

TSEU Substation Design Submission Checklist

General Information

- Project Title and Reference Number
- Location and Site Plan (including accessibility and proximity to load centers)
- Project Description (scope, purpose, and objectives)
- Contact Information of Design Team and Project Manager

Site Layout and Configuration

- Complete site layout showing major equipment (transformers, circuit breakers, switchgear)
- Equipment Spacing and Access Routes
- Security Perimeter Fencing and Access Control Points
- Future Expansion Provisions
- Site Drainage Plan and Erosion Control Measures

Electrical System Design

- Voltage Ratings and Fault Level Specifications
- Transformer Specifications (including MVA ratings and voltage taps)
- Grounding System Layout and Design (with impedance values)
- Short Circuit Analysis and Load Flow Study
- Protection and Coordination Study (including protection device settings)
- Arc Flash Hazard Analysis and Mitigation Measures

Protection and Control Systems

- Protection Relay Types and Settings Documentation
- SCADA Integration Plan and Specifications
- Control Wiring Diagrams and Schematics
- Communication Network Diagram (with cybersecurity measures)
- Redundant Control Paths and Backup Systems (if applicable)
- Testing and Calibration Procedures for Protection Systems

Environmental and Safety Considerations

- Fire Detection and Suppression Systems (including type and locations)
- Noise Control Measures (for transformers and other noise-producing equipment)
- Oil Spill Containment Measures (where oil-filled equipment is used)
- Physical Security Plan (including camera placements and secure access)
- Environmental Impact Assessment (EIA) and Mitigation Plan
- Emergency Procedures Documentation

Documentation and Compliance Records

- Equipment Specifications and Data Sheets
- Maintenance Plan and Schedules for all Equipment
- Inspection and Testing Records (pre-commissioning and operational)
- Compliance Certifications (for electrical, environmental, and safety codes)
- Record of Design Changes and Deviations from TSEU Standards
- Contact Information for Maintenance and Operations Personnel