10.3	Note mentioned under GCC Clause 1.10.3 is revised as below: Note: (1) BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith. (2) In case of delay in submission of security deposit, enhanced security deposit which would include interest (Repo rate +4%) for the delayed period, shall be submitted by the bidder.
5.	GCC Clause 1.10.8	GCC Clause 1.10.8 is revised as below: Bidder agrees to submit security deposit required for execution of the contract within the time period mentioned. In case of delay in submission of security deposit, enhanced security deposit which would include interest (Repo rate+4%) for the delayed period, shall be submitted by the bidder. Further, if security deposit is not submitted till such time the first bill becomes due, the amount of security deposit due shall be recovered as per terms defined in NIT / contract, from the bills along with due interest.

7.	New Clause for “Breach of Contract, Remedies and Termination” is added in place of existing clause of Risk & Cost (i.e. 2.7.2.1 to 2.7.3)	1. Clause 2.7.2 and 2.7.3 are revised as: 2.7.2 <u>Breach of Contract, Remedies and Termination</u> 2.7.2.1 BHEL shall terminate the contract after due notice of a period of 14 days in any of the following cases, which if not rectified/ improved within the time period mentioned in the notice, then, ‘Breach of Contract’ will be considered to have been established: - i). Contractor’s poor progress of the work vis-à-vis execution timeline as stipulated in the Contract, backlog attributable to contractor including unexecuted portion of work does not appear to be executable within balance available period considering its performance of execution. - ii). Withdrawal from or abandonment of the work by contractor before completion of the work as per contract. - iii). Non-completion of work by the Contractor within scheduled completion period as per Contract or as extended from time to time, for the reasons attributable to the contractor. - iv). Repeated failure of contractor in deploying the required resources, to comply the statutory requirements etc. even after given by BHEL in writing. - v). Strike or Lockout declared is not settled within a period of one month. - vi). Termination of Contract on account of any other reason (s) attributable to Contractor. - vii). Assignment, transfer, subletting of Contract without BHEL’s written permission. - vii). Non-compliance to any contractual condition or any other default attributable to Contractor.
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		<u>2.7.2.2 Remedies in case of Breach of Contract is established</u> In case 'Breach of Contract' is established, Security Deposit and Retention Amount shall be encashed/ forfeited. This is without prejudice to BHEL's right to levy of liquidated damages, debarment etc. which shall be applied as per the provisions of the contract. Sequence of recovery to be made in case of breach of contract is established, is as below: a) In case the value of Security Deposit & Retention Amount, available for the Contract, is less than 10% of the Contract Value, the balance amount shall be recovered from dues available in the form of Bills payable to contractor, BGs against the same contract etc. b) Demand notice for deposit of balance recovery amount shall be sent to contractor, if funds are insufficient to effect complete recovery against dues indicated in (a) above. c) If contractor fails to deposit the balance amount to be recovered within the period as prescribed in demand notice, following action shall be taken for balance recovery: I. Dues payable to contractor against other contracts in the same Region shall be considered for recovery. II. If recovery cannot be made out of dues payable to the contractor as above, balance amount to be recovered, shall be informed to other Regions/Units for making recovery from the Unpaid Bills/Running Bills/SD/BGs/Final Bills of contractor. III. In-case recoveries are not possible with any of the above available options, Legal action shall be initiated for recovery against contractor. Note: 1) In addition to above, levy of liquidated damages, debarment, termination, short-closure etc. shall be applied as per provisions of the contract. 2) If tendering is done for the balance work, the defaulted contractor (including all the members/partners in case of JV/ partnership firm) shall not be eligible for either executing the balance work or to participate in the tender(s) for executing the balance work.
		<u>2.7.3 In case Contractor fails to deploy the resources as per requirement informed by BHEL in writing to expedite the work, BHEL can deploy own/hired/otherwise arranged resources and recover the expenses incurred from the dues payable to contractor. Recoveries shall be actual expenses incurred plus 5% overheads or as defined in TCC.</u>

8.	GCC Clause 2.7.7	GCC Clause 2.7.7 is revised as: 1. BHEL may permit or direct contractor to demobilize and remobilize at a future date as intimated by BHEL in case of following situations for reasons other than Force majeure conditions and not attributable to contractor: i) suspension of work(s) at a Project either by BHEL or Customer, or ii) where work comes to a complete halt or reaches a stage wherein worthwhile works cannot be executed and there is no possibility of commencement of work for a period of not less than three months 2. In such cases, charges towards demobilization and remobilization shall be as decided by BHEL after successful remobilization by contractor at site, and decision of BHEL shall be final and binding on the contractor. After remobilization, all conditions as per contract shall become applicable. In case Contractor does not remobilize with adequate resources or does not start the work within the period as intimated, then BHEL reserves the right to terminate the contract and effect remedies under Clause 2.7.2.2. Duration of the contract/time extension shall be revised suitably. In case of any conflict, BHEL decision in this regard shall be final and binding on the contractor.
10.	GCC Clause 2.19.1	GCC Clause 2.19.1 is revised as: The contractor will be fully responsible for all disputes and other issues connected with his labour. In the event of the contractor's labour resorting to strike or the Contractor
S. No	GCC Clause Reference	Modification / Revision / Addition in GCC Clause
		resorting to lockout and if the strike or lockout declared is not settled within a period of one month, it may be considered as 'Breach of Contract' under Clause 2.7 and the remedies under Clause 2.7.2.2 may be executed, at the discretion of BHEL.
11.	GCC Clause 2.24.1	GCC Clause 2.24.1 is revised as: Even though the work will be carried out under the supervision of BHEL Engineers the Contractor will be responsible for the quality of the workmanship and shall guarantee the work done for a period of Twelve months from the date of commencement of guarantee period as defined in Technical Conditions of Contract, for good workmanship and shall rectify free of cost all defects due to faulty erection detected during the guarantee period. In the event of the Contractor failing to repair the defective works within the time specified by the Engineer, BHEL may proceed to undertake the repairs of such defective works, by itself, without prejudice to any other rights and recover the cost incurred for the same along with 5% overheads from the Security Deposit.

Sl. No.: 02

In addition to The SECURITY DEPOSIT (SD) clause 1.10 published in General Conditions of Contract (Volume I Book II) following is added for FDR

1. FDR should be Lien marked in favour of M/s BHEL.

2. Bank issuing FDR should agree to the following conditions and submit duly signed letter addressed to BHEL, confirming the following points:
- a) There is no Lock in Period for Encashment of the Said FDR
 - b) The amount under the Said FDR would be paid to BHEL-PSSR on Demand, at any point of Time before, or upon Maturity, without any reference to the (Contactor Name).
 - c) Encashment whether premature or otherwise would not require any clearance from any other authority /Person.
 - d) FDR will be auto renewed for such period/s initially mentioned in the FDR and the intimation of Such renewal shall be sent to BHEL, PSSR and (Contractor), immediately after the renewal.
 - e) FDR will not be closed, Encashed, Changed or Discharged without the Written permission/Confirmation from M/s BHEL PSSR.
 - f) Bank to acknowledge and agree that the Lien created on the FDR shall be in Force until M/s BHEL PSSR, gives a Discharge Letter in this regard.

Sl. No.: 03

Detailed Instruction for Security deposits through SBI e-collect:

Step 1: Vendors may visit SBI collect website, the URL of which is <https://www.onlinesbi.sbi/sbicollect> where they get the home page with various categories of institutions.

Step 2: Select PSU - Public Sector Undertakings – leading to a page with list of PSUs
Step 3: Type BHEL and search, they get to see all BHEL divisions wherein they shall select BHEL PSSR Chennai. The screen shot of the same is given below.

The screenshot shows the SBI Collect website interface. At the top, there's a navigation bar with 'SB Collect' and links for 'HOME', 'TRANSACTION HISTORY', 'FAQ'S', and 'CUSTOMER SUPPORT'. Below this is a 'Payment Progress' section with a five-step process: 'Select Payee' (current step), 'Enter Payment Details', 'Verify Payment Details', 'Complete Payment', and 'Print Receipt'. The 'Select Payee' section shows a search for 'bhel' under the category 'PSU-Public Sector Undertaking'. A 'Filter by State' dropdown is set to 'Tamil Nadu'. The search results show two entries: 'BHEL BAP RANIPET' and 'BHEL PSSR CHENNAI', both in 'Tamil Nadu'. The 'BHEL PSSR CHENNAI' entry is highlighted. At the bottom, there's a 'Back' button and a footer with '© State Bank of India' and links for 'Privacy Statement', 'Disclosures', and 'Terms of Use'.

Name of PSU-Public Sector Undertaking	State
BHEL BAP RANIPET	Tamil Nadu
BHEL PSSR CHENNAI	Tamil Nadu

Step 4: Select EMD receipts. Having selected the Payee in the Payment Progress, it will

lead to the payment details – a drop down list of values. From that list, vendors shall select EMD receipts. Upon clicking the entry EMD receipts, a form will open asking for the remitters details and the details of the tender.

Step 5: Confirm details and pay

Fill in all the details correctly, verify the details, and complete the payment as it is leading to the payment gateway.

Step 6: Take a printout on completing the payment and enclose the copy of the same along with the bid submission. Store the copy of receipt for future reference.

Sl. No. 04

Cl 2.17 of GCC – Price Variation Compensation (PVC) – **NOT APPLICABLE**

Sl. No 05

ORC: Not Applicable

Mobilization Advance not applicable

Following Clauses are modified in the Special Conditions of Contract (SCC)

Sl. No.: 06: Clause No. 10.5 on RA Bill Payments, in Special Conditions of Contract (SCC), Volume- IB, Book- II, is revised as under:

“The payment for running bills will normally be released within 30 days of submission of running bill complete in all respects with all documents. It is the responsibility of the contractor to make his own arrangements for making timely payments towards labour wages, statutory payments, outstanding dues etc., and other dues in the meanwhile.”

Sl. No.: 07

SCC Cl. No.	Existing Clause	Modified Clause
4.2.1.7	In the event of contractor failing to arrange the required tools, plants, machinery, equipment, material or non-availability of the same owing to breakdown, BHEL will make alternative arrangement at the risk and cost of the contractor.....	In the event of contractor failing to arrange the required tools, plants, machinery, equipment, material or non-availability of the same owing to breakdown, BHEL can deploy own / hired / otherwise arrange resources and recover the expenses incurred from the dues payable to contractor. Recoveries shall be actual expenses incurred plus 5% overheads or as defined in TCC.....
4.2.2.5	 In case of any lapses on the part of the contractor, BHEL at its own discretion shall get the servicing / repair of equipment done at the risk and cost of the contractor along with BHEL overheads.....	In case of any lapses on the part of the contractor, BHEL at its own discretion shall get the servicing / repair of equipment done and recover the expenses incurred from the dues payable to contractor. Recoveries shall be actual expenses incurred plus 5% overheads or as defined in TCC.....

5.14	If at any time, it is found that the contractor is not in a position to deploy the required engineers / supervisors / workmen due to any reason, BHEL shall have the option to make alternate arrangements at the contractor's risk and cost. The expenditure incurred along with BHEL overheads thereon shall be recovered from the contractor.	If at any time, it is found that the contractor is not in a position to deploy the required engineers / supervisors / workmen due to any reason, BHEL shall have the option to make alternate arrangements and recover the expenses incurred from the dues payable to contractor. Recoveries shall be actual expenses incurred plus 5% overheads or as defined in TCC.
6.1.11	If the material belonging to the contractor are stored in area other than those earmarked for his operation the engineer will have the right to get it moved to the area earmarked for the contractor at the contractor's risk and cost	If the material belonging to the contractor are stored in area other than those earmarked for his operation the engineer will have the right to get it moved to the area earmarked for the contractor and recover the expenses incurred from the dues payable to contractor. Recoveries shall be actual expenses incurred plus 5% overheads or as defined in TCC.

POC EVALUATION CHECKLIST
[To be completed by BHEL during POC]

- Tender Title: -
- Tender Ref No: -
- Bidder Name and Address
- Bidder Representatives details:
- Complete Equipment details used for PoC:
- Complete Software details used for PoC:
- Software used for PoC:
- Technology used for PoC:

1) HARDWARE TESTING: -

- ☐ Make and Model of the reader is the same as the one which will be supplied.
- ☐ Face recognition working (enrollment & verification)
- ☐ Fingerprint capture successful (5+ templates per person)
- ☐ Multi-modal verification working (face + fingerprint)

2) SOFTWARE TESTING: -

Database:

- ☐ Central server database created
- ☐ Tables created: workman, punch, authorization, health
- ☐ Sample data loaded successfully
- ☐ Queries executing <5 seconds

3) INTEGRATION TESTING:

- ☐ Employee Enrollment against Workman ID (alpha numeric) in reader.
- ☐ Establishing connection between Oracle Database and Reader Database
- ☐ Automated pushing of validity data to the reader
- ☐ Automated pushing of active status of workman.
- ☐ Automated rejection of non-validated workman and automated acceptance of validated workman.
- ☐ Automated fetching of attendance data from reader

4) WORKER EXPERIENCE:

- ☐ Enrollment time <2 minutes per person
- ☐ Punch time <5 seconds (face capture to confirmation)
- ☐ No confusion with multi-modal options
- ☐ Accessibility for all user types

OVERALL ASSESSMENT:

PASS - All critical functions working, ready for production

FAIL - Critical issues prevent production deployment

POC Verdict: ☐ APPROVED ☐ ☐ REJECTED ☐

Recommendations:

**Signature of Evaluation Committee
(Certified by DTG)**

Signature of Bidder Representative(s)

Date: -

Notes for PoC: -

1. The decision of the evaluation committee on the Acceptance/Rejection of the demonstration will be final.
2. The bidder has to demonstrate the PoC at BHEL PSSR office, 24/4, Integrated Office Complex, TNEB, Road, Pallikaranai, Chennai. Online/virtual demonstration of the PoC will not be accepted/entertained.
3. The PoC Demonstration has to be completed within 7 working days of the written intimation from BHEL Chennai.
4. The equipment required for the demonstration of the PoC shall be in the scope of the Bidder.

ANNEXURE-B: - Preventive maintenance reports to contain

- i) Visual Inspections: Checking all equipment viz. readers, etc for physical damage, wear, or tampering
- ii) Cleaning: Removing dust, dirt, and debris from devices and control components.
- iii) Power Supply Checks: Testing main power and battery backups to ensure functionality during outages.
- iv) Wiring and Connections: Inspecting cables and conduits for proper support, damage, or signs of wear.
- v) Software and Firmware: Ensuring all software is up-to-date and functioning correctly, including any integrations with BHEL EGPS.
- vi) Corrective Maintenance: Details of any repair work, including date, issue description, resolution, parts used, and labour hours.
- vii) System Uptime/Downtime: Metrics on system availability and any outages that occurred.
- viii) Any new issues identified, suggestions for improvement, etc.
- ix) Reports with details of
 - Reader uptime report
 - Sync success rate
 - Incident response log
 - Defect register & etc.