

GENERAL SERVICES CONTRACT
Protective Relay and Circuit Breaker Testing
Specification No. S-2024-636BD

This GENERAL SERVICES CONTRACT (hereinafter referred to as "Contract"), is made and entered into as of the date fully executed below, by and between Orange County Sanitation District (hereinafter referred to as "OC San") and _____ (hereinafter referred to as "Contractor"), and collectively referred to herein as the "Parties."

RECITALS

WHEREAS, OC San desires to retain the services of Contractor for testing and calibration of protective devices (relays and circuit breakers) ("Services") as described in Exhibit "A" attached hereto and incorporated herein by this reference; and

WHEREAS, Contractor is qualified to perform the Services by virtue of experience, training, education, and expertise; and

WHEREAS, OC San desires to engage Contractor to provide the Services; and

WHEREAS, OC San selected Contractor to provide the Services in accordance with OC San's current Purchasing Ordinance; and

WHEREAS, on _____, OC San's Board of Directors, by minute order, authorized execution of this Contract.

NOW, THEREFORE, in consideration of the above recitals and the mutual promises and benefits specified below, the Parties agree as follows:

1. General.

1.1 This Contract and all exhibits hereto are made by OC San and the Contractor.

1.2 The following exhibits, in order of precedence, are incorporated by reference and made part of this Contract.

Exhibit "A" – Scope of Work

Exhibit "B" – Bid

Exhibit "C" – Determined Insurance Requirement Form

Exhibit "D" – Contractor Safety Standards

Exhibit "E" – Human Resources Policies

1.3 In the event of any conflict or inconsistency between the provisions of this Contract and any of the provisions of the exhibits hereto, the provisions in the Contract shall control and thereafter the provisions in the document highest in precedence shall be controlling.

1.4 Except as expressly provided otherwise, OC San accepts no liability for any expenses, losses, or actions incurred or undertaken by Contractor as a result of work performed in anticipation of acquisition of the Services by OC San.

1.5 Work Hours: Shall be as specified in Exhibit "A."

- 1.6 Days: Shall mean calendar days, unless otherwise noted.
- 1.7 OC San holidays (non-working days) are as follows: New Year's Day, Martin Luther King, Jr. Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, Day after Thanksgiving, Christmas Eve, and Christmas Day.
- 1.8 Work: Shall mean all work, labor, and materials necessary to provide the Services.
- 1.9 The provisions of this Contract may be amended or waived only by an amendment executed by authorized representatives of both Parties.
- 1.10 The various headings in this Contract are inserted for convenience only and shall not affect the meaning or interpretation of this Contract or any paragraph or provision hereof.

2. Scope of Work.

- 2.1 Contractor shall perform the Services identified in Exhibit "A" in accordance with generally accepted industry and professional standards.
- 2.2 Modifications to Scope of Work. OC San shall have the right to modify the Scope of Work at any time. All modifications must be made by an amendment signed by both Parties.
- 2.3 Familiarity with Work. By executing this Contract, Contractor warrants that: (a) it has investigated the work to be performed; (b) it understands the facilities, difficulties, and restrictions of the work under this Contract; and (c) it has examined the site of the work and is aware of all conditions at the site. Should Contractor discover any latent or unknown condition materially differing from those inherent in the work or as represented by OC San, it shall immediately inform OC San of this and shall not proceed, except at Contractor's risk, until written instructions are received from OC San.
- 2.4 Performance. Time is of the essence in the performance of the provisions hereof.

3. Contract Term.

- 3.1 The term of this Contract shall be for three (3) years commencing on the effective date of the Notice to Proceed.
- 3.2 Extensions. The term of this Contract may be extended only by an amendment signed by both Parties.

4. Compensation.

- 4.1 As compensation for the Services provided under this Contract, OC San shall pay Contractor a total amount not to exceed _____ Dollars (\$_____.00) as specified in Exhibit B attached hereto.
- 4.2 Contractor shall provide OC San with all required premiums and/or overtime work at no charge beyond the amount specified above.

5. Payments and Invoicing.

- 5.1 OC San shall pay itemized invoices for work completed in accordance with Exhibit "A" thirty (30) days from receipt of the invoice and after approval by OC San's Contract Manager or designee. OC San shall be the determining party, in its sole discretion, as to whether the Services have been satisfactorily completed.

- 5.2 Contractor shall submit its invoices to OC San Accounts Payable by electronic mail to APStaff@OCSan.gov. In the subject line include "INVOICE" and the Purchase Order Number.

6. California Department of Industrial Relations Registration and Record of Wages.

- 6.1 To the extent Contractor's employees and/or its subcontractors perform work related to this Contract for which Prevailing Wage Determinations have been issued by the California Department of Industrial Relations (DIR) as more specifically defined under Labor Code section 1720 et seq., prevailing wages are required to be paid for applicable work under this Contract. It is Contractor's responsibility to interpret and implement any prevailing wage requirements and Contractor agrees to pay any penalty or civil damages resulting from a violation of the prevailing wage laws.
- 6.2 Contractor and its subcontractors shall comply with the registration requirements of Labor Code section 1725.5. Pursuant to Labor Code section 1771.4(a)(1), the work is subject to compliance monitoring and enforcement by the California Department of Industrial Relations (DIR).
- 6.3 Pursuant to Labor Code section 1773.2, a copy of the prevailing rate of per diem wages is available upon request at OC San's principal office. The prevailing rate of per diem wages may also be found at the DIR website for prevailing wage determinations at <http://www.dir.ca.gov/DLSR/PWD>.
- 6.4 Contractor and its subcontractors shall comply with the job site notices posting requirements established by the Labor Commissioner per Title 8, California Code of Regulations section 16461(e). Pursuant to Labor Code sections 1773.2 and 1771.4(a)(2), Contractor shall post a copy of the prevailing rate of per diem wages at the job site.
- 6.5 Contractor and its subcontractors shall maintain accurate payroll records and shall comply with all the provisions of Labor Code section 1776. Contractor and its subcontractors shall submit payroll records to the Labor Commissioner pursuant to Labor Code section 1771.4(a)(3). Pursuant to Labor Code section 1776, the Contractor and its subcontractors shall furnish a copy of all certified payroll records to OC San and/or the general public upon request, provided the public request is made through OC San, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement of the Department of Industrial Relations. Pursuant to Labor Code section 1776(h), penalties for non-compliance with a request for payroll records may be deducted from progress payments.
- 6.5.1 As a condition to receiving payments, Contractor agrees to present to OC San, along with any request for payment, all applicable and necessary certified payrolls and other required documents for the period covering such payment request. Pursuant to Title 8, California Code of Regulations section 16463, OC San shall withhold any portion of a payment, up to and including the entire payment amount, until certified payroll forms and any other required documents are properly submitted. In the event certified payroll forms do not comply with the requirements of Labor Code section 1776, OC San may continue to withhold sufficient funds to cover estimated wages and penalties under the Contract.

6.6 The Contractor and its subcontractors shall comply with Labor Code section 1774 and section 1775. Pursuant to Labor Code section 1775, the Contractor and any of its subcontractors shall forfeit to OC San a penalty of not more than two hundred dollars (\$200) for each calendar day, or portion thereof, for each worker paid less than the prevailing rates as determined by the DIR for the work or craft in which the worker is employed for any work.

6.6.1 In addition to the penalty and pursuant to Labor Code section 1775, the difference between the prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing wage rate shall be paid to each worker by the Contractor or its subcontractor.

6.7 Contractor and its subcontractors shall comply with Labor Code sections 1810 through 1815. Contractor and its subcontractors shall restrict working hours to eight (8) hours per day and forty (40) hours per week, except that work performed in excess of those limits shall be permitted upon compensation for all excess hours worked at not less than one and one-half (1.5) times the basic rate of pay, as provided in Labor Code section 1815. The Contractor shall forfeit, as a penalty to OC San, twenty-five dollars (\$25) per worker per calendar day during which such worker is required or permitted to work more than eight (8) hours in any one calendar day and forty (40) hours in any one calendar week in violation of Labor Code sections 1810 through 1815.

6.8 Contractor and its subcontractors shall comply with Labor Code sections 1777.5, 1777.6, and 1777.7 concerning the employment of apprentices by Contractor or any subcontractor.

6.9 Contractor shall include, at a minimum, a copy of the following provisions in any contract it enters into with any subcontractor: Labor Code sections 1771, 1771.1, 1775, 1776, 1777.5, 1810, 1813, 1815, 1860, and 1861.

6.10 Pursuant to Labor Code sections 1860 and 3700, the Contractor and its subcontractors will be required to secure the payment of compensation to employees. Pursuant to Labor Code section 1861, Contractor, by accepting this contract, certifies that:

"I am aware of the provisions of section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract."

Contractor shall ensure that all its contracts with its subcontractors provide the provision above.

7. **Damage to OC San's Property.** Any of OC San's property damaged by Contractor, any subcontractor, or by the personnel of either will be subject to repair or replacement by Contractor at no cost to OC San.

8. **Freight (F.O.B. Destination).** Contractor assumes full responsibility for all transportation, transportation scheduling, packing, handling, insurance, and other services associated with delivery of all products deemed necessary under this Contract.

9. **Audit Rights.** Contractor agrees that, during the term of this Contract and for a period of three (3) years after its expiration or termination, OC San shall have access to and the right to examine any directly pertinent books, documents, and records of Contractor relating to the invoices submitted by Contractor pursuant to this Contract.
10. **Contractor Safety Standards and Human Resources Policies.** OC San requires Contractor and its subcontractor(s) to follow and ensure their employees follow all Federal, State, and local regulations as well as the Contractor Safety Standards while working at OC San locations. If, during the course of the Contract, it is discovered that the Contractor Safety Standards do not comply with Federal, State, or local regulations, the Contractor is required to follow the most stringent regulatory requirement at no additional cost to OC San. Contractor, its subcontractors, and all of their employees shall adhere to the safety requirements in Exhibit "A," all applicable Contractor Safety Standards in Exhibit "D," and the Human Resources Policies in Exhibit "E."
11. **Insurance.** Contractor and all its subcontractors shall purchase and maintain, throughout the term of this Contract and any periods of warranty or extensions, insurance in amounts equal to the requirements set forth in the signed Exhibit "C" – Determined Insurance Requirement Form. Contractor shall not commence work under this Contract until all required insurance is obtained in a form acceptable to OC San, nor shall Contractor allow any subcontractor to commence service pursuant to a subcontract until all insurance required of the subcontractor has been obtained. Failure to obtain and maintain the required insurance coverage shall result in termination of this Contract.
12. **Indemnification and Hold Harmless Provision.** Contractor shall assume all responsibility for damages to property and/or injuries to persons, including accidental death, which may arise out of or may be caused by Contractor's Services under this Contract, or by its subcontractor(s), or by anyone directly or indirectly employed by Contractor, and whether such damage or injury shall accrue or be discovered before or after the termination of the Contract. Except as to the sole active negligence of or willful misconduct of OC San, Contractor shall indemnify, protect, defend, and hold harmless OC San, its elected and appointed officials, officers, agents, and employees from and against any and all claims, liabilities, damages, or expenses of any nature, including attorneys' fees: (a) for injury to or death of any person, or damage to property, or interference with the use of property arising out of or in connection with Contractor's performance under the Contract, and/or (b) on account of use of any copyrighted or uncopyrighted material, composition, or process; or any patented or unpatented invention, article, or appliance furnished or used under the Contract, and/or (c) on account of any goods and services provided under this Contract. This indemnification provision shall apply to any acts or omissions, willful misconduct, or negligent misconduct, whether active or passive, on the part of Contractor or anyone employed by or working under Contractor. To the maximum extent permitted by law, Contractor's duty to defend shall apply whether or not such claims, allegations, lawsuits, or proceedings have merit or are meritless; or which involve claims or allegations that any of the parties to be defended were actively, passively, or concurrently negligent; or which otherwise assert that the parties to be defended are responsible, in whole or in part, for any loss, damage, or injury. Contractor agrees to provide this defense immediately upon written notice from OC San, and with well qualified, adequately insured, and experienced legal counsel acceptable to OC San. This section shall survive the expiration or early termination of the Contract.

13. **Independent Contractor.** The relationship between the Parties hereto is that of an independent contractor and nothing herein shall be deemed to make Contractor an OC San employee. During the performance of this Contract, Contractor and its officers, employees, and agents shall act in an independent capacity and shall not act as OC San's officers, employees, or agents. Contractor and its officers, employees, and agents shall obtain no rights to any benefits which accrue to OC San's employees.
14. **Subcontracting and Assignment.** Contractor shall not delegate any duties nor assign any rights under this Contract without the prior written consent of OC San. Any such attempted delegation or assignment shall be void.
15. **Disclosure.** Contractor agrees not to disclose, to any third party, data or information generated from this Contract without the prior written consent from OC San.
16. **Non-Liability of OC San Officers and Employees.** No officer or employee of OC San shall be personally liable to Contractor, or any successor-in-interest, in the event of any default or breach by OC San, or for any amount which may become due to Contractor or to its successor, or for breach of any obligation under the terms of this Contract.
17. **Third-Party Rights.** Nothing in this Contract shall be construed to give any rights or benefits to anyone other than OC San and Contractor.
18. **Applicable Laws and Regulations.** Contractor shall comply with all applicable Federal, State, and local laws, rules, and regulations. Contractor also agrees to indemnify and hold OC San harmless from any and all damages and liabilities assessed against OC San as a result of Contractor's noncompliance therewith. Any provision required by law to be included herein shall be deemed included as a part of this Contract whether or not specifically included or referenced.
19. **Licenses, Permits, Ordinances, and Regulations.** Contractor represents and warrants to OC San that it has obtained all licenses, permits, qualifications, and approvals of whatever nature that are legally required to provide the Services. Any and all fees required by Federal, State, County, City, and/or municipal laws, codes, and/or tariffs that pertain to the work performed under this Contract will be paid by Contractor.
20. **Regulatory Requirements.** Contractor shall perform all work under this Contract in strict conformance with applicable Federal, State, and local regulatory requirements including, but not limited to, 40 CFR 122, 123, 124, 257, 258, 260, 261, and 503, Title 22, 23, and Water Codes Division 2.
21. **Environmental Compliance.** Contractor shall, at its own cost and expense, comply with all Federal, State, and local environmental laws, regulations, and policies which apply to the Contractor, its subcontractors, and the Services, including, but not limited to, all applicable Federal, State, and local air pollution control laws and regulations.
22. **Warranties.** The following warranties shall apply:
22.1 Manufacturer's standard warranty shall apply. All manufacturer warranties shall commence on the date of acceptance of the work as complete by the OC San Contract Manager or designee.

22.2 Contractor's Warranty (Guarantee): If within a one (1) year period of completion of all work specified in Exhibit "A," OC San informs Contractor that any portion of the Services provided fails to meet the standards required under this Contract, Contractor shall, within the time agreed to by OC San and Contractor, take all such actions as are necessary to correct or complete the noted deficiency(ies) at Contractor's sole expense.

23. Dispute Resolution.

23.1 In the event of a dispute as to the construction or interpretation of this Contract, or any rights or obligations hereunder, the Parties shall first attempt, in good faith, to resolve the dispute by mediation. The Parties shall mutually select a mediator to facilitate the resolution of the dispute. If the Parties are unable to agree on a mediator, the mediation shall be conducted in accordance with the Commercial Mediation Rules of the American Arbitration Agreement, through the alternate dispute resolution procedures of Judicial Arbitration through Mediation Services of Orange County ("JAMS"), or any similar organization or entity conducting an alternate dispute resolution process.

23.2 In the event the Parties are unable to timely resolve the dispute through mediation, the issues in dispute shall be submitted to arbitration pursuant to Code of Civil Procedure, Part 3, Title 9, sections 1280 et seq. For such purpose, an agreed arbitrator shall be selected, or in the absence of agreement, each party shall select an arbitrator, and those two (2) arbitrators shall select a third. Discovery may be conducted in connection with the arbitration proceeding pursuant to Code of Civil Procedure section 1283.05. The arbitrator, or three (3) arbitrators acting as a board, shall take such evidence and make such investigation as deemed appropriate and shall render a written decision on the matter in question. The arbitrator shall decide each and every dispute in accordance with the laws of the State of California. The arbitrator's decision and award shall be subject to review for errors of fact or law in the Superior Court for the County of Orange, with a right of appeal from any judgment issued therein.

24. Remedies. In addition to other remedies available in law or equity, if the Contractor fails to make delivery of the goods and Services or repudiates its obligations under this Contract, or if OC San rejects the goods or Services or revokes acceptance of the goods and Services, OC San may (a) cancel the Contract; (b) recover whatever amount of the purchase price OC San has paid, and/or (c) "cover" by purchasing, or contracting to purchase, substitute goods and Services for those due from Contractor. In the event OC San elects to "cover" as described in (c), OC San shall be entitled to recover from Contractor as damages the difference between the cost of the substitute goods and Services and the Contract price, together with any incidental or consequential damages.

25. Force Majeure. Neither party shall be liable for delays caused by accident, flood, acts of God, fire, labor trouble, war, acts of government, or any other cause beyond its control, but the affected party shall use reasonable efforts to minimize the extent of the delay. Work affected by a force majeure condition may be rescheduled by mutual consent of the Parties.

26. Termination.

26.1 OC San reserves the right to terminate this Contract for its convenience, with or without cause, in whole or in part, at any time, by written notice from OC San. Upon receipt of a termination notice, Contractor shall immediately discontinue all work under this Contract (unless the notice directs otherwise). OC San shall thereafter, within thirty (30) days, pay Contractor for work performed (cost and fee) through the date of termination. Contractor expressly waives any claim to receive anticipated profits to be earned during the

uncompleted portion of this Contract. Such notice of termination shall terminate this Contract and release OC San from any further fee, cost, or claim hereunder by Contractor other than for work performed through the date of termination.

26.2 OC San reserves the right to terminate this Contract immediately upon OC San's determination that Contractor is not complying with the Scope of Work requirements, if the level of service is inadequate, or for any other default of this Contract.

26.3 OC San may also immediately terminate this Contract for default, in whole or in part, by written notice to Contractor:

- if Contractor becomes insolvent or files a petition under the Bankruptcy Act; or
- if Contractor sells its business; or
- if Contractor breaches any of the terms of this Contract; or
- if the total amount of compensation exceeds the amount authorized under this Contract.

26.4 All OC San's property in the possession or control of Contractor shall be returned by Contractor to OC San on demand or at the expiration or early termination of this Contract, whichever occurs first.

27. **Attorney's Fees.** If any action at law or in equity or if any proceeding in the form of an Alternative Dispute Resolution (ADR) is necessary to enforce or interpret the terms of this Contract, the prevailing party shall be entitled to reasonable attorney's fees, costs, and necessary disbursements in addition to any other relief to which the prevailing party may be entitled.

28. **Waiver.** The waiver by either party of any breach or violation of, or default under, any provision of this Contract shall not be deemed a continuing waiver by such party of any other provision or of any subsequent breach or violation of this Contract or default thereunder. Any breach by Contractor to which OC San does not object shall not operate as a waiver of OC San's rights to seek remedies available to it for any subsequent breach.

29. **Severability.** If any section, subsection, or provision of this Contract; or any agreement or instrument contemplated hereby; or the application of such section, subsection, or provision is held invalid, the remainder of this Contract or instrument in the application of such section, subsection, or provision to persons or circumstances other than those to which it is held invalid, shall not be affected thereby, unless the effect of such invalidity shall be to substantially frustrate the expectations of the Parties.

30. **Survival.** The provisions of this Contract dealing with payment, warranty, indemnity, and forum for enforcement shall survive expiration or early termination of this Contract.

31. **Governing Law.** This Contract shall be governed by and interpreted under the laws of the State of California and the Parties submit to jurisdiction in the County of Orange in the event any action is brought in connection with this Contract or the performance thereof.

32. **Notices.**

32.1 All notices under this Contract must be in writing. Written notice shall be delivered by personal service, by electronic telecommunication, or sent by registered or certified mail, postage prepaid, return receipt requested, or by any other overnight delivery service

which delivers to the noticed destination and provides proof of delivery to the sender. Rejection or other refusal to accept or the inability to deliver because of changed address for which no notice was given as provided hereunder shall be deemed to be receipt of the notice, demand, or request sent. All notices shall be effective when first received at the following addresses:

OC San: Cody Harms
Buyer
Orange County Sanitation District
18480 Bandilier Circle
Fountain Valley, CA 92708
charms@ocsan.gov

Contractor: _____ [Contact Name]
_____ [Contact Title]
_____ [Company Name]
_____ [Street Address]
_____ [City, State, Zip Code]
_____ [Email Address]

32.2 Each party shall provide the other party written notice of any change in address as soon as practicable.

33. **Read and Understood.** By signing this Contract, Contractor represents that it has read and understood the terms and conditions of the Contract.
34. **Authority to Execute.** The persons executing this Contract on behalf of the Parties warrant that they are duly authorized to execute this Contract and that by executing this Contract, the Parties are formally bound.
35. **Entire Agreement.** This Contract constitutes the entire agreement of the Parties and supersedes all prior written or oral communications and all contemporaneous oral agreements, understandings, and negotiations between the Parties with respect to the subject matter hereof.

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EXHIBIT A
SCOPE OF WORK
For
Protective Relay and Circuit Breaker Testing

EXHIBIT A
SCOPE OF WORK
PROTECTIVE RELAY AND CIRCUIT BREAKER TESTING
SPECIFICATION NO. S-2024-636BD

1 Purpose

This Scope of Work (SOW) describes the Contractor requirements for testing and calibration of protective devices (relays and circuit breakers) located at the Orange County Sanitation District's Reclamation Plant No. 1, Fountain Valley, CA; Treatment Plant 2, Huntington Beach, CA; and Pump Stations located throughout Orange County.

2 Description of Facilities

2.1 Reclamation Plant No.1

Reclamation Plant No. 1 processes an average of 130 million gallons of sewage a day (130MGD) to full secondary standards and then feeds 100MGD of the treated water to the Groundwater Replenishment System (GWRS); adjacent to Plant No. 1 and operated by the Orange County Water District.

2.1.1 Plant No. 1 Electrical System Description

Plant No. 1's electrical distribution system (see Appendix A-4: Single-Line Diagrams) consists of a primary-selective 12.47kV backbone fed from a double-ended Southern California Edison (SCE) 66kV -12.47kV utility substation (SCE Orcosan Sub). The backbone supplies power to 12 Power Buildings some of which have diesel standby generators.

A major component of the backbone system is the Central Generation (CenGen) facility that produces 12kV power via up to three (3), 2.5 megawatt reciprocating engines running continuously on sludge digester gas and natural gas. The CenGen facility operates in parallel with SCE utility power and directly feeds several of the Power Buildings.

The 12.47kV system contains a mix of medium voltage vacuum circuit breakers with protective relays and load interrupter switches with fuse protection.

Most Power Buildings are double-ended with 480V secondary-selective switchgear. The Blower Buildings are double-ended with 4.16kV and 480V switchgear.

Plant No. 1 also has several support building complexes that have single-ended 480V and 208V main switchboards with fixed molded-case circuit breakers.

All motor control centers (MCCs) that have internal main breakers have fixed mold-case main circuit breakers. Other MCCs are directly fed from upstream breakers and have no internal main.

2.2 Treatment Plant No. 2

Treatment Plant No. 2 processes an average of 80MGD of sewage to full secondary standards and pumps the treated water into the Pacific Ocean via a five-mile-long Ocean Outfall. Although Plant No. 2's average daily flow is less than Plant No. 1's 130MGD, the Plant No. 2 outfall pumping system has been constructed to manage up to 600MGD of wet-weather storm flow from both Plant No. 1 and Plant No. 2.

2.2.1 Plant No. 2 Electrical System Description

The Plant No. 2 electrical distribution system (see Appendix A-4: Single-Line Diagrams) consists of a primary-selective 12.47kV backbone fed from Southern California Edison (SCE) 66kV -12.47kV utility substation (SCE Orcogen Substation). The backbone supplies power to seven (7) Distribution Centers (having 12kV switchgear) and Power Buildings, some with diesel standby generators.

The Plant No. 2 CenGen facility produces 12kV power via up to five (5), three (3) megawatt reciprocating engines running continuously on sludge digester gas and natural gas and a one (1) megawatt steam turbine running on engine exhaust waste heat. The CenGen facility operates paralleled with SCE utility power and directly feeds several of the Distribution Centers and Power Buildings.

As at Plant No. 1, the Plant No. 2 12.47kV system contains a mix of medium voltage vacuum circuit breakers with protective relays and load interrupter switches with fuse protection. Most Distribution Centers and Power Buildings are double-ended with 480V secondary-selective switchgear. Distribution Center H and the Gas Compressor Building are double-ended with 4.16kV and 480V switchgear. The Operations Center and Maintenance Building have single-ended 480V main switchboards, the Operations Center with switchgear breakers, the Maintenance Building with fixed molded-case circuit breakers.

MCCs that have main breakers use fixed molded-case main circuit breakers at Plant No. 2.

2.3 Collections/Pump Stations

OC San's 388 miles of collection system pipelines and 15 pump stations are spread throughout Orange County and include 363 miles of gravity pipelines, 21 miles of force mains, four (4) miles of inverted siphons, and 4,469 manhole structures. (See Appendix A-4: Pump Stations Single-Line Diagrams.)

Pump Station	Location
Bitter Point	Newport Beach
Rocky Point	Newport Beach
Bay Bridge	Newport Beach
Crystal Cove	Newport Beach
Lido	Newport Beach
15 th Street	Newport Beach
A-Street	Newport Beach
MacArthur	Newport Beach
Main Street	Irvine

Seal Beach	Seal Beach
Slater	Huntington Beach
Westside	Los Alamitos
Edinger	Huntington Beach
College Avenue	Costa Mesa
Yorba Linda	Fullerton

2.3.1 Collections/Pump Stations Electrical System Description

OC San's Pump Stations are individually fed from SCE via radial design and operate either on 480V or 4.16kV.

3 Definitions

OC San – shall mean the Orange County Sanitation District

OC San Contract Manager – shall mean the OC San employee who is the main point of contact for all issues related to the Contract.

Test Event – shall mean all of the activities involved with testing at an electrical equipment location within either Plant or Pump Station on the date arranged for such activities. Test Event activities shall include advance planning/coordination with OC San, mobilization, test equipment set up, Lock-Out Tag-Out (LOTO), device testing, protective device handling and set up, test documentation, and site restoration.

Test Event Mobilization/Demobilization – shall mean when the Contractor or Contractor Designee, at the direction of the OC San's Contract Manager or OC San Designee, moves their work forces and equipment onto the equipment location at the start of a Test Event and removes on completion of the Test Event or at the direction of the OC San's Contract Manager or OC San Designee, and returns the equipment location to pre-existing condition to the satisfaction of OC San's Contract Manager.

4 Contractor Qualifications

4.1 Contractor Qualifications

4.1.1. NETA Membership Listing or Independent Qualifications

The Contractor's firm shall qualify to perform testing in this contract by either:

Being listed by the InterNational Electrical Testing Association (NETA) as a NETA member firm in good standing for at least five (5) years; or

Being an independent testing firm established for at least ten (10) years in the business of electrical protective device testing and under the responsible charge of a licensed Professional Electrical Engineer (PE).

4.1.2 California C-10 Licensing

Contractor shall possess a valid C-10 (Electrical) license issued by the California Contractors State License Board.

4.2 Contractor Responsibilities

The Contractor's testing staff shall be fully trained and qualified beforehand to:

1. Competently handle and operate all test equipment used by the Contractor for the Contract
2. Quickly become familiar with all of the various protective devices and schemes covered in the Contract in order to effectively test them

Technical staff shall have at minimum three years' experience with performing device tests and calibration on the same makes and models of protective devices as those at OC San (See Appendix A-1)

Obtain OC San Contract Manager approval on proposed substitutions of technicians that were previously approved at the Project Kickoff Meeting.

3. At the Project Kickoff Meeting, the Contractor shall submit proof of having in place an established training and certification program that builds and maintains the technical skill levels of its employees in Electric Apparatus Testing.

4.2.1 Lead Test Technicians

Lead Test Technicians directly overseeing the testing on-site shall be currently certified "NETA Test Level 3" in electrical power distribution system testing.

Lead Test Technicians shall have a minimum of five (5) years' experience in the testing of electrical protective devices.

A Lead Test Technicians shall be present in person during test events at each Plant or at any Pump Station and shall be available for communication at all times with OC San's staff, including review of all raw test data.

4.2.2 Test Technicians

Test Technicians performing testing on-site shall be currently certified "NETA Test Level 2" in electrical power distribution system testing.

Test Technicians shall have a minimum of three (3) years' experience in the testing of electrical protective devices.

4.3 Electrical Test Data Management Via Database Software

The OC San Operations and Maintenance Department currently utilizes Power DB database to store, track, and report electrical test data. The Contractor shall submit all test data as digital Power DB files in addition to PDF files.

4.4 Test Forms and Test Data

At the Project Kickoff Meeting, OC San will email to the Contractor PDF and Power DB database templates of all test and data forms (e.g. for digital relays) from OC San's Power DB database.

4.5 Test Equipment

4.5.1 Equipment Technology

All key test equipment used by the Contractor shall be capable of interfacing with Power DB software to automatically record and organize test data as it is acquired.

4.5.2 Equipment Calibration

At the Project Kickoff Meeting the Contractor shall submit proof of having in place a test instrument calibration program that ensures that all applicable instruments are maintained within rated accuracy. The accuracy shall be directly traceable to the National Institute of Standards and Technology (formerly the National Bureau of Standards).

Dated calibration labels shall be visible and legible on all test equipment, and up-to-date records and calibration instructions shall be maintained for each test instrument. The calibrating standard shall be of a higher accuracy than that of the instrument tested.

All applicable test equipment used by the Contractor shall be calibrated at a minimum in six (6) month intervals. Equipment with calibration labels older than six (6) months shall be considered as out of calibration and shall not be used for testing under the Contract.

4.6 Support Equipment

4.6.1 Temporary Lighting

The Contractor shall be responsible to provide any lighting necessary to perform its tasks to complete the job.

4.6.2 Portable Generator

120VAC/20A receptacle power may be available at select test locations. The Contractor shall provide portable generators to power any requirements above this (e.g., 480VAC for high-current breaker test sets) and additional lighting as needed.

The Contractor shall be responsible for all connecting cabling, operation, maintenance, fueling, spill containment, and cleanup requirements of its generators. OC San will provide space for staging of the generators during operation within 50 feet of the equipment under test. OC San will also provide parking space for the generators when not in use.

4.6.3 Lifting of Large Equipment

Some of the test locations are on platforms above grade and have no ramps. The Contractor shall provide any lifting means required to locate its heavy equipment (e.g., high-current breaker test equipment) near to equipment being tested.

In locations accessible by elevator, the Contractor may use the elevator for access if the weight of the test equipment is well within the elevator's lifting capacity. If the elevator is not available, the Contractor shall provide separate lifting means at no extra cost to OC San.

4.6.4 Parking and Secure Equipment Storage

Due to the large number of test locations at both Plants and the Pump Stations, no specific secured area will be provided for the Contractor's use. The Contractor shall provide and use secure enclosed vehicles or mobile trailers for all Contractor-supplied equipment, accessories, and tools. The Contractor will be permitted to park its secured vehicles or trailers overnight on OC San property in locations approved by OC San Operations and Maintenance staff.

5 Project/Work Elements

5.1 Electrical System Protective Devices to be Tested

The Contractor shall test and calibrate the protective devices at Plant No. 1, Plant No. 2, and Pump Stations in the quantities specified in Appendix -1. Specific information on each of the following devices can be found in the Protective Device Data Tables in Appendix A-1:

1. Programmable multifunction digital protective relays (DPR's)
2. Discrete Function electromechanical protective relays
3. Discrete Function solid state electronic protective relays
4. Low-voltage switchgear power circuit breakers and auxiliary relays
5. Fixed-mounted molded case main circuit breakers.

5.2 OC San As-Built Documentation Supplied to the Contractor

5.2.1 Protective Device Data Tables

Appendix A-1 is comprised of data tables of relays and circuit breakers to be tested and calibrated in this SOW. The tables include loop tag numbers and setting information related to each device.

During the progress of work the Contractor shall examine each device in the field and compare the field settings to the device information listed in the tables. The Contractor shall notify OC San when a device's settings do not match the information listed in the tables found in Appendix A-1 and shall flag the settings on the test results as "As Found".

The Contractor shall update the data tables as work progresses (as Contractor finishes the testing area/equipment line up), adding its comments, passed/failed status, replacement, testing date, as-left settings confirmation, verification of the model/part numbers, and any other pertinent information.

OC San reserves the right to revise or update the data tables prior to scheduled Test Events.

The Contractor shall submit the final as-left Excel spreadsheets and Power DB files with Final Test Report.

5.2.2 Digital Protective Relay Data (DPR)

The settings for DPRs listed in Appendix A-1 reside in the programmable memory within the relays. These programs contain many other settings not listed which must be kept unchanged unless directed to change them by the Contract Manager.

However, OC San may require the Contractor to change certain time/overcurrent settings via device front panel. The Contractor shall update the data tables accordingly.

5.2.3 Single-Line Diagrams

Appendix A-4 includes plant overall and detailed single-line diagrams for all electrical distribution equipment at Plant No. 1, Plant No. 2, and Pump Stations.

5.2.4 Plant Site Maps

The maps supplied in Appendix A-5 show electrical equipment locations at Plant No. 1, Plant No. 2, and Pump Stations in relation to buildings and roadways.

5.3 Planning of Testing Work

5.3.1 Overall Testing Plan

Contractor shall work jointly with OC San staff to create an Overall Testing Plan organized around Test Events occurring at equipment locations at each Plant and Pump Station that ensures that protective devices outlined in Appendix A-1 are tested. The goal of this process will be to produce a sequence of equipment lineups available for testing at each Plant or any Pump Station for Contractor's four (4)-week look-ahead schedules.(As discussed in section 5.3.3 below.)

The Contractor shall be aware that although the work will require interruptions of power to portions of treatment plant facilities, OC San's overall daily wastewater treatment mission cannot be compromised.

However, there are some locations such as Pump Stations with radial feed which do not have redundancy and require more careful planning.

The Contractor shall also be aware that although the Testing Plan may initially result in consequence outages for testing work each week at each Plant or any Pump Station with no lapses, this objective will become less attainable as the testing work progresses.

The following scheduling requirements shall apply in planning the testing work.

5.3.1.1 Simultaneous Testing at Both Treatment Plants

The Contractor shall be ready to perform testing work at both Plants simultaneously using two (2) work crews. The third (3rd) crew shall perform testing at Pump Stations which may take place during off-hours. Each crew must be managed by its own Lead Technician.

5.3.1.2. Weekly Rate of Device Test Completion

Test Events will be organized based on a sequence of equipment line ups (480V Motor Control Center, 480V or 12.47kV Switchgear (Bus A or Bus B)) outage availability. The plan shall be minimum of one (1) equipment line up with associated relays and circuit breakers completed per week at each Plant or any Pump Station.

5.3.1.3 Total Schedule Duration

The total schedule duration shall be up to thirty-six (36) months from the Project Kickoff Meeting date.

5.3.1.4 Contractor Work Schedule

While most work is expected to be performed between 7:30am and 3:00pm, Monday through Thursday, some outages may be required to be performed on weekends or in the early morning hours to coincide with low water flow periods.

5.3.1.5 OC San Electrical Maintenance Staff Work Schedule

The Contractor may perform testing work while OC San staff has gone on breaks (but not during lunch period). However, if OC San staff assistance is required for a particular test planned during a morning or afternoon break, the Contractor shall perform other work at that location until OC San staff returns.

5.3.1.6 Substitute Work Location

The Testing Plan shall be so arranged that, within Plant operational constraints, a substitute equipment lineup will be available should a scheduled equipment line up become unavailable. Should substitution be required, no extra cost will be incurred by OC San.

5.3.1.7 Minimizing Generator Time

The Testing Plan shall be arranged that, within Plant operational constraints, portable generator time is minimized.

5.3.1.8 Interruption of Testing Work

The Contractor shall be aware that situations will arise wherein a previously planned Test Event may be cancelled before work begins. Or, during the progress of work on a Test Event, OC San may require interruption or termination of the Test Event to restore power if alternate treatment process workarounds cannot be arranged. Should either of these circumstances arise, OC San reserves the right to direct the Contractor to another location in the Plant. The Contractor's efforts to relocate in these circumstances shall count as an additional mobilization/demobilization if less than 24 hours' notice is given.

5.3.1.9 Cancellation of Testing Work – by OC San

If OC San must cancel a scheduled Test Event due to unforeseen circumstances and the Contractor has already mobilized for that Test Event, OC San will pay the cost of Test Event Mobilization/Demobilization per Exhibit B. If OC San must cancel a scheduled full day of testing within multiple-day Test Event, OC San will pay for a Cancelled Test Day per Exhibit B.

5.3.1.10 Cancellation of Testing Work – by Contractor

If the Contractor must cancel a scheduled Test Event or day of testing within a Test Event, the Contractor shall notify OC San Contract Manager via e-mail as soon as possible, but no later than the 24 hours on the prior business day. The e-mail shall state the reason for cancellation. If the Contractor does not notify OC San before the day of testing, the Contractor shall provide a credit to OC San for the cost of Cancelled Test Day per Exhibit B.

5.3.1.11 CenGen Bus “G” Testing

Testing of protective devices on the CenGen Bus G at Plant No. 1 only. Testing will require a complete shutdown of all CenGen generators, which is a significant risk of cost impact to OC San. The Contractor shall work with OC San staff to plan this critical Test Event to minimize outage time to Plant No. 1 CenGen Bus G. Note, Plant No. 2 CenGen Bus G protective devices will not be tested under this Contract.

5.3.2 Walkdown of all Plant Equipment Jobsites

In conjunction with Planning Conferences below, the Contractor shall participate in a complete walkdown of all Plant equipment job sites at both Plants to verify site and equipment conditions, note details, and sufficiently prepare for all Test Events. Separate visits to Pump Stations will be arranged to verify site and equipment conditions (estimated quantity of total trips is three (3)) as Pump Stations are located remotely.

5.3.3 Look-Ahead Schedule

In coordination with the Overall Testing Plan, the Contractor shall prepare and maintain a rolling 4-Week Look-Ahead Schedule to confirm adherence to the Testing Plan.

5.3.4 Weekly Testing Meeting

The Contractor shall participate in regular weekly meetings with OC San staff to review testing progress, discuss upcoming test events and any difficulties being encountered in accomplishing the work. The Contractor shall submit the 4-week Look-Ahead Schedule at each meeting.

5.4 Test Events Activities

This section describes the interaction of OC San Electric Maintenance Staff and Contractor's crew during the stages for a Test Event.

The Contractor's test technicians shall prepare in advance before the first day of testing by researching the devices to be tested so that equipment downtime and delays of device testing caused by inadequate preparation are minimized.

The actual duration of each Test Event should not exceed its pre-approved time limit whenever possible. OC San staff will notify Contractor of the scheduled date and duration of each upcoming Test Event in advance. The Contractor shall notify OC San Contract Manager as early as possible if there is a possibility of going beyond the approved outage time.

5.4.1 Test Equipment Mobilization/Demobilization

The Contractor shall include thirty (30) minutes of standby time within the cost for Test Event Mobilization/Demobilization per Exhibit B to set up its test equipment and prepare for the day's testing.

The Contractor may move its testing equipment vehicle(s) and/or trailers to the specific testing location the day prior to the start of testing at that location.

However, at no time shall placement of the Contractor's items obstruct OC San access to building doorways or active electrical or process facilities/equipment.

5.4.2 Electrical Equipment Isolation/Lock-Out, Tag-Out

OC San staff will perform all switching operations and LOTO procedures as required prior to testing activities.

The Contractor shall participate in these LOTO procedures. Each Contractor's employee involved in the testing and maintenance activities must apply their lock.

If the process of equipment isolation extends more than thirty (30) minutes beyond the planned time for the start of the Contractor testing, OC San shall pay the Contractor "OC San Caused Delays" per Exhibit B.

5.4.3 Test Equipment Setup

The Contractor shall provide all required items necessary for performance of its tasks, including, but not limited to, the following: test equipment, test cabling or bussing, test clamps, test hardware, tools, extension cords, temporary lighting and power, portable tables, and chairs.

The Contractor may stage its test equipment ahead of the start time of testing. However, OC San assumes no responsibility for the security of the Contractor's property.

5.4.4 Protective Device Handling

A majority of protective relays and low voltage circuit breakers will be tested in place.

OC San staff will initially rack out/ draw-out low voltage power circuit breakers for testing. The Contractor shall rack in and rack out breakers in their respective cells in order to inspect the condition of the breaker racking mechanisms and cells.

There may be situations where molded case circuit breaker requires removal from 480V Motor Control Center, 480V Switchgear or 480V Switchboard for placement on the bench for testing.

Under supervision of OC San, the Contractor shall n-land wiring to hard-connected devices as required for testing and re-land them afterwards. Under supervision of OC San, Contractor shall remove the circuit breakers and place them on the bench for testing. Once testing is completed with satisfactory ("Pass") results, Contractor shall reinstall the breaker back to 480V Motor Control Center, 480V Switchgear or 480V Switchboard and re-land wiring afterwards.

5.4.5 Device Data Verification

During the progress of work on this contract, Contractor shall examine each device in the field and compare the field data to the device information listed in the tables. The Contractor shall promptly notify OC San of device data found to be different than the information listed in the table and shall flag the data in the table as "As Found". The Contractor shall not proceed with testing that device and shall move on to the next device to be tested while waiting for OC San resolution of settings for that device. Once corrected data has been provided by OC San staff, the Contractor shall reset that device to the revised settings and test it, recording the data as "as tested".

5.4.6 Test Documentation

The Contractor shall document every electrical inspection item and test performed during the Test Event using OC San Standard Power DB forms. These forms shall be submitted to OC San Contract Manager for comment in Portable Document Format (PDF) as a Draft Test Report at the end of each day's testing work. OC San will review Draft Test Report and provide comments,

acceptance, or rejection. OC San reserves the right to require the Contractor to retest if Draft Report is found unsatisfactory.

In addition, the Contractor shall photograph each protective device associated to the Switchgear, Switchboard, and Motor Control Center (cell/bucket), and shall provide such photographs to OC San. Photographs shall clearly have the breaker loop tag identified and clearly show the settings that the device was tested on.

5.4.7 Test Event Site Restoration

During inspection and testing and after completion, the Contractor shall coordinate with OC San Contract Manager to ensure that:

- All devices have been properly reinstalled
- All un-landed wiring has been correctly re-landed
- All device test labels have been placed and are correct and legible
- All Contractor items have been removed

5.5 Device Inspection and Testing

5.5.1 NETA Standards

Appendix A-3 includes excerpts of the NETA MTS inspection and test standards for Protective Relays and Low Voltage Circuit Breakers.

All devices in this Contract shall be inspected, tested, and calibrated in accordance with latest applicable NETA standards.

The Contractor shall apply new calibration labels and shall include the device loop tag number and test date. The labels and written information shall be easily legible and filled out using permanent sunlight-resistant long-lasting ink.

5.5.2 Failed Devices

When a device being tested fails any tests, the Contractor shall first confirm failure of the device by repeating the test or by alternative test measures. In the case of electromechanical protective relays, the Contractor shall verify the calibration of the relay prior to retesting.

The Contractor shall promptly notify OC San Contract Manager for resolution and allow OC San to plan for device replacement or equipment repair. Whenever possible, OC San staff shall remove the device from service via proper LOTO procedures. Depending on the criticality of the circuit served by that device, a replacement relay or circuit breaker will be installed by OC San, and the Contractor shall calibrate and test the replacement relay to the correct settings. Testing of the replacement relay shall count as an additional test.

In order to mitigate risk of process down time, when a device fails on A side, the B side device shall not be tested.

5.5.3 Previously Failed Devices

Devices found on the field marked as “Failed” and which have not been replaced shall not be re-tested in this Contract. The Contractor shall provide a testing report for the device and indicate on the report that the device was found as “Failed” and not tested. However, should OC San replace previously failed devices within the period of the Contract, the replacement device will need to be acceptance tested.

5.5.4 Protective Relays

The Contractor shall as a minimum perform all required tasks listed in the latest version of NETA MTS Sections 7.9.1 and 7.9.2 (as shown in Appendix A-3) for all relay types including DPRs. The Contractor shall test the entire control circuit including all trips and alarms generated from the relay.

5.5.4.1 Testing of Hard-Wired Relays

Some protective relays on Appendix A-1 are hard-wired non-drawout relays without test switches. In these instances, any un-landing of wiring for testing and re-landing afterwards will be performed by OC San staff.

5.5.4.2 Mechanical and Electronic (Solid State) Discrete Relays

The Contractor shall perform all required maintenance tasks as specified in NETA MTS.

The Contractor shall document all positions of settings switches and jumpers both external and internal (e.g., Basler BE1-25) even if such settings are not listed in Appendix A-1.

5.5.4.3 Digital Programmable Relays

OC San staff will provide program files of DPRs being tested to the Contractor prior to testing. The Contractor shall compare the files on record with the program resident in the relay and note any differences. The Contractor shall work with OC San staff to resolve such differences.

The Contractor shall document any relay output mappings that may not have been included in previous file listings.

For DPRs that have been installed since the last testing cycle in 2017 (not shown in Appendix A-1), the Contractor shall produce a table for each digital relay listing the available settings, the factory default for each setting, and the “as left” setting. Refer to Appendix A-2 for an example of a microprocessor relay table. In addition to providing these setting tables, the Contractor shall download the actual digital files from the relays themselves and submit copies in a USB thumb drive. The files shall be indexed according to location, switchgear, cubicle, and relay tag number.

5.5.5 Medium Voltage Circuit Breakers

Medium voltage circuit breakers are tested and maintained by OC San staff and will not be included in the Contract. However, the protective devices that trip the breakers are part of the Contract and listed in Appendix A-1.

5.5.6 Low Voltage Circuit Breakers

The Contractor shall, as a minimum, perform all required tasks listed in the latest version of NETA MTS Sections 7.6.1.1 and 7.6.1.2 (as shown in Appendix A-3). Breakers will be tested in place and removed by Contractor as needed.

5.5.6.1 Power Circuit Breakers

Many main power circuit breakers in Appendix A-1 are equipped with Kirk-Key mechanical interlocks and electrical truck-operated (TOC) and mechanism operated (MOC) position switches involved with Main-Tie-Tie-Main interlocking/transfer schemes. In addition to the above NETA tests, the Contractor shall verify that Kirk Key interlocks and TOC/MOC interlock switches are correctly operating. However, the Contractor will not be required to test overall switchgear automatic transfer schemes.

5.5.6.2 Molded-Case Circuit Breakers

Some molded-case circuit breakers in Appendix A-1 have Kirk-Key interlocks. Where feasible the Contractor shall test the functionality of these interlocks.

5.5.6.3 Primary Injection Testing

All low-voltage circuit breakers identified in Appendix A-1 shall be tested by primary current injection per NETA MTS standards.

6 Resources Available

OC San will make the following information available to the Contractor as needed in addition to providing access to OC San staff and utilities:

Resource	Description
Appendix A-1	Breaker & Relay Settings for Plant No. 1, Plant No. 2 & Pump Stations
Appendix A-2	Sample Microprocessor Relay Table
Appendix A-3	Applicable ANSI/NETA MTS Testing Specifications Sections
Appendix A-4	Single-Line Diagrams for Plant No. 1, Plant No. 2 & Pump Stations
Appendix A-5	Electrical Equipment Location Maps for Plant No.1, Plant No. 2 & Pump Stations
As Necessary	Protective Relay Elementary Diagrams
As Necessary	Digital Protective Relay Program Listings

7 **Contractor Submittals**

Contractor shall provide the OC San Contract Manager with the following:

Requirement	Section	When Due
Training & Certification Program	4.2	At Project Kickoff
Draft Test Reports	5.4.6	Within Five (5) Business Days Following End of Each Test Event
Test Form Templates and Data Formats	4.4	At Project Kickoff
Test Instrument Calibration Program	4.5.2	At Project Kickoff
Tracking Spreadsheet Updates	9.3	Update Weekly
4-Week Look Ahead Schedule	5.3.3	Weekly
New DPR Data Files	5.5.4.3	Within Five (5) Business Days Following End of Each Test Event
Decision Log	9.3	Update Weekly
Project Schedule	10.1	After Project Kick-Off Mtg
Draft Final Report	10.3	Completion of All Testing
Approved Final Report	10.3	15 days after receipt of OC San Comments

8 **Project Milestone Schedule**

The estimated milestone schedule is listed as follows:

Milestones/Timeline	Deadline (Weeks from effective date of Notice to Proceed)
Kick-Off Meeting	2
Initial Overall Plan Review Meetings	4
Plant No. 1 First Test Event	12
Plant No. 2 First Test Event	12
Pump Stations First Test Event	12
Plant No. 1 Testing 50% Complete	60
Plant No. 2 Testing 50% Complete	60
Pump Station Testing 50% Complete	60
Plant No. 1 Testing 100% Complete	120
Plant No. 2 Testing 100% Complete	120
Pump Stations 100% Complete	120
Submit Final Report	138
Approved Final Report	156

9 **Project Management**

The Contractor shall assign a Project Manager (PM) for the Contract. PM responsibilities shall include, but not be limited to, project planning, scheduling, management of the Contractor's project resources, invoicing, and communication with the OC San Contract Manager. The Contractor's PM shall attend and conduct all weekly project meetings with

OC San Contract Manager and OC San's key staff. Should Contractor's PM not be available due to illness or time off, the Contractor shall designate a substitute PM of equal position in the Contractor's organization who has been delegated authority to make decisions in the primary PM's absence.

9.1 Project Kick-Off Meeting

A project kickoff meeting shall be held with OC San's staff within two (2) weeks after the effective date of the Notice to Proceed to introduce principal members of OC San and Contractor's teams. The discussion topics shall include OC San's responsibilities, Contractor's responsibilities, invoice procedures, personnel badges, parking, site access, Contractor's SOW, detailed project schedule with milestones, and safety policy training.

9.2 Overall Test Planning Conferences

After the Project Kick-Off Meeting, the Contractor shall attend and participate in planning conferences with OC San Electrical Maintenance Staff at each Plant to plan the overall sequence of test events to ensure coverage of all devices being tested. Test event sequence plans for Pump Stations will be included in the Plant No. 2 planning conference.

The following guidelines will apply to this planning process.

- The overall objective of this process will be to produce a sequence of equipment lineups available for testing for the Contractor's 4-week Look-ahead Schedules.
- Work may occur at both Plants and Pump Stations simultaneously. The plan shall be minimum one equipment line up with associated relays and circuit breakers completed per day at each Plant or Pump Station.
- While most of this work is expected to be performed between 7:30 A.M. and 3:00 P.M., Monday through Thursday, some outages may be required to be performed in the early morning hours (off normal hours) to coincide with low water flow periods.
- Within Plant Operational constraints, OC San will provide a similar substitute lineup should a scheduled lineup become unavailable.
- Within Plant Operational constraints, OC San will schedule breaker testing at both Plants such that generator time is minimized.
- The testing schedule shall be updated weekly showing daily work projected a minimum of four weeks into the future.
- As much as possible, no actual outage duration shall exceed the respective one approved in advance. Due to the significant amount of construction projects occurring, the Contractor shall plan ahead 8-12 weeks for planned shutdowns. In addition, there are Pump Stations which require SCE to perform an outage. OC San will support with coordination with SCE outage, but any cost associated with SCE will be paid by the Contractor. The Contractor shall notify OC San Contract Manager if there is a possibility of going beyond the approved outage time.

The Contractor shall produce its Project Schedule based on these conferences.

9.3 Project Coordination Conferences, Decision Log, and Tracking Spreadsheet Updates.

The Contractor shall conduct weekly project meetings with OC San Contract Manager. These meetings shall be attended by OC San Contract Manager and Contractor's PM at a mutually agreeable time. The purpose of the meetings shall be to review the status/progress of the project scope, schedule, budget, project invoices, outstanding project issues and any issues which may affect completion of the project. Other meetings shall be scheduled on an as needed basis.

The Contractor shall keep an ongoing record of decisions made on the project in a "Decision Log" and shall submit a copy of the updated Decision Log for each progress meeting in an Excel Spreadsheet format.

The Contractor shall submit weekly Breaker and Relay Tracking Spreadsheet updates in PDF form for both Plants and all Pump Stations at each weekly Project Coordination Conference.

10 Deliverables

10.1 Project Schedule

See Section 8 above. The Contractor shall submit PDF copies for OC San approval.

10.2 Draft Test Reports

See section 5.4.6 above for submittal of PDF Draft Test Reports following the end of each Test Event.

10.3 Final Report

The Contractor shall provide a Final Draft Test Report in PDF including the following:

- A discussion section providing a listing of the test equipment used, the test procedures used, and a summary of findings including defective relays and other maintenance issues
- Decision Log
- Copies of the completed field testing sheets, grouped by process area and building
- Photographs of protective devices with associated loop tags and tested settings
- An "As Left" revision of the tables in Appendix A-1
- "As Left" versions of the tables produced for each microprocessor relay in the format similar to that in Appendix A-2

The Contractor shall allow at least 15 calendar days for OC San comments on the Final Draft Test Report. The Contractor shall address OC San's comments, if any, and submit a legible set of all OC San comments together with the Contractor's detailed responses. A PDF copy of the responses and a PDF of the UPDATED Final Test Report shall be submitted no later than 15 calendar days after receipt of OC San comments.

The Contractor shall also provide two (2) native file (e.g. Excel) copies on USB and PDF of the final versions of the tables in Appendix A-1, and the individual tables for each microprocessor relay. The field-testing sheets shall be submitted in PDF in addition to Power DB Format. The electronic submittals shall be provided in Microsoft Excel 2010 (or higher) format.

11 Safety & Hazardous Materials

The Contractor shall follow all OSHA and OC San safety requirements and procedures while conducting work on OC San property. The Contractor shall provide OC San with Safety Data Sheets (SDS) for all applicable materials before the material is brought on site.

11.1 Plant Safety Awareness

The Contractor shall be aware of the use of bleach, hydrogen peroxide, ferric chloride, acid, caustic soda, other hazardous materials, and potential presence of hazardous gasses in and around the Plants.

There are various alarm systems installed to alert employees of hazardous conditions. The Contractor must instruct its employees of these dangers and that they must evacuate the area immediately should an emergency occur.

11.2 Job Hazard Analysis

Prior to commencing work, a job site safety analysis shall be performed. The Contractor shall attend a job hazard analysis meeting with OC San's Risk Management personnel. All safety issues shall be addressed, and verification shall be made that all safety measures shall be carried out and required safety equipment is available.

Refer to OC San's Contractor Safety Standards for a detailed description of OC San's Control of Hazardous Energy policy and procedure. Two weeks prior to the meeting, the Contractor shall submit a work plan that describes the number of people involved in the work, the work procedures, materials, and equipment to be used, and any applicable Safety Data Sheets.

12 Staff Assistance

The Contractor will be assigned a single point of contact for this project. Any meetings and/or correspondence related to this project shall be scheduled and approved by the OC San Contract Manager.