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1. PURPOSE

1.1. PPM QA/QC MISSION STATEMENT

The mission statement of the Portfolio & Project Management (PPM) Quality Assurance / Quality Control (QA/QC) team is to empower people, processes, and culture to achieve excellence through quality. As such, PPM QA/QC diligently works to effectively implement quality into San Diego Gas & Electric (SDG&E) projects and programs to: (1) mitigate risk of facility failure and (2) achieve and extend service life of facilities, to support clean, safe, and reliable energy infrastructure to SDG&E's customers and communities it serves.

2. APPLICATION

2.1. DOCUMENT INTENT

The intent of this document is to define the scope of services rendered to various business units, departments, and programs by the PPM QA/QC team. These services support a myriad of facility types, from distribution, transmission, substation, battery storage, clean transportation initiatives, among others. The range of services provided to support these diverse facility types include electrical, structural, and gas reviews and inspections performed by qualified electrical workers (QEWs), engineers, designers, and inspectors. Herein, these services are memorialized for reference and information purposes to applicable stakeholders, company representatives, and for reference in construction contracts.

This document shall be used in tandem with applicable regulatory documents, code requirements, and SDG&E standards, policies, and procedures, and are intended to supplement other project-specific QA/QC efforts and fulfill a component of the overall QA/QC efforts implemented for each project.

3. REFERENCES

All analysis, reviews, and inspections shall be in compliance with applicable rules and regulations specified in the most current editions of the following codes and standards, unless noted otherwise. When codes or standards are in conflict or when questions arise, the specific issues shall be discussed with and resolved by SDG&E, as well as all relevant parties.

3.1. NATIONAL & STATE CODES

3.1.1. California Public Utilities Commission General Orders 95, 128, 165, 174

- https://ia.cpuc.ca.gov/gos/index.html
- https://www.cpuc.ca.gov/Home/Proceedings-and-Rulemaking/CPUC-general-orders

3.1.2. National Electrical Safety Code (NESC)

- Institute of Electrical and Electronics Engineers (IEEE); National Electrical Safety code (NESC), C2-2023; Released August 1, 2022; Effective February 1, 2023; https://standards.ieee.org/products-programs/nesc/products/

3.1.3. Applicable codes

- ACI – American Concrete Institute
- AISC – American Institute of Steel Construction
- AISC – American Iron and Steel Construction
- AMPP – Association for Materials and Protection and Performance (Formerly SSPC and NACE)
- ANSI – American National Standards Institute
- API – American Petroleum Institute
- ASCE – American Society of Civil Engineers
- ASME – American Society of Mechanical Engineers
- ASTM – ASTM International
- AWS – American Welding Society
- Greenbook – Standard Specifications for public works construction
- CBC – California Building Code
- FHWA – Federal Highway Administration
- IEEE – Institute of Electrical and Electronic Engineers

- ICC – International Code Council
- NCMA – National Concrete Masonry Association
- NEC – National Electrical Code
- NEMA – National Electrical Manufacturers Association
- NFPA – National Fire Protection Association
- OSHA – Occupational Safety and Health Administration
- UL – Underwriters Laboratories
- SDRSD – San Diego Regional Standards

3.2. SDG&E STANDARDS & SPECIFICATIONS

3.2.1. Electric Substation Standards and Specification

- https://sempra.sharepoint.com/sites/sdge-powerup/substation/SitePages/Home.aspx

3.2.2. Electric Transmission Engineering & Design

- https://sempra.sharepoint.com/sites/sdge-powerup/ted/SitePages/Home.aspx

3.2.3. Electric Distribution Engineering

- https://sempra.sharepoint.com/sites/sdge-powerup/ede

3.2.4. Portfolio & Project Management Policies and Procedures

- https://sempra.sharepoint.com/teams/qaqcprod/SitePages/Home.aspx
- https://sempra.sharepoint.com/teams/pmo-home/SitePages/Home.aspx

4. ACRONYMS AND DEFINITIONS

- **Agreement:** All documents involving the Work that is agreed to and legally binding between Owner and Contractor.
- **AL&M (Aerial Lighting and Marking)** – A component of the overhead distribution and transmission design associated with the requirements specified by the Federal Aviation Association and other regulatory agencies that relate to the height and marking of structures and conductors.
- **All Weather 24/7 Vehicle Access Location** – A location that is bucket truck accessible, at any time, under all weather conditions.
- **ASD (Advanced SCADA Devices)** – Devices (reclosers, line monitors, and radios) with advanced communication capabilities required for falling conductor protection.
- **BMP (Best Management Practices)** – The term "Best Management Practices," or BMP, was introduced and defined by the U.S. Environmental Protection Agency as a practice or combination of practices that is an effective, practicable means of preventing or reducing the amount of pollution generated by nonpoint sources.
- **BOP (Balance of Plant)** – A power engineering term which refers to the various supporting and auxiliary components of a power plant system required to produce energy. BoP systems provide the support needed to keep the plant running effectively and efficiently.
- **BOT (Build Own Transfer)** – A Project in which a developer often builds and owns the project assets until they are transferred at the end of the contract to the Owner.
- **CAN** – A filename extension for PLS-CADD file that contains the criteria used for connections and anchors.
- **CAR (Corrective Action Report)** – A procedure used to report a defect and originate a corrective action. A CAR is often issued to document a procedure for an item that is not covered by an NCR (e.g., a repair after an item is corrected).
- **CITP (Construction Inspection and Testing Plan)** – An inspection and test plan, or inspection test plan, is a document or series of documents used for quality assurance purposes. The CITP outlines and documents what, how often, and the acceptance criteria to conduct inspections to ensure the project meets the requirements and standards outlined in the contract. For each inspection listed, the minimum requirements or certification level of the inspector must be listed. For each inspection, the code, specification, or requirement must be outlined by section.
- **CNF (Cleveland National Forest)** – Encompasses 460,000 acres (720 sq mi) of inland montane regions—approx. 60 miles from the Pacific Ocean—within the counties of San Diego, Riverside, and Orange, California.
- **Continuous Inspection** – The full-time observation of work requiring inspection.

- **CRZ (Clear Recovery Zone)** – Term used by Caltrans to define an area for errant vehicles to potentially regain control.
- **Delta Construction** – Center wire is attached to a ridge pin at the pole top.
- **Drivable Corridor (for clearances)** – Any area where a *typical* private or commercial vehicle can *reasonably* traverse terrain, including agricultural or commercial equipment.
- **DC (Document Control)** – A series of practices that ensure that documents are created, reviewed, distributed, and disposed of in an organized and verifiable manner.
- **DFOW (Definable Feature of Work)** – Any task, which is separate and distinct from other tasks, has separate control requirements, or is identified by different trades or disciplines.
- **ECN (Engineering Change Notice)** – A document authorizing and recording design changes throughout the prototyping and lifecycle phases of a product. ECN documentation contains the justification for changes made to a component or system once the initial design is complete.
- **EPC (Engineer, Procure, and Construct)** – A contractual model wherein a contractor plans and executes all engineering, procurement, and construction activities needed to complete a project.
- **EPIC (Engineering Problem Identification and Correction)** – A form used when corrections or changes are prescribed by engineering stakeholders to construction after initial issuance of a design is sent to construction.
- **ERO (Electric Regional Operations)** – Electric Regional Operations includes all electric distribution crews, engineers, and support staff located in six districts and two satellite operating centers (Ramona and Mountain Empire), which covers SDGE's entire electric distribution system and service territory. The primary job functions include: (1) inspection and maintenance of the electric distribution system in compliance with CPUC GO 95, 128, and 165, (2) secondary and service issues and other customer observations, (3) restoration of service after outages, and (4) construct new electric infrastructure.
- **ESO (Electric System Operators)** – A system operator is on the front lines ensuring the reliable delivery of electricity to consumers, businesses, and industry. System operators manage the power grid from a set of computer consoles within a control center.
- **ESS (Energy Storage Systems)** – A device or group of devices used to store energy and supply it for later use. Battery, chemical, electrochemical, mechanical, and thermal are some of the popular energy storage systems available to meet everyday energy needs.

- **FCA (Field Contract Administrator)** – Supports project construction management activities.
- **FCP (Falling Conductor Protection)** – A network of radios, line monitors, and reclosers that utilizes synchrophase data to deenergize conductors.
- **FCN (Field Change Notice)** – A formal notification process used to document redlines/field changes that are not significant design changes that impact engineering calculations or layouts. FCNs typically apply to existing IFC drawings and are transmitted to the appropriate parties via SharePoint. The FCN changes are captured on the As-Builts or updated IFC drawings after transmitted to appropriate parties.
- **Flat Construction** – One or more wires on a single arm, no wires are on a ridge pin at the pole top.
- **Fog Line** – Solid white line on the edge of a traveled way that is used as a reference point for distribution and transmission facility alignment.
- **FPI (Fire Potential Index)** – A rating to determine the risk of fire and its likely behavior. This index ranges from one to seventeen and considers fuel moisture, humidity, wind speed, air temperature, and historical fire occurrence.
- **FTB (Flowable Thermal Backfill)** (a trademark of Geotherm, Inc.) – FTB is a controlled low-strength material composed of certain types of stone, sand, fluidizing agents, and cement specifically designed to dissipate the heat generated by underground electric transmission cables.
- **FTZ (Fire Threat Zone) or Tier 2 Fire Zone** – Area determined by CPUC to be at heightened risk for wild fire based on vegetation, land topology, and prevailing wind conditions.
- **G.O. 95 (General Order 95)** – Rules for Overhead Electric Line Construction prescribed by the Public Utilities Commission of the State of California.
- **GRC (General Rate Case)** – Proceedings used to address the costs of operating and maintaining the utility system and the allocation of those costs among customer classes.
- **HFTD (High Fire Threat Districts)** – Areas defined by CPUC that possess higher risk for power line fires igniting and spreading rapidly
- **HRFA (High Risk Fire Area) or Tier 3 Fire Zone** - Area determined by CPUC to be at high risk for wild fire based on vegetation, land topology, and prevailing wind conditions.
- **IE (Independent Evaluators)** – A person that conducts evaluations of the performance outcome measures specified in the regulatory or contractual documents.

- **IFB (Issue For Bid)** – Used to refer to job packages that are used for bidding purposes.
- **IFC (Issue For Construction)** – Used to refer to job packages with completed final design, required permits, and environmental releases needed for construction.
- **IOU (Investor-Owned Utilities)** – Privately owned utilities that may generate and distribute energy and other services over their defined service territory.
- **ISN (International Suppliers Network)** – ISN provides an online contractor management platform, ISNetworld, to help organizations manage internal and governmental compliance requirements.
- **MSA (Master Service Agreement)** – A contractual arrangement with a vendor to provide a specific set of goods or services to the Company over a set period and for set pricing.
- **MCN (Make Corrections Noted)** – A disposition or conclusion to remarks made during review of submittals wherein a submittal is in substantial conformance to the contract, codes, and/or specifications applicable to the submittal. Typically, this disposition implies the Owner had minor corrections and an additional full review is not needed, but changes are requested prior proceeding to the next phase of a workflow.
- **MOT (Maximum Operating Temperature)** – The maximum assumed conductor temperature utilized to analyze sag characteristics.
- **MTR (Mill Test Report)** – An MTR documents a material's physical and chemical properties. These quality assurance certificates show a metal product's compliance with international standards such as ASTM, ANSI, and ASME. Other names for mill test reports include: Certified Mill Test Report; Certified Material Test Report; Mill Certification; Mill Inspection Certificate
- **NCR (Non-Compliance Report)** – Used to formally report known non-compliance issues and complete with remediation actions. Typical non-compliance reports may include, but are not limited to: Failure to meet contract requirements, specifications, environmental standards, safety standards, code requirements, and /or IFC drawings details/specifications.
- **NET (No Exceptions Taken)** – A disposition or conclusion to remarks made during review of submittals wherein a submittal possesses no corrections or comments and is in conformance to the contract, codes, and/or specifications applicable to the submittal.
- **Non-Drivable Corridor (for clearances)** - Any area where *typical* private or commercial vehicles cannot *reasonably* traverse the terrain, including agricultural or commercial equipment.
- **NTP (Notice to Proceed)** – The point in time at which stakeholders are authorized to start performing authorized tasks.

- **OII (Order Instituting Investigation)** – A motion initiated by the PUC to explore broad policy issues, resolve procedural matters, investigate charges of improper or illegal activity by a regulated utility or transportation company, or respond to directives from the Legislature.
- **OIR (Order Instituting Rulemaking)** – An investigatory proceeding opened by the PUC to consider the creation or revision of rules or guidelines in a matter affecting more than one utility or a broad sector of the industry. Comments and proposals are submitted in written form.
- **Periodic Inspection** – The part time or intermittent observation of work requiring inspection. For ongoing work over an extended period, the inspection frequency may be defined in the CITP at a specific interval (e.g., hourly, daily, weekly, etc.).
- **PLS-CADD (Power Line Systems – Computer Aided Design and Drafting)** – Finite element analysis software utilized on projects to perform structural analysis.
- **PLS-Pole** – Power Line Systems program for modeling and analyzing pole structures.
- **Primary Conductor** – Electrical cables on a distribution circuit with a nominal phase to phase voltage greater than 750V, but less than 69kV.
- **Primary or Common Neutral Conductor (PN or CN**)– Conductors within electrical supply distribution systems wherein the grounded neutral conductor is both the neutral conductor of primary circuits of less than 22,500 volts and as the neutral conductor of the secondary circuits of 0 – 750 volts supplied there from.
- **PSPS (Public Safety Power Shutoff)** – Event wherein utilities may temporarily de-energize specific areas to reduce the risk of fires caused by electric infrastructure.
- **R2A (Request to Attach)** – SDG&E analysis process to check compliance when requesting modifications and/or impacting existing transmission poles.
- **R&R (Revise and Resubmit)** – A disposition or conclusion to remarks made during review of submittals wherein a submittal is incomplete or ambiguous and therefore clarification or additional information is required to ascertain compliance with the contract documents and progression to the next phase shall not proceed without additional submittal(s) and/or information.
- **Reduced Tension** – Refers to any conductor or cable section with a design tension that is less than those typically specified to mitigate the necessity for guying or other structural components.
- **RFI (Request for Information)** – Used throughout the project lifecycle to formally request more information as it relates to the scope, design, construction, and/or execution of a project.
- **RFP (Request for Proposal)** – Project announcement posted by an organization to solicit bids for contractor(s) to complete a project.

- **RTS (Reverse Twist Secondary)** – A type of secondary conductor with a reverse twist binder wire and bare neutral messenger.
- **Rural** – Per G.O. 95, referring to all areas not urban, usually in the country, but in some cases within city limits.
- **QATC (Quality Assurance Technical Coordinator)** – Owner's quality assurance personnel to oversee quality on construction projects, ensure procedures are followed, and conduct field inspections to ensure the contractor's compliance with state laws, codes, standards, and contractors' QC plans.
- **SCADA (Supervisory Control and Data Acquisition)** – Networked devices used to monitor electrical assets.
- **Secondary Conductor** – Electrical cables on a distribution circuit with voltage less than or equal to 750V that spans between SDG&E owned poles.
- **Service Drop Conductor** – Electrical cables on a distribution circuit with voltage less than or equal to 750V, that spans between an SDG&E owned facility and a customer meter pole or weather head.
- **SOD (System Operating Diagram)** – A system diagram representing a particular operational condition. Typically presents electrical circuit layouts for informational and design purposes.
- **Structural QA** – Quality Assurance provided by Quality Assurance Technical Coordinators (QATC) and Inspectors.
- **TR (Transmittal)** – A transmittal, also known as a letter of transmittal (LOT), is a digital or physical communication between two parties in a project that acts as a record of proof for the transmission of files, mock-ups, samples, and other documents.
- **Urban** – Per G.O. 95, referring to thickly settled areas (whether in cities or suburbs) or where congested traffic often occurs. Highways on which traffic is often very heavy or locations such as picnic grounds, summer resorts, etc., where people congregate seasonally, are considered as urban.
- **WFI (Wireless Fault Indicator)** – An overhead fault indicating device that detects and reports faults, load, and ambient temperature.
- **WQR** (**Welder Qualification Record)** – A document that qualifies the Welding Procedure Specification.
- **WPS** (**Welding Procedure Specifications)** – A document that serves as a guide for the effective creation of a weld that meets all applicable code requirements and production standards.

5. SDG&E PPM QA/QC SUPPORT SERVICES (BY FACILITY TYPE)

5.1. DISTRIBUTION

Table 1 depicts the QA/QC services provided for the distribution facility type. The *Section Citation* provides the applicable section that provides detailed description, scope of services, deliverables, and timeframes.

Table 1 - Distribution QA/QC Services

QA/QC Electric & Gas Distribution Services		
QA/QC Services	Description	Section Citation
Preliminary Constructability Review (i.e., job walk)	These services include review of overhead and underground distribution jobs by qualified personnel during the 30% design phase of a project.	6.1
Electric Final Constructability Review	These services include review of **electric** overhead and underground distribution jobs by qualified personnel during the 90% design phase of a project, prior to issuance for construction.	6.2
Gas Final Constructability Review	These services include review of **gas** distribution jobs by qualified personnel during the 90% design phase of a project, prior to issuance for construction.	6.3
Electric Post Construction Inspection	These services include post construction inspection of overhead and underground distribution jobs by qualified personnel. After construction activities of facilities are completed, this inspection assesses the in-situ, as-built condition of the facility relative to the job package, applicable standards, specifications, and codes.	6.4
Helicopter Incidental Landing Zone (ILZ) Assessment	These services include review of overhead distribution jobs by qualified personnel during the 30% design phase of a project and provides insight into feasibility of temporary helicopter landing zones, temporary construction staging zones, and laydown yards	6.5
Avian Compliance Reporting	These services include the reporting of avian safe compliance for overhead facilities by qualified personnel during the post construction inspection process to catalog and report data to various agencies	6.6

5.2. TRANSMISSION

Table 2 depicts the QA/QC services provided for the transmission facility type. The *Section Citation* provides the applicable section that provides detailed description, scope of services, deliverables, and timeframes.

Table 2 - Transmission QA/QC Services

QA/QC Transmission Services		
QA/QC Services	Description	Section Citation
Electric Preliminary Constructability Review	These services include review of overhead and underground transmission jobs by qualified personnel during the 30% design phase of a project	7.1
Electric Final Constructability Review	These services include review of overhead and underground transmission jobs by qualified personnel during the 90% design phase of a project, prior to issuance for construction.	7.2
Electric Post Construction Inspection	These services include post construction inspection of overhead and underground transmission jobs by qualified personnel. After construction activities of facilities are completed, this inspection assesses the in-situ, as-built condition of the facility relative to the job package, applicable standards, specifications, and codes.	7.3
General Arrangement Drawing Review	These services include review of General Arrangement Drawings for Engineered Steel Poles for compliance to applicable standards, specifications, and codes	7.4
Shop Drawing Review	These services include review of engineered steel pole shop drawings to applicable general arrangement (and other project documents), standards, specifications, and codes	7.5
Engineered Steel Pole Inspection	These services include inspection of engineered steel poles to applicable job package documents, standards, specifications, and codes	7.6

5.3. STRUCTURAL INSPECTION SERVICES

Table 3 depicts the QA/QC Structural Services that can be provided for distribution, transmission, substation, and energy storage facility types. The *Section Citation* provides the applicable section that provides a detailed description, scope of services, deliverables, and time limits.

Table 3 – Structural Support QA/QC Services

QA/QC Structural Inspector Support Services		
QA/QC Services	Description	Section Citation
Certified Weld Inspection	These services include AWS Certified Weld Inspection (CWI) diligence by certified individuals.	8.1
Concrete Inspection	These services include concrete inspection diligence by qualified individuals for concrete placement only and post-installed anchors. This does not cover laboratory work.	8.1
Coating Inspection	These services include substrate preparation, coating mixing, application, and compliance with thickness, adhesion.	8.1
General Construction Inspection	These services include general construction inspection (e.g., grading, clearances, spacing, placement, etc.) diligence by qualified individuals. This does not cover laboratory work.	8.1
ICC (International Code Council) High Strength Bolting Inspection	These services include special structural inspection (e.g., slip-critical connections, bolting, and other) diligence by qualified individuals	8.1
Masonry Inspection	These services include ICC Masonry Inspector to verify grout, block, mortar, post installed anchors and placement of Structural Masonry. This does not cover laboratory work.	8.1
Rebar Inspection	These services include reinforcing bar inspector diligence by qualified individuals	8.1
Roof Inspection	These services include roof inspection diligence by qualified individuals	8.1
Quality Assurance Technical Coordination	These quality assurance services support pre-construction, in-construction, and post-construction efforts predominantly for EPC projects	8.2

5.4. OTHER SUPPORT SERVICES

Table 4 depicts other miscellaneous QA/QC services provided for the varying facility types and efforts. The *Section Citation* provides the applicable section that provides detailed description, scope of services, deliverables, and timeframes.

Table 4 – Other QA/QC Support Services

QA/QC Miscellaneous Services		
QA/QC Services	Description	Section Citation
Manufacturer and Fabricator (MANFAB) - QATC	These services include submittal reviews, response to RFI's and Transmittals, participation in fabrication meetings. The service also issues an NCR/QDR to fabricators that do not meet MSA Contracts. Tracking system for submittals requirement by PPM Document Index.	9.1
QA/QC Contractual Language	These services include working with Supply Management, Engineering, Project Managers on implementing the PPM QA Exhibit and review of SDGE (San Diego Gas Electric) PQV list, Union Requirements, Key Personal and scoring each phase listed in an RFP (Request For Proposal).	9.2
Vendor Audit Services	These services include qualification of suppliers and service contractors. The requests are per project or at the request of a Team lead and with Management Approval.	9.3
Release for Energization Inspection / NEC Inspection	These services feature low voltage (< 750v) inspections behind metered services	9.4
Material Inspections	These services include inspection of new or existing equipment/materials by qualified personnel.	9.5

6. QA/QC ELECTRICAL & GAS DISTRIBUTION SERVICES

6.1. PRELIMINARY CONSTRUCTABILITY REVIEW

These services include review of overhead and underground distribution jobs by qualified personnel during the 30% design phase of a project. Typically, this services features field (i.e., job) walk support.

6.1.1. **Resources**

These preliminary constructability reviews are performed by qualified individuals, typically QEWs, which specialize in this facility type (e.g., overhead, underground distribution).

6.1.2. **Deliverables to QA/QC**

Each business unit supported by QA/QC may provide slightly different deliverables, but the typical deliverables for this service comprise the following.

6.1.2.1. Overhead & Underground Electric Jobs

- Project and billing information
- Field visit meeting notice sent to the QA/QC distribution list
- Any prudent information and documentation

6.1.3. **Deliverables from QA/QC**

This service is field walk support. No deliverables are provided by QA/QC for this service.

6.1.4. **Timeframes**

This service features field walk support by qualified personnel. Typically, notification of field walk occurs at least five business days before the event occurs.

6.1.5. **Workflow**

The workflow for this service is depicted in Appendix A - QAQC General Service Request Workflow.

6.2. ELECTRIC FINAL CONSTRUCTABILITY REVIEW

These services include review of overhead and underground distribution jobs by qualified personnel during the 90% design phase of a project, prior to issuance for construction.

6.2.1. **Resources**

These final constructability reviews are performed by qualified individuals, typically QEWs, which specialize in this facility type (e.g. electric overhead / underground distribution). Technical guidelines relating to the scope of these services are located at QA / QC SharePoint - Reference Guides.

6.2.2. **Deliverables to QA/QC**

Each business unit supported by QA/QC may provide slightly different deliverables, but the typical deliverables for this service comprise the following.

6.2.2.1. Overhead Electric Jobs (Distribution)

- Overhead/Underground Construction Sketches (11x17)
- Overhead/Underground CPD Design by Location (DBL) with exploded (i.e. expanded) MUs and all applicable construction notes – Design review detail copy
- Line angle information and/or pole load calculation (O-Calc or PLS-CADD pdf versions)
- Pin Spacing detail
- Fielding photos
- Approved Fusing Requests (as applicable)
- SCADA form and/or associated SCADA job packages (as applicable)
- System Operating Map (SOM) or Asset Map (as applicable)
- Any designs that deviate from published standards and/or design manuals must include a copy of their formal approved deviations (see OH STD 105)

6.2.2.2. Underground Electric Jobs (Distribution)

- Overhead/Underground Construction Sketches (11x17)
- Overhead/Underground DPSS or CPD Design by Location (DBL) with expanded MUs – Design review detail copy
- Fielding photos
- Approved Fusing Requests (as applicable)
- SCADA form and/or associated SCADA job packages (as applicable)

- System Operating Map (SOM) or Asset Map (as applicable)
- One-line diagram (as applicable)
- Pull, volt drop, and flicker calculations
- Service and meter information (as applicable)
- Work Order Request form (as applicable)
- Any designs that deviate from published standards and/or design manuals must include a copy of their formal approved deviations (see OH STD 105)

6.2.3. **Deliverables from QA/QC**

Each business unit supported by QA/QC may be provided slightly different deliverables, but the typical deliverables for this service comprise the following.

6.2.3.1. Overhead & Underground Electric Jobs (Distribution)

- Marked-up documents in PDF format, uploaded to the applicable file repository
- Key Performance Indicators (KPIs) of findings, trends, and performance by submitters on a periodic basis

6.2.4. **Timeframes**

Facility Type	Number of Locations	Review Time (Business Days)
Overhead	1 – 3	5
Overhead	4 – 20	10
Overhead	> 20	15
Underground	1 – 9	5
Underground	10 – 50	10
Underground	> 50	15

6.2.5. **Workflow**

The workflow for this service is depicted in Appendix A - QAQC General Service Request Workflow.

6.3. GAS FINAL CONSTRUCTABILITY REVIEW

These services include review of gas distribution jobs by qualified personnel during the 90% design phase of a project, prior to issuance for construction.

6.3.1. Resources

These final constructability reviews are performed by qualified individuals, who specialize in this facility type (e.g., gas distribution). Technical guidelines relating to the scope of these services are located at QA / QC SharePoint - Reference Guides.

6.3.2. Deliverables to QA/QC

Each business unit supported by QA/QC may provide slightly different deliverables, but the typical deliverables for this service comprise the following.

6.3.2.1. Gas Jobs (Distribution)

- Construction Sketches (11x17)
- Gas CPD Design by Location (DBL) with expanded MUs – Design review detail copy
- Gas Facility Map (as applicable)
- Approved Gas Load Study – Gas Engineer signed and dated
- Any designs that deviate from published standards and/or design manuals must include a copy of their formal approved deviations (see Gas Standard 182.0004 and Exception form SCG)

6.3.3. Deliverables from QA/QC

Each business unit supported by QA/QC may be provided slightly different deliverables, but the typical deliverables for this service comprise the following.

6.3.3.1. Gas Jobs

- Marked-up documents in PDF format, uploaded to the applicable file repository

6.3.4. Timeframes

Facility Type	Number of Locations	Review Time (Business Days)
Gas	1 – 9	5
Gas	10 – 50	10
Gas	> 50	15

6.3.5. Workflow

The workflow is depicted in Appendix A - QAQC General Service Request Workflow.

6.4. ELECTRIC POST-CONSTRUCTION INSPECTION

These services include post construction inspection of overhead and underground distribution jobs by qualified personnel. After construction activities of facilities are completed, this inspection assesses the in-situ, as-built condition of the facility relative to the job package, applicable standards, specifications, and codes.

6.4.1. **Resources**

Post construction inspections are performed by qualified individuals, typically QEWs which specialize in this facility type (e.g., electric overhead / underground distribution).

6.4.2. **Deliverables to QA/QC**

Each business unit supported by QA/QC may provide slightly different deliverables, but the typical deliverables for this service comprise the following.

6.4.2.1. Overhead Electric Jobs

- Completed red-lined preliminary as-built that is reviewed by FCA / GF prior to being submitted to QA/QC
    - Overhead/Underground Construction Plans (11x17)
    - Overhead/Underground CPD DBL Sketch Change Orders (SCO), Field Change Orders (FCOs) answered Requests for Information (RFIs), and any approved deviations that took place during construction
    - Approved Fusing Requests (as applicable)
    - SCADA form and/or associated SCADA job packages (as applicable)
    - Any designs that deviate from published standards and/or design manuals must include a copy of their formal approved deviations (see STD 105)
- Contractor’s QA/QC report (as applicable)
    - Inspection report
    - Fielding photos
- Joint Utility Forms (JUCFs) that were sent in by responsible party for all poles requiring Communication Infrastructure Provider (CIP) transfers (as applicable)

6.4.2.2. Underground Electric Jobs

- Completed red-lined preliminary as-built that is reviewed by FCA / GF prior to being submitted to QA/QC
- Overhead/Underground Construction Plans (11x17)
- Overhead/Underground CPD DBL, Sketch Change Orders (SCO), Field Change Orders (FCOs) answered Requests for Information (RFIs), and any approved deviations that took place during construction

- Approved Fusing Requests (as applicable)
- SCADA form and/or associated SCADA job packages (as applicable)
- Any designs that deviate from published standards and/or design manuals must include a copy of their formal approved deviations (see STD 105)
- Contractor's QA/QC report (as applicable)
    - Inspection report
    - Fielding photos

6.4.3. **Deliverables from QA/QC**

Each business unit supported by QA/QC may be provided slightly different deliverables, but the typical deliverables for this service comprise the following.

6.4.3.1. Overhead & Underground Electric Jobs

- Post Construction Inspection Punchlist
- Photo(s), explanation, and/or citation of applicable reference regarding observations
- Key Performance Indicators (KPIs) of findings, trends, and performance by submitters on a periodic basis

6.4.4. **Timeframes**

Facility Type	Number of Locations	Review Time (Business Days)
Overhead	All	30
Underground	All	30

6.4.5. **Workflow**

The workflow for this service is depicted in Appendix A - QAQC General Service Request Workflow.

6.5. HELICOPTER INCIDENTAL LANDING ZONE ASSESSMENT

These services include review of overhead distribution jobs by qualified personnel during the 30% design phase of a project and provides insight into feasibility of temporary helicopter landing zones, temporary construction staging zones, and laydown yards.

6.5.1. **Resources**

Identification of temporary incidental landing zones are performed by qualified individuals, typically QEWs, which specialize in this facility type.

6.5.2. **Deliverables to QA/QC**

Each business unit supported by QA/QC may provide slightly different deliverables, but the typical deliverables for this service comprise the following.

- Project and billing information
- Field visit meeting notice sent to the QA/QC distribution list
- Any prudent information and documentation

6.5.3. **Deliverables from QA/QC**

Each business unit supported by QA/QC may be provided slightly different deliverables, but the typical deliverables for this service comprise the following.

- Completed ILZ Form (see Appendix B - Temporary ILZ Checklist), uploaded to applicable file repository

6.5.4. **Timeframes**

Facility Type	Number of Locations	Review Time (Business Days)
Overhead	< 15	10

6.5.5. **Workflow**

The workflow for this service is depicted in Appendix A - QAQC General Service Request Workflow.

6.6. ELECTRIC AVIAN SAFETY COMPLIANCE REPORTING

These services include determination and reporting of avian safety compliance of overhead distribution jobs after completion of construction by qualified personnel.

6.6.1. **Resources**

Avian safety compliance assessments are performed by qualified individuals, typically QEWs, which specialize in this facility type (i.e., overhead distribution).

6.6.2. **Deliverables to QA/QC**

This service is inherently completed within the post-construction diligence for each facility that is assessed.

6.6.3. **Deliverables from QA/QC**

Upon completion of the avian safety compliance assessment, the following data are provided for each facility assessed

- Facility ID
- State of Avian Safety Compliance
- Avian Protection Measures Used
    - Avian Covers (e.g., Conductor, bushing, cutout);
    - Covered Conductors;
    - Insulated Jumpers; and/or
    - Sufficient Spacing
- Program Performing Work
- Imagery of Facility

6.6.4. **Timeframes**

Analysis results are available to applicable stakeholders through QAQC software, which is used to access to data, at their convenience.

7. QA/QC ELECTRICAL TRANSMISSION SERVICES

7.1. PRELIMINARY CONSTRUCTABILITY REVIEW

These services include review of overhead transmission and distribution underbuilt jobs by qualified personnel during the 30% and/or 60% design phase of a project. Typically, this service features field walk support.

7.1.1. **Resources**

These preliminary constructability reviews are performed by qualified individuals, typically QEWs, which specialize in the facility type (e.g., overhead transmission), based on the scope of work of the project.

7.1.2. **Deliverables to QA/QC**

Each business unit supported by QA/QC may provide slightly different deliverables, but the typical deliverables for this service comprise the following.

7.1.2.1. Overhead Electric Jobs

- Project and billing information
- Field visit meeting notice sent to the QA/QC distribution list
- Any prudent information and documentation

7.1.3. **Deliverables from QA/QC**

This service is field walk support. No deliverables are provided by QA/QC for this service.

7.1.4. **Timeframes**

This service is job walk support. No established timeframes are provided by QA/QC in this service.

7.1.5. **Workflow**

The workflow for this service is depicted in Appendix A - QAQC General Service Request Workflow.

7.2. FINAL CONSTRUCTABILITY REVIEW

These services include review of overhead transmission jobs by qualified personnel during the 90% design phase of a project, prior to issuance for construction.

7.2.1. **Resources**

These final constructability reviews are performed by qualified individuals, typically QEWs, which specialize in the facility type (e.g., overhead transmission), based on the scope of work of the project.

7.2.2. **Deliverables to QA/QC**

Each business unit supported by QA/QC may provide slightly different deliverables to QA/QC to promote a complete, thorough review; however, in general the deliverable comprises the following.

7.2.2.1. Overhead Electric Jobs

- Cover page
- Job Package Checklist with accurate checkmarks defining documents included in the job package
- Environmental, ALM, permits, and releases shall be included in the complete job package
    - Note, if any permits, releases, or other supporting documentation (namely, traffic control, ground disturbance, and other potentially long lead time permits) are in process and not available for review, the omission shall be noted in the submittal to QA/QC, for clarity and completeness
- Supplemental specifications / field memos
- List of drawings and standards
- Alignment map, featuring:
    - Vertical (profile) view
        - Note, this documentation could be omitted if it is defined elsewhere; for example, in pole data sheets, PLS-CADD plan and profile, and/or framing diagrams
        - Critical information that needs to be readily apparent is the vertical separation between differing voltage classes
    - Horizontal (plan) view
- Foundation schedule, orientation and detail drawings
- Structure data sheet
- Conductor data sheet
- Staking table
- Stringing charts
- Structure loading summary reports

- Framing drawings
- Structure vendor drawings
- Phasing diagram (as needed)
- Damper schedule drawings
- Bill of material
- Other reference drawings
- Applicable maps and “preliminary” tie line maps
- Plan and Profile
- Fielding photos of subject and adjacent structures
- All overhead or underground distribution job packages (if applicable) shall be provided within the submittal to QA/QC
- For other projects, if overhead and underground distribution work is included in the scope of the transmission job, it must reference the work order numbers of the complementary distribution jobs
- All overhead transmission construction packages are to follow TG-005 guideline

7.2.3. **Deliverables from QA/QC**

Each business unit supported by QA/QC may be provided slightly different deliverables, but the typical deliverables for this service comprise the following.

7.2.3.1. Overhead & Underground Electric Jobs (Distribution)

- Marked-up documents in PDF format, uploaded to the applicable file repository
- Key Performance Indicators (KPIs) of findings, trends, and performance by submitters on a periodic basis

7.2.4. **Timeframes**

Facility Type	Number of Locations	Review Time (Business Days)
Overhead	1 – 3	5
Overhead	4 – 20	10
Overhead	21 - 50	15
Overhead	51 – 100	20
Overhead	> 100	-[1]

7.2.5. **Workflow**

The workflow for this service is depicted in Appendix A - QAQC General Service Request Workflow.

[1] For jobs greater than 100 locations, additional discussion occurs to determine review duration

7.3. POST-CONSTRUCTION INSPECTION

These services include post construction inspection of overhead transmission jobs by qualified personnel. After construction activities of facilities are completed, this inspection assesses the in-situ, as-built condition of the facility relative to the job package, applicable standards, specifications, and codes.

7.3.1. **Resources**

Post construction inspections are performed by qualified individuals, typically QEWs which specialize in the facility type (e.g., overhead transmission), based on the scope of work of the project.

7.3.2. **Deliverables to QA/QC**

Each business unit supported by QA/QC may provide slightly different deliverables to QA/QC to promote a complete, thorough review; however, in general the deliverable comprises the following.

7.3.2.1. Overhead Electric Jobs

- Completed red-lined preliminary as-built that is reviewed by FCA / GF prior to being submitted to QA/QC
    - Overhead/Underground Construction Plans (11x17)
    - Overhead/Underground CPD DBL, Sketch Change Orders (SCO), Field Change Orders (FCOs) answered Requests for Information (RFIs), and any approved deviations that took place during construction
    - Approved Fusing Requests (as applicable)
    - SCADA form and/or associated SCADA job packages (as applicable)
    - Any designs that deviate from published standards and/or design manuals must include a copy of their formal approved deviations (see STD 105)
- Contractor's QA/QC report (as applicable)
    - Inspection report
    - Fielding photos
- Joint Utility Forms (JUFs) that were sent in by responsible party for all poles requiring Communication Infrastructure Provider (CIP) transfers (as applicable)

7.3.3. **Deliverables from QA/QC**

Each business unit supported by QA/QC may be provided slightly different deliverables, but the typical deliverables for this service comprise the following.

7.3.3.1. Overhead Electric Jobs

- Post Construction Inspection Punchlist

- Photo(s), explanation, and/or citation of applicable reference regarding observations
- Key Performance Indicators (KPIs) of findings, trends, and performance by submitters on a periodic basis

7.3.4. **Timeframes**

Facility Type	Number of Locations	Review Time (Business Days)
Overhead	All	35[2]

7.3.5. **Workflow**

The workflow for this service is depicted in Appendix A - QAQC General Service Request Workflow.

[2] This duration does not include time and efforts to engage additional stakeholders for proposed remedying of observations identified

7.4. GENERAL ARRANGEMENT DRAWING REVIEW

These services include review of general arrangement drawings. The review is initiated after the 60% transmission design is completed, but before the 90% design is finalized. As such, typically, the QA/QC service request is submitted after Transmission Engineering completes its technical review of the general arrangements. The scope of the review entails compliance checks to applicable standards, specifications, and codes.

7.4.1. **Resources**

These general arrangement drawing reviews are performed by qualified individuals that specialize in this scope of work.

7.4.2. **Deliverables to QA/QC**

Each business unit supported by QA/QC may provide slightly different deliverables to QA/QC to promote a complete, thorough review; however, in general the deliverables comprise the following.

- 60% design alignment map
- Structure data sheet
- Plan and profile map
- Fielding photos, if available
- Any designs that deviate from published standards and/or design manuals must include a copy of their formal approved deviations

7.4.3. **Deliverables from QA/QC**

Each business unit supported by QA/QC may be provided slightly different deliverables, but the typical deliverables for this service comprise the following.

- Marked-up documents in PDF format, uploaded to the applicable file repository

7.4.4. **Timeframes**

Number of Poles	Review Time (Business Days)
1 – 3	5
4 – 20	10
> 20	15

7.4.5. **Workflow**

The workflow for this service is depicted in Appendix A - QAQC General Service Request Workflow.

7.5. ENGINEERED STEEL POLE INSPECTION

These services include inspection of engineered steel poles, typically in support of transmission facilities, by qualified personnel. This inspection is performed prior to installation of the pole in a laydown yard. This inspection assesses the compliance of the facility to project documents and applicable standards, specifications, and codes.

7.5.1. **Resources**

These engineered steel pole inspections are performed by qualified individuals specializing in this scope of work.

7.5.2. **Deliverables to QA/QC**

Each business unit supported by QA/QC may provide slightly different deliverables to QA/QC to promote a complete, thorough review; however, in general the deliverable comprises the following.

- Final signed GA drawings for all required structures
- Final manufacturer shop drawings used for fabrication
- CWI inspection report from original inspection at the manufacturer's facility, for reference during post-delivery inspection
- For post-delivery steel pole assessment, steel pole sections shall be properly staged and ready for assessment for the review
    - If pole orders are staged in separate sections instead of whole pole deliveries, the steel pole assessment review times may vary

7.5.3. **Deliverables from QA/QC**

Each business unit supported by QA/QC may be provided slightly different deliverables, but the typical deliverables for this service comprise the following.

- Marked-up documents in PDF format, uploaded to the applicable file repository

7.5.4. **Timeframes**

Number of Poles	Review Time (Business Days)
1 – 3	3
4 – 20	15
> 20	21

7.5.5. **Workflow**

The workflow for this service is depicted in Appendix A - QAQC General Service Request Workflow.

7.6. SHOP DRAWING REVIEW

These services include review of engineered steel pole shop drawings prior to fabrication. The review is performed in parallel with the engineering team review. The scope of the review entails compliance checks to applicable standards, specifications, and codes.

7.6.1. **Resources**

These shop drawing reviews are performed by qualified individuals that specialize in this scope of work.

7.6.2. **Deliverables to QA/QC**

Each business unit supported by QA/QC may provide slightly different deliverables to QA/QC to promote a complete, thorough review; however, in general the deliverable comprises the following.

- Final signed GA drawings for all associated structures within the shop drawings
- Manufacturer shop drawing set
- Any clarifications/deviations issued that may affect standard climbing or attachment locations.

7.6.3. **Deliverables from QA/QC**

Each business unit supported by QA/QC may be provided slightly different deliverables, but the typical deliverables for this service comprise the following.

- Marked-up documents in PDF format, uploaded to the applicable file repository

7.6.4. **Timeframes**

Number of Poles	Review Time (Business Days)
1 – 3	3
4 – 20	10
> 20	-[3]

7.6.5. **Workflow**

The workflow for this service is depicted in Appendix A - QAQC General Service Request Workflow.

[3] For jobs greater than 20 poles, additional discussion occurs to determine review duration

8. QA/QC STRUCTURAL SUPPORT SERVICES

The structural support services comprise specific submittal review, inspection of, and overall quality assurance and control services related to construction materials used for distribution, transmission, substation, energy storage, and other projects within the portfolio of projects.

8.1. CONSTRUCTION QUALITY ASSURANCE INSPECTIONS

The services defined within this section feature onsite material inspection of various construction materials by qualified individuals in support of distribution, transmission, substation, energy storage facilities and other projects within the portfolio of projects. The construction inspections include, but are not limited to:

- Certified weld submittal review and inspection
- Concrete submittal review and inspection
- High strength bolting submittal review and inspection
- Masonry submittal review and inspection
- Micropile submittal and inspection
- Rebar submittal review and inspection
- Roof submittal review and inspection
- Soils submittal review and general inspections

8.1.1. Resources

Each inspector performing these services possesses the applicable certification to perform the submittal review and inspection specific to the material, as defined in Table 5.

Table 5 – Inspection Type and Applicable Certification

Material	Applicable Certification
Certified Welds	American Weld Society, Certified Weld Inspector
Concrete	ICC, Reinforced Concrete Inspector
High Strength Bolting	ICC, High Strength Bolting Inspector
Masonry	ICC, Masonry and or DSA Masonry
Micropile	No certification required, but performed by qualified resource
Rebar	ICC, Reinforced Concrete Inspector or Masonry Inspector
Roof	4 years of roofing experience and/or IBEC Registered Roof Consultant (RRC) Certification
Soils	ICC EC Soils Inspector

8.1.2. **Deliverables to QA/QC**

The field inspector will have access to the records retention program and review any applicable submittals in support of the inspection. Engineering will provide the latest copy of the IFC drawings.

8.1.3. **Deliverables from QA/QC**

The Structural Inspectors will provide a QA and/or QC report for each inspection and/or quality oversight activity.

8.1.4. **Timeframes**

The inspector uploads a QA/QC report within 3 business days to the project site to the record retention system.

8.1.5. **Workflow for Observations Identified**

1. Inspector or FCA will identify any deviations from applicable IFC drawings, specifications, standards, and codes.
2. If the deviation is found by the inspector, then the inspector will inform the FCA immediately via in-person conversation, email, and/or phone call. The FCA can stop work, if deemed necessary. After the FCA is informed, the inspector will inform the Quality Assurance Technical Coordinator (QATC) or Engineer for the project to make aware the deviation.
3. The inspector will also provide all deviations in their daily field report, outline any deviations, and indicate who was informed of the deviation. If the responsible representative took no exception to the deviation, the inspector would include note within the daily report and the name of responsible representative who took no exception.
4. Engineering and QA/QC will discuss and draft an NCR for any code, specification, or IFC drawing deviation, as applicable.
5. The draft NCR will be communicated to responsible representative(s) for review and comment. The responsible representative(s) shall include the applicable Project Manager, QATC, Engineering, and FCA.
6. Upon achieving consensus on the content of the NCR, NCR is submitted to the approved project file repository for resolution by appropriate party.

8.2. STRUCTURAL QUALITY ASSURANCE TECHNICAL COORDINATOR

The services performed by Quality Assurance Technical Coordinators (QATCs) include project-specific related verification and validation of quality control measures implemented for applicable projects (namely, large battery storage, substation, and other projects, typically featuring a both EPC and non-EPC contract types).

The scope of these services include, but are not limited to:

- Material submittal reviews,
- Responses to RFIs,
- Support of project meetings,
- Coordination with the project team on QC Inspections and scheduling,
- Review third-party and/or lab reports, welding documents, QC plans, fabrication drawing, etc.,
- Verifying safety and pre-qualification requirements of vendors,
- Manage and tracks materials,
- Provide engineering support, and
- Review of various construction materials by qualified individuals.

8.2.1. **Resources**

Each QATC possesses the necessary skills and certifications to support specific facility and inspection type.

8.2.2. **Deliverables to Projects**

The QATC provides various deliverables in support of QA/QC activities. Deliverables vary based on facility (e.g., battery energy storage, substation, transmission, and/or distribution) and contractual types (e.g., EPC, BOT, bid build) for each project. Each project supported by QATCs may provide different deliverables, but the typical deliverables for this service comprise the following.

The deliverables to projects include, but are not limited to:

- Review of fabrication drawings
- Review of material submittals
- Review of contractor/subcontractor QC Plan and CITP, including fabrication QC
- Review and verification of pre-qualified vendors and service contractors

- Maintain the project document index
- Review of third-party inspectors' certifications
- Review of third-party construction reports
- Review of third-party party laboratory reports
- Verifies use of latest IFC drawings during construction
- Provides oversight for Definable Features of Work (DFOW)
- Daily field reports
- Inspection reports
- Issue NCRs
- Maintains and tracks open item list and/or punch list to closure
- Project close-out support

8.2.3. **Timeframes**

Activity	Review Time (Business Days)
Daily Field Reports	1
Submittal and Report Review	5
QA Field Report for DFOW	3
QA Field Report for Inspections	3
Open Action Item and Punchlist Support	-[4]

8.2.4. **Workflow**

The workflow for this service is depicted in Appendix C – QATC Workflow.

[4] Ongoing support after project meetings

9. OTHER SUPPORT SERVICES

9.1. MANUFACTURER AND FABRICATOR (MANFAB)

The services comprising the MANFAB efforts feature QA and QC of manufacturers and fabricators (MANFAB) providing products and/or equipment for projects. These services feature:

- Material submittal review,
- Third-party inspection reports,
- Review of laboratory test results,
- Welding submittal,
- Fabrication drawing,
- RFIs, and
- Issue NCRs (Non-Compliance Reports)

Each fabricator is tracked individually, and all their submittals, transmittals, RFI, and other supporting documents are tracked in the approved file repository. The responsible QATC uses the document indexes and other methods to track all submittals and reports received from fabricators.

Select fabricators submitting QC documentation through MANFAB include:

- Engineered steel pole submittals
- Direct-Bury steel pole submittals
- Underground concrete facility submittals
- Critical Asset Security Team (CAST) fence submittals
- Other components installed into utility facilities

9.1.1. **Resources**

Each QATC supporting MANFAB possesses the necessary skills and certifications to support specific facility type, submittal review, and inspection type.

9.1.2. **Deliverables to QA/QC**

- Fabrication drawings
- RFI correspondence
- Material submittals

- Fabricator QC Plan
- Third-party inspectors' certifications
- Third-party inspection reports
- Third-party laboratory reports
- QC reports from fabricators

9.1.3. **Deliverables from QA/QC**

- Document index and open item list
- Fabrication inspection reports
- NCR/QDR for non-conformance observations

9.1.4. **Workflow**

The workflow for this service is depicted in Appendix E – MANFAB Workflow.

9.2. QA/QC CONTRACTUAL LANGUAGE REPOSITORY

The content stored in the PPM QA/QC Contractual Language and Pre-Qualified Suppliers & Service Contractors site hosts information and contractual verbiage related to quality assurance and control, typically used in construction contracts and exhibits. Select approved personnel within Supply Management, QA/QC, and few others possess access to this repository. This section discusses scope, intent, and other details related to the QA/QC contractual language repository and SharePoint standards typically used for EPC and non-EPC construction projects.

SharePoint Site: Contractual Language and Pre-Qualified Suppliers & Service Contractors - Contract Verbiage - All Documents (sharepoint.com)

9.2.1. **Resources**

The PPM QA/QC team manages the content and SharePoint site with qualified personnel familiar with supply management and contract writing process.

9.2.2. **Deliverables from QA/QC**

PPM QA/QC and Supply Management collaboratively craft and maintain language used for QA/QC exhibits and other contractual verbiage, including the Pre-Qualified Vendor (PQV) list (see Section 9.3), which is transmitted to Supply Management stakeholders, upon request.

9.3. VENDOR AND SERVICE CONTRACTOR AUDIT SERVICES

These services include auditing of vendors and service contractors as the basis for adding and removing pre-qualified vendors to the Pre-Qualified Vendor (PQV) list, as discussed in Section 9.2. The scope of services and goods contained within the PQV feature core goods and services related to the utility construction industry.

9.3.1. **Resources**

Audits are typically initiated, approved, scheduled, performed, and closed by qualified QA/QC personnel. Additional key resources include subject matter experts from applicable fields (e.g., engineering, safety, construction, etc.), who are identified by Management to participate and assessment auditees.

9.3.2. **Deliverables to QA/QC**

The auditee (i.e., potential service contractor) shall provide the following:

- Vendor QA/QC plan with outlined definable features of work (DFOW), inspections required, blank QC Reports and a flow chart of QA/QC personnel and experience or a detailed work plan
- Owner references for similar scope of work
- List and location of project(s) currently in construction with similar scope of work
- List any deviations or written programs

9.3.3. **Deliverables from QA/QC**

- Audit report and supporting documentation
- Audit results meeting with Auditee and Lead Auditor(s)

9.3.4. **Timeframes**

Activity	Time After Audit (Business Days)
Audit Report and Supporting Documentation	10
Audit Results Meeting	10

9.3.5. **Workflow**

The workflow for this service is depicted in Appendix D - PQV Workflow.

9.4. RELEASE FOR ENERIGAZTION / NEC INSPECTION

These services include de-energized inspection of new and existing, low voltage (i.e., less than 750v), facilities. Typically, these services are requested when the Authority Having Jurisdiction (AHJ) deputizes alternative representatives to perform inspection due diligence to supplement AHJ QC efforts. In other scenarios, supplementary National Electric Code (NEC) or California Electric Code (CEC) diligence is performed at the request of AHJs and/or other stakeholders.

9.4.1. **Resources**

Each Inspector possesses the necessary skills and certifications to support specific facility and inspection type. Typically, this entails the International Code Council (ICC) – Commercial Electrical Inspection certification.

9.4.2. **Deliverables to QA/QC**

Each business unit supported by QA/QC may provide slightly different deliverables, but the typical deliverables for this service comprise the following.

- Applicable job information
- Type of inspection request
- Inspector show-up date and time

9.4.3. **Deliverables from QA/QC**

Each business unit supported by QA/QC may be provided slightly different deliverables, but the typical deliverables for this service comprise the following.

- Inspection report and findings

9.4.4. **Timeframes**

Activity	Review Time (Business Days)
Release for Energization	3
Other NEC Inspections	3

9.4.5. **Workflow**

The workflow for this service is depicted in Appendix A - QAQC General Service Request Workflow.

9.5. MATERIAL INSPECTIONS

These services include de-energized inspection of new and existing materials and equipment.

9.5.1. **Resources**

These material inspections are performed by qualified individuals, typically QEWs, which specialize in the facility type.

9.5.2. **Deliverables to QA/QC**

9.5.2.1. Packing List / Bill of Lading (including the following information)

- Manufacturer
- Location of material/equipment (applicable district)
- Number of items included in inspection request
- Purchase Order (for reference and documentation purposes)
- Stock Numbers
- Company (CO) Numbers (as applicable)

9.5.2.2. Manufacturer test documentation

- Upon request, for reference and documentation purposes

9.5.3. **Deliverables from QA/QC**

Each material inspection supported by QA/QC may provide slightly different deliverables, but the typical deliverables for this service comprise the following.

- Pass/Fail identification on material
- Pass/Fail designation on PPM QA/QC SharePoint service request
- Inspection Report(s)

9.5.4. **Timeframes**

Facility Type	Review Time for Inspection (Business Days)	Review Time for Results (Business Days)
Overhead	10	20
Underground	10	20

9.5.5. **Workflow**

The workflow for this service is depicted in Appendix A - QAQC General Service Request Workflow.

10.APPENDIXES

10.1. APPENDIX A – QAQC GENERAL SERVICE REQUEST WORKFLOW.PDF

10.2. APPENDIX B – TEMPORARY ILZ CHECKLIST.PDF

10.3. APPENDIX C – STRUCTURAL WORKFLOW PPM.PDF

10.4. APPENDIX D – PQV WORKFLOW.PDF

10.5. APPENDIX E – MANFAB WORKFLOW.PDF

11.REVISION HISTORY

Effective Date	Description of Change	Change Type	Revision
12/31/2023	Initial publication of this document	New	0

12.DOCUMENT OWNERSHIP