

ANNEXURE – FOR TRAINING DOCUMENTATION

The SI shall prepare comprehensive **Standard Operating Procedures (SOPs)**, **Maintenance Operating Procedures (MOPs)** and **Emergency Operating Procedures (EOPs)** for all sub-systems, covering at least the following:

1 Standard Operating Procedures (SOPs)**1. Daily / Weekly / Monthly Operations SOPs for:**

- Data Center opening/closing and access management
- Visual inspections (racks, cables, panels, CRACs, leak detection, etc.)
- Monitoring of power, temperature, humidity and alarms via DCIM/BMS
- Logbook / checklist formats for routine operation

2. SOPs for:

- Starting and stopping critical systems (UPS, DG, CRAC, DCIM, IT systems)
- Controlled start-up and shutdown of servers, storage and network devices
- Backup job monitoring and verification
- Restore requests and approval flow

2 Maintenance Operating Procedures (MOPs)**1. Planned Preventive Maintenance (PPM) Procedures for:**

- UPS, batteries, LT panels and earthing inspection
- CRAC/CRAH units, filters and cooling system checks
- Fire detection and suppression systems
- Access control and CCTV systems
- Network, servers and storage firmware upgrades

2. MOP templates shall include:

- Purpose, scope and pre-requisites
- Step-by-step sequence of actions with safety precautions
- Estimated downtime and impact
- Rollback steps in case of failure

- Post-maintenance validation checks

3 Emergency Operating Procedures (EOPs)

1. EOPs shall be created for at least the following scenarios:
 - Power failure or loss of one power path (A/B)
 - UPS failure / battery failure / DG failure
 - Chiller / CRAC failure or high-temperature event
 - Fire alarm and gas release scenario in DC
 - Water leak or flood within DC rooms
 - Security breach / unauthorized access
 - Major hardware failure (server, storage, network core)
2. Each EOP shall clearly define:
 - Immediate actions for operator and security staff
 - Escalation matrix (names, roles, mobile numbers, email)
 - Communication plan (internal, management, clients if applicable)
 - Recovery and normalization steps

4 Integrated DC Runbook and Asset Documentation

1. SI shall prepare an **Integrated Data Center Runbook**, containing:
 - Overview of DC architecture and sub-systems
 - Key SOPs, MOPs and EOPs references
 - Escalation matrix and contact list
 - Checklists for daily, weekly, monthly and quarterly activities
2. SI shall prepare detailed **Asset Registers** for all supplied equipment:
 - Make, model, serial number, installed location, rack/U-position
 - Warranty start/end date, AMC details
 - Criticality classification and spare recommendations
3. SI shall provide **Preventive Maintenance Schedules** (annual) for all major systems in tabular form.

5 Format, Quantity and Handover Requirements

1. Unless specified otherwise, the SI shall provide:
 - Minimum **3 hard-bound sets** of complete documentation (indexed and labeled) for ERDA.
 - **1 soft copy master set** in editable format (MS Word/Excel/Visio/CAD as applicable).
 - **1 soft copy archive set** in PDF.
 2. Each document set shall be properly indexed, with:
 - Section numbers
 - Revision numbers and dates
 - Author / approver names
 3. Documentation shall be updated to **As-Built status** after completion of installation, testing and commissioning, reflecting:
 - All field changes / deviations
 - Final configuration and settings
 4. **Final payment / retention release** may be **linked to successful submission and acceptance** of complete documentation by ERDA.
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6 Training and Knowledge Transfer

1. SI shall conduct **on-site training sessions** for ERDA staff based on the finalized documentation and SOPs:
 - Operations training for IT, Facilities and Security teams
 - Maintenance training (basic level) for in-house staff
 - DCIM/BMS console training and reporting
2. Training shall include:
 - Presentation material (soft copy)
 - Hands-on demonstration in the live environment
 - Question & Answer session
3. SI shall provide **attendance sheets** and a brief **training completion report** to ERDA.