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SOUTHERN CALIFORNIA EDISON COMPANY
Rosemead, California

SPECIFICATION 40-0284

TURBINE PEDESTAL
AND MISCELLANEOUS FOUNDATIONS
SOLAR ONE GENERATING STATION

October 6, 1980

Approved for Issue:

C. P. Winarski

C. P. Winarski
Project Engineer

R. Cortez

R. Cortez
Constr. Engineer

Date October 6, 1980

JOBWALK MINUTES

SPECIFICATION 40-0284
TURBINE PEDESTAL
AND MISCELLANEOUS FOUNDATIONS
SOLAR ONE GENERATING STATION

The jobwalk for this work was held at the jobsite Wednesday, October 15, 1980. The attendees were as follows:

D. Espinoza	(213) 666-7995	W. C. Beggs
M. Fisher	(213) 666-7995	W. C. Beggs
P. O'Connor	(714) 627-7479	Conifer Const.
J. Gee	(714) 256-8497	GEE Enterprises
L. Thomas	(213) 426-9351	Jenkin Const.
C. Tate	(213) 638-8761	Owl Const.
G. Vriend	(213) 944-7991	Q.V.L. Const.
P. Beltran	(714) 254-2941	Edison Construction
J. Campbell	(213) 572-2379	Edison Specifications
O. Coronado	(213) 572-1440	Edison Procurement
R. Cortez	(714) 254-2942	Edison Construction
R. Gray	(213) 572-1397	Edison Procurement
G. McHose	(714) 254-2942	Edison Construction
O. Warren	(714) 254-2941	Edison Construction

The meeting was convened at 10:15 a.m. and was conducted by Raul Cortez, Edison Construction Engineer for this work.

1. Mr. Orb Coronado, Project Purchasing Agent, detailed the following instructions to the Bidders.
 - A. The work shall be bid on a fixed price basis as presently indicated on the drawings and described in the specification.
 - B. The bids are due by 2:00 p.m. October 27, 1980 at the Edison General Office, Room 193, Rosemead. The bid will be awarded by November 14, 1980.
2. Mr. Coronado stated that the work will be performed under the Edison Master Insurance Program which covers all insurance requirements of the Contractor except Automobile Liability Insurance. A brochure was given to each Bidder to further explain the insurance program. Bidder's questions regarding the insurance program should be directed to Mr. John Button, Edison Insurance Department, at (213) 572-1595.

3. Edison requires that the Proposal Requirements section of the specification be completely filled out. Any questions regarding the proposal should be directed to Mr. Coronado.

Mr. Coronado emphasized the importance of using minority/small business subcontractors on this work. For information regarding such subcontractors, Bidders were directed to contact Operation Second Chance (OSC), 341 West Second Street, San Bernardino 92401, (714) 884-8764.

Evidence of having contacted minority/small business subcontractors, as required in the Proposal Requirements, shall contain the name of the business, the person contacted, and the date of the contact.

4. Mr. Coronado directed Bidders to provide a schedule of Termination Charges, per Section B.3 of the Proposal Requirements, in increments of two weeks. The work duration will be approximately 10 weeks.
5. Mr. Cortez directed the Bidders to add the following items to the Proposal Requirements.

On Page B-1, Section B.1.1, Base Bid Breakdown, add the following:

6. Sole Plates and Embeds
7. Electrical Work

On Page B-2, Section B.1.2, Firm Unit Pricing for Extra or Deleted Work, add the following:

6. Electrical conduit, ductbank, and grounding per ft.

The above additions will be contained in Addendum No. 1 to the specification which will include a new Proposal Requirements section.

6. Mr. Cortez reviewed the specification to emphasize various aspects of the work.

The work shall be performed to OSHA requirements.

All open excavations shall be barricaded.

If clean, native material may be used for backfill.

Earthwork compaction shall be 90%.

Backfill shall be placed in uniform layers not exceeding eight inches.

Compaction shall be tested by nuclear gauge.

Bidders were advised that concrete may require protection against freezing and material may require protection against weather conditions that normally occur this time of year at the jobsite.

On Page 3.3B-1, if the mill test report is not submitted by Contractor the steel may be tested by Edison at Contractor's expense.

On Page 3.3B-2, Mechanical Splices, Contractor shall provide certified operators to perform cadwelding at Contractor's expense. Cadwelding shall be performed in accordance with manufacturers specifications.

The operators shall have current certificates. Los Angeles certification is acceptable. If other certificates are to be submitted, Contractor shall submit a copy of the certificate to the Engineer at least one week prior to the welding operations.

The tolerances for sole plates and embeds shall be +1/16 inch.

The tolerance for formwork shall be +1/8 inch. Steel templates shall be used for anchor bolts.

The Engineer's approval shall be obtained if Contractor proposes to use a modular type of formwork.

The concrete mix design is critical. The concrete mix design shall be by an independent lab, shall be designed specifically for this work, and shall be signed by a P.E. A certificate of conformance from the concrete supplier shall be submitted to the Engineer stating that the material has been tested and is in compliance with the concrete requirements of the specification.

Concrete delivered in place shall not exceed 70°F. Any adjustment of the concrete mix shall be performed at the batch plant, not at the Jobsite.

If extremely cold weather occurs, Contractor shall provide a means of heating the concrete and shall provide a thermometer to verify the temperature of the concrete.

Concrete curing is critical. Strict compliance with ACI requirements shall be enforced.

Mr. Cortez emphasized that all material, including all electrical material, for this work shall be provided by the Contractor.

The miscellaneous foundations required for this work are identified on the various drawings by means of circled areas.

The drawings given to the Bidders represent 80% of the work and the Bidders shall bid on the work represented on these drawings. If major changes are to be incorporated, each Bidder shall be informed and a second meeting will be called if the changes are substantial.

Mr. George McHose explained that a 480 volt 60 ampere breaker shall be provided by Edison at the Edison substation adjacent to the work area. Contractor shall arrange for a qualified electrician to install same and any necessary conduit to the work area. shall be installed a minimum of two feet underground. Contractor shall remove the conduit on completion of Contractor's work.

7. This work shall be performed by union labor.

END JOBWALK MINUTES

SOUTHERN CALIFORNIA EDISON COMPANY
Rosemead, California

SPECIFICATION 40-0284

TURBINE PEDESTAL
AND MISCELLANEOUS FOUNDATIONS
SOLAR ONE GENERATING STATION

October 6, 1980

ADDENDUM NO. 1

October 16, 1980

Approved for Issue:

C. P. Winarski

C. P. Winarski
Project Engineer

Paul Cortez

R. Cortez
Constr. Engineer

Date Oct. 17, 1980

CHANGE SUMMARY

Change

Date

Description

	October 6, 1980	Original Issue
Addendum No. 1	October 16, 1980	Section 2 & 3, text corrections Proposal Requirements Part B replaced

SPECIFICATION 40-0284
Turbine Pedestal
Solar One
Addendum No. 1

SOUTHERN CALIFORNIA EDISON COMPANY
Rosemead, California

SPECIFICATION 40-0284

TURBINE PEDESTAL
AND MISCELLANEOUS FOUNDATIONS
SOLAR ONE GENERATING STATION

ADDENDUM NO. 1

The following changes and additions are hereby incorporated into Specification 40-0284:

1. Page 2-1, Project Summary

The following is added to this text:

--- the turbine pedestal Work, miscellaneous foundations, and electrical Work as indicated on the ---.

2. Page 3.2A-1, Section 3.2A.1, Scope of Work

Item D, second sentence is corrected to read as follows:

Material used for sheeting, shoring, and bracing ---.

3. Proposal Requirements

Part B, Commercial Information, is replaced entirely with the attachment to add items to Section B.1.1 and Section B.1.2.

END OF ADDENDUM NO. 1

SPECIFICATION 40-0284
Turbine Pedestal
Solar One
Addendum No. 1

SOUTHERN CALIFORNIA EDISON COMPANY
Rosemead, California

PROPOSAL REQUIREMENTS

SPECIFICATION 40-0284

TURBINE PEDESTAL

AND MISCELLANEOUS FOUNDATIONS

SOLAR ONE GENERATING STATION

Part B

Commercial Information

This Part B shall be individually stapled or clipped for easy removal from the balance of the proposal.

B.1 PRICES

Bidder shall submit a fixed price quote including all taxes.

GRAND TOTAL PRICE for performing all the Work and all provisions of the Specification:

\$ _____
(Figures)

Dollars

(Words)

B.1.1 Base Bid Breakdown

The following items represent an allocation of the Grand Total Price and shall not be used for any adjustments of that price. Price adjustments, if any, shall be determined by the firm unit prices stated in Section B.1.2.

<u>Item No.</u>	<u>Description</u>	<u>Price</u>
1.	Surveying	\$ _____
2.	Jobsite preparation, excavation and backfill	\$ _____
3.	Finish Grading	\$ _____
4.	Equipment Foundations	\$ _____
5.	Turbine Generator/Condenser Foundation	\$ _____
6.	Sole Plates and Embeds	\$ _____
7.	Electrical Work	\$ _____

SPECIFICATION 40-0284
Turbine Pedestal
Solar One
Addendum No. 1

Bidder _____
Date _____

PROPOSAL REQUIREMENTS

B.1.2 Firm Unit Pricing for Extra or Deleted Work

Edison, at its discretion, may elect to alter the quantities indicated on the drawings and specified in the Specification. The Grand Total Price as stated in Section B.1 shall be adjusted according to the prices set forth below:

- 1. Excavate, Backfill and Compact \$ _____ /cu. yd.
- 2. Concrete Forming Erection \$ _____ /sq. ft.
- 3. Reinforcing Steel and Embeds \$ _____ /lb.
- 4. Concrete Placement \$ _____ /cu. yd.
- 5. Steel Erection \$ _____ /per lb.
- 6. Electrical Conduit, Ductbank, and Grounding \$ _____ /per ft.

B.2 TERMS OF PAYMENT

Bidder shall state the specific terms of payment proposed and a schedule of such payments. If specific terms of payment are not proposed, Edison may designate "net 30 days" as applicable.

B.3 TERMINATION CHARGES

Bidder shall provide a monthly schedule of charges for which Edison would be liable if Edison should terminate the Work pursuant to Section 8, at any time after issuance of the Purchase Order and until completion of the Work.

B.4 WORK SCHEDULE

The Work shall be completed on _____, as specified in Section 2.

B.5 LABOR CONTRACTS

Bidder shall list its present major labor contracts and the date of expiration for such contracts.

	/	
Contract		Date
	/	
Contract		Date

B.6 PROPOSAL EXPIRATION DATE

This proposal shall remain in force for a period of 90 calendar days from the day appointed on which bids are due.

SPECIFICATION 40-0284

Bidder _____

Turbine Pedestal

Solar One

Date _____

Addendum No. 1

PROPOSAL REQUIREMENTS

B.7 REPRESENTATION

The undersigned hereby declares, as Bidder, that the only persons or parties interested in this proposal as principals are those named herein; that this bid is made without any connection with any other person or persons making a bid for the same purpose; that this bid is in all respects fair and without collusion or fraud; Bidder shall perform the Work and all obligations of Bidder and shall complete the Work within the time specified therein; and shall accept in full payment therefor the prices named herein.

Date _____

Bidder

Bidder's License No.(s) and Classes
(if applicable)

Address and Telephone No.

By

Title

SPECIFICATION 40-0284
Turbine Pedestal
Solar One
Addendum No. 1

Bidder _____

Date _____

SOUTHERN CALIFORNIA EDISON COMPANY
Rosemead, California

SPECIFICATION 40-0284

TURBINE PEDESTAL AND MISCELLANEOUS FOUNDATIONS
SOLAR ONE GENERATING STATION

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The following Subsections are not applicable:

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GENERAL TERMS AND CONDITIONS

The parties agree to enter into a contract for Contractor to provide and for Edison to purchase the services specified in the Purchase Order of which these General Terms and Conditions are a part.

1. DEFINITIONS:

1.1 Apparatus: Edison's equipment on which the Work is to be performed by Contractor plus any parts furnished by Edison to Contractor for use in performing work.

1.2 Change Order: Document issued by Edison to Contractor to change the Purchase Order.

1.3 Contractor: The entity to which the Purchase Order is addressed and which performs the Work.

1.4 Edison: Southern California Edison Company

1.5 Edison Representative: An Edison employee designated by Edison to coordinate, expedite, inspect and approve the Work

1.6 Jobsite: Edison's property or public or private property for performance of the Work at Edison's direction.

1.7 Material: All equipment, materials, products, and supplies to be provided by Contractor as set forth in the Purchase Order

1.8 Purchase Order: Document issued by Edison to Contractor which authorizes the Work and incorporates by reference this set of General Terms and Conditions and other specifically referenced documents, with the following priority in the event of conflicting provisions: Latest Change Order, Purchase Order, these General Terms and Conditions, other referenced documents

1.9 Subcontractor: Either: An entity contracting directly with Contractor to furnish any part of the Work, or an entity contracting with Contractor's subcontractors of any tier to furnish any part of the Work

1.10 Work: All obligations of Contractor to be performed as specified in the Purchase Order, including Material and documentation.

2. SCHEDULE: Completion of the Work by the work completion date and furnishing of the documentation is essential to maintain the operating schedule for Edison facilities. If performance of the Work falls behind the schedule agreed to by the parties due to the fault of Contractor, Contractor shall accelerate its performance of the Work, at no charge in the price, until performance of the Work is commensurate with such schedule.

3. LABOR: Contractor shall comply with all existing Jobsite Work rules in performance of the Work at the Jobsite. Upon request, Contractor shall submit a copy of its labor agreements to Edison for review.

Contractor shall give to Edison prompt written notice of (i) every demand for collective bargaining (under the provisions of the Labor-Management Relations Act (LMRA) as amended) made upon Contractor or any Subcontractor by any labor organization as soon as such demand may come to Contractor's attention, and (ii) any labor dispute or anticipated labor dispute, which may reasonably be expected to affect the performance or the schedule of the Work.

If Contractor's employees, or any union representing such employees, breach the labor agreement between Contractor and such union, Contractor shall exercise all remedies to which it is entitled under State and Federal law. Further, if Contractor's employees or such union engage in jurisdictional disputes that affect the performance of the Work, or the work completion date, or Edison contractors, Contractor shall institute appropriate actions as required by the labor agreement between Contractor and such union and shall exercise all remedies to which it is entitled under Federal and state law. Nothing in this Section 3 shall limit or abridge Contractor's right to negotiate or execute such labor agreements on terms and conditions within Contractor's sole discretion. Edison reserves the right to provide Contractor with prefabricated equipment and neither Contractor nor Subcontractors shall disassemble or rework such prefabricated equipment unless so directed by a Change Order.

4. PERMITS, STATUTES AND CODES: The Work shall comply with the applicable requirements of all statutes, acts, ordinances, regulations, codes and standards as of the date of the Purchase Order. Edison shall obtain and pay for any required building or grading permit, or encroachment permit for a state highway. Contractor shall arrange and pay for any permit or inspection which may be required for performance of the Work.

5. PAYMENT:

5.1 Invoices: Contractor shall submit invoices as set forth in the Purchase Order and in sufficient detail to permit Edison to evaluate the reasonableness of all charges applicable to the Work.

5.2 Claims: For any claims against Edison for extra Work changes, or delays, notice of a claim shall be submitted to Edison within ten calendar days after completion of the related Work.

5.3 Time and Material Charges: For time and material Purchase Orders, the following shall apply:

5.3.1 Labor: The labor portion of the Work shall be paid at the hourly rates set forth in Purchase Order. Such rates shall include all related costs, including but not limited to, bare payroll costs, payroll additions, overhead costs, profit, small tools and personal supplies.

5.3.2 Material: All Material costs shall be paid by Edison as invoiced by the supplier to Contractor (including freight charges and applicable taxes) plus a percentage of such costs for all applicable handling costs as specified in the Purchase Order. No profit shall be allowed for Material costs.

5.3.3 Invoices: Contractor shall submit invoices monthly which include an itemization of (i) the labor hours by craft, the applicable rate, and the total dollar amount, (ii) the Material costs as invoiced to Contractor, plus applicable handling costs, and (iii) the total dollar amount. A copy of the supplier's invoice for Material shall be included. Edison reserves the right to audit all labor hours and Material invoices related to the Purchase Order.

6. CHANGES: Contractor shall perform additions, deletions, or changes to the Work as orally directed by the Edison Representative, or by a Change Order, at the applicable prices, rates, or reimbursable costs set forth in the Purchase Order. Contractor shall promptly notify Edison in writing if the work completion date, expenditure limitation, or prices are affected by such changes and an equitable adjustment of such provisions shall be authorized by a Change Order. Changes to the terms and conditions shall be made by mutual agreement and set forth in a Change Order.

7. SUSPENSION: The Edison Representative may orally direct Contractor to suspend performance of all or of any part of the Work at any time, and to resume performance of the Work. An equitable adjustment in the work completion date and price shall be confirmed by a Change Order if such suspension increases the cost of the Work.

8. TERMINATION: Edison may orally direct Contractor to terminate the Work at any time, which termination shall be confirmed by a Change Order. Any charges resulting from such termination shall be equitably negotiated by the parties. Edison, at its option, may take possession of any Material procured to date of termination if such costs have been paid or are included in the termination charges. The provisions of this Section 8 shall be Contractor's sole remedy resulting from such termination.

9. TITLE AND RISK-OF-LOSS: Title and risk of loss or damage to the Work shall pass from Contractor to Edison upon acceptance of the Work by Edison.

Contractor shall have risk of loss or damage to the Material, Edison-furnished components and Apparatus during the time that Contractor has custody of such items.

Title of the Work shall be free and clear of any and all liens and encumbrances whatsoever. If a lien of any nature is filed against the Work or Jobsite by any entity which has supplied Material or services at the request of Contractor or a Subcontractor, Contractor shall promptly, at its own expense, take any and all action necessary to cause any such lien to be released or discharged immediately. Edison shall, at all times, retain title to Edison-furnished components.

10. INSURANCE: With respect to liabilities arising out of performance of the Work at the Jobsite, Contractor shall maintain, and shall require that each Subcontractor maintain, insurance as described below. Such insurance shall not be terminated nor expire except on thirty days prior written notice to Edison. Contractor shall, and shall require its Subcontractors to, furnish certificates of insurance to Edison prior to performance of the Work.

(i) Workers' Compensation Insurance with statutory limits, as required by the state in which the Work is performed, and Employer's Liability Insurance with limits of not less than \$500,000. Contractor shall require that its carriers furnishing such insurance shall waive all rights of subrogation against Edison, its officers, agents, employees and other contractors and subcontractors.

5/30/79

Workers' Compensation Insurance shall include Longshoremen's and Harbor Workers' Act coverage, Jones Act coverage, and Outer Continental Shelf coverage, as applicable.

With respect to all Work performed in the State of Nevada, Contractor shall maintain Workers' Compensation Insurance with the Nevada Industrial Commission.

(ii) Comprehensive Bodily Injury And Property Damage Liability Insurance, including owner's and contractor's protective, product, completed operations, contractual and automobile liability, with a combined single limit of not less than \$500,000 for each occurrence. Such insurance shall (a) name Edison, its officers, agents, and employees as additional insureds, but only for Contractor's acts and omissions, (b) be primary for all purposes, and (c) contain standard cross-liability provisions. Any deductible from payments for claims shall be at Contractor's expense.

Contractor shall report immediately to the Edison Representative, and confirm in writing, any losses or damages incurred by Contractor or any of its Subcontractors, or its receipt or notice of any claim by a third party, or of any occurrence that might reasonably be expected to give rise to such claim in connection with or arising out of the Work.

If Contractor fails to comply with all of the insurance provisions of this Section 10, or causes such insurance to become uncollectible, Contractor shall indemnify and hold harmless Edison, and its officers, agents, employees, assigns and successors in interest from and against any and all liability, damages, losses, costs including attorney's fees and expenses, or any of them, resulting from the death or injury to any person or damage to any property, including property of Edison, to the extent caused by Contractor's non-compliance with this Section 10 or caused by the uncollectibility of such insurance.

11. CONSEQUENTIAL DAMAGES: Except as otherwise provided herein, Contractor shall not be liable to Edison for any consequential damages including, but not limited to, loss of or under-utilization of Edison facilities, loss of revenue, and claims of any customer of Edison, resulting from Contractor's performance or nonperformance of its obligations under the Purchase Order.

Edison shall not be liable to Contractor for any consequential damages including, but not limited to, loss of anticipated profits and loss of use of or under-utilization of Contractor's labor or facilities, resulting from Edison's performance or nonperformance of its obligations under the Purchase Order.

12. INDEMNITY: Contractor shall, at its own cost, defend, indemnify and hold harmless Edison, its officers, agents, employees, assigns, and successors in interest, from and against any and all liability, damages, losses, claims, demands, actions, causes of action, costs including attorney's fees and expenses, or any of them, resulting from the death or injury to any person or damage to any property, including property of Edison, to the extent caused by the negligence of Contractor, Contractor's agents, Contractor's employees, its Subcontractors or its Subcontractors' employees, or any of them, and arising out of the performance or nonperformance of its obligations under the Purchase Order.

Any tools, supplies, equipment or other items loaned from Edison to Contractor shall be done solely as a convenience to Contractor. Contractor agrees that such items are being loaned "as is," and Edison makes no representations as to the condition, suitability for use, freedom from defect or otherwise of such items. Contractor shall defend at its own cost and indemnify and hold harmless Edison, and its officers, agents, employees, assigns, and successors in interest, from and against any and all liability, damages, losses, claims, demands, actions, causes of action, costs including attorney's fees and expenses, or any of them, resulting from the death or injury to any person or damage to any property, arising out of any negligence or strict liability based on actual or alleged use, delivery or transportation of any and all loaned tools, supplies, equipment or other items having defects, or claimed to be defective.

13. ACCEPTANCE: Acceptance tests and inspections shall be performed by Edison within a reasonable period after Contractor has completed and released the Work to Edison. Edison may refuse to accept the Work, or any part thereof, not to be as specified in the Purchase Order. Contractor shall promptly correct such Work as approved by Edison.

14. WARRANTY: With the exception of non destructive examination and technical direction services, Contractor warrants that the Work shall be free from defects in workmanship, materials, and design unless of Edison's design, and shall conform to the requirements of the Purchase Order. Contractor shall, at its sole expense and promptly after notification and within one year after acceptance of the Work, correct or replace such defective Work as approved by Edison. Any transportation charges shall be at

Contractor's expense. Edison shall have the right to use such defective Work until it can be removed from service for correction or replacement, however, any additional damage resulting from such continued use shall be at Edison's expense. The warranty period for such corrected or replaced Work shall be one year starting upon acceptance of such Work.

For non-destructive examination or technical services Work, Contractor warrants that such services shall reflect Contractor's best professional knowledge, judgment and accepted industry practice. Contractor shall, at its sole expense and promptly after notification by Edison within one year after completion of such services, correctly reperform any nonconforming services.

15. UNCONTROLLABLE FORCES: Contractor shall not be liable for delay in the work completion date or inability to perform the Work, due to any cause beyond its reasonable control, such as strike, flood, fire, lightning, war, sabotage, act of a public enemy, earthquake, or material availability, provided that Contractor promptly notifies Edison in writing of the nature, cause, date of commencement and expected impact of the event and has exercised due diligence in proceeding to meet the work completion date. Edison shall extend the work completion date for an equitable period due to such causes, or request Contractor to accelerate the Work as set forth in Section 6, Changes.

16. NON-WAIVER: The failure of Edison to enforce any of the terms and conditions or to exercise any right or privilege in the Purchase Order shall not be construed as thereafter waiving any such terms and conditions or right or privilege. A waiver by Edison shall be by a Change Order.

17. GOVERNING LAW: The Purchase Order shall be interpreted, construed and governed under the laws of the State of California as if executed and to be performed wholly within the State of California.

18. ASSIGNMENT: Neither the Purchase Order nor any interest under it shall be assigned without the prior written consent of Edison. The Purchase Order shall not be deemed an asset of Contractor. If Contractor enters into any voluntary or involuntary receivership, bankruptcy, or insolvency proceedings, the Purchase Order may be cancelled at Edison's option upon written notice to Contractor.

19. SUBCONTRACTORS: Contractor shall at all times be responsible for the acts and omissions of Subcontractors and persons directly or indirectly employed by them. Nothing in the Purchase Order shall constitute any contractual relationship between a Subcontractor and Edison or any obligation on the part of Edison to pay, or to be responsible for the payment of, any sums to any Subcontractor.

20. NOTICES: Any legal notice pertaining to the Purchase Order shall be in writing and sent registered or certified mail, postage prepaid, to Edison or to Contractor, as appropriate, at their respective addresses appearing in the Purchase Order.

21. EMPLOYMENT PRACTICES: The employment practices printed on the back of the Purchase Order form shall apply.

22. CONTRACTOR'S LICENSE: When applicable, Contractor shall maintain a valid Contractor's License in the state in which the Work is performed.

23. ENTIRE AGREEMENT: The Purchase Order contains the entire understanding between Edison and Contractor as to the subject matter of the Purchase Order and merges and supersedes all prior agreements, commitments, representations and discussions between Edison and Contractor pertaining to the Purchase Order.

SUPPLEMENTAL REQUIREMENTS

2.7 WORK SCHEDULE

Within ten calendar days after award of Purchase Order, Contractor shall submit to the Engineer for approval two copies of its anticipated weekly Work schedule.

2.7.1 Weekly Work Schedule

The anticipated weekly work shall be in the form of a bar chart showing the order in which Contractor proposes to proceed with the Work. The schedule shall include the dates on which the following stages of Work are to begin and the estimated dates of completion of these individual stages. The bar chart schedule shall be clearly legible on a full size 11 in. x 17 in. chart.

1. Surveying.
2. Turbine generator and condenser foundation.
3. Miscellaneous foundation and anchorage.
4. Electrical equipment grounding and conduit.

The schedule shall be consistent in all respects with the time requirements described herein and in the Purchase Order and shall indicate the dates of Material acquisition and delivery to the Jobsite.

2.7.2 Progress Charting

Contractor shall enter on a copy of the bar chart schedule the actual progress of the work at the end of each week and shall submit the copy to the Engineer as directed.

2.8 DOCUMENTATION SUBMITTALS

All correspondence regarding Documentation Requirements, including drawings and submittals for review and approval, shall be sent to the address given in Section 2.5.

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2.8.1 As-Built (Record) Drawings

One complete set of design drawings shall be designated for mark-up purposes to depict field changes. Such field changes include alterations in routing of cable, conduit or piping to avoid interference; relocation of components and apparatus, such as structural changes. These deviations from original particulars of construction do not change the intent of the design or necessitate engineering redesign, but they require approval by the Engineer. Such changes shall be recorded on the "as-builts" set of design drawings as they are instituted. Light green pencil shall be used to indicate deletions; red to show additions and changes. The complete set of "as-built" drawings, fully marked-up, shall be submitted to the Engineer within one week after Acceptance of the Work by Edison.

END OF PART SECTION 2

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SUBSECTION 2A

SUPPLEMENTAL GENERAL TERMS AND CONDITIONS

The following sections constitute additions and changes to Section 1, General Terms and Conditions, of this Specification.

2A.1 SUPPLEMENTAL DEFINITIONS

2A.1.1 Edison

Southern California Edison Company and Department of Water and Power of the City of Los Angeles, acting through Southern California Edison Company as principal in its own behalf and as agent for Department of Water and Power of the City of Los Angeles, with Southern California Edison Company having an undivided 80 percent interest and Department of Water and Power of the City of Los Angeles having an undivided 20 percent interest in the Purchase Order.

2A.1.2 Material/Apparatus

The terms Material and Apparatus are synonomous as used throughout this Specification.

2A.2 INSURANCE

The insurance provisions in Section 10 of General Terms and Conditions are deleted in their entirety and superseded by the following:

2A.2.1 With respect to liabilities arising out of performance of Work at the Jobsite, Edison shall maintain, or cause to be maintained, for the benefit of Contractor and Subcontractors, excluding Subcontractors and suppliers making only deliveries or pick-ups, operators or renters of aircraft, and suppliers or manufacturers from whom only purchases are bein made, and consultants, the following types of insurance with limits as shown:

2A.2.1.1 Workers' Compensation Insurance with statutory limits, including All States Endorsement, and Employer's Liability Insurance with limits of not less than \$2,000,000. Workers' Compensation Insurance shall include Longshoremen's and Harbor Workers' Act coverage, Jones Act coverage, and Outer Continental Shelf coverage, as needed. Contractor and Subcontractors shall execute an assignment to Edison of all returned premiums, premium refunds, dividends, and other monies due or to become due to it or them in connection with such insurance.

workers' Compensation Insurance policies will normally be furnished to the named insureds prior to the time that Work is performed at the Jobsite.

2A.2.1.2 Comprehensive General Liability Insurance for each named insured issued in accordance with Edison's Master Insurance Program. The limits of insurance coverage for each insured shall be (i) primary insurance of

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\$1,000,000 for any one coverage, any combination of coverages, or all coverages combined, arising out of one occurrence, subject to a \$1,000,000 aggregate for each policy year, and (ii) excess coverage of \$9,000,000 combined single limit each occurrence, and an annual aggregate for each insured in excess of the above primary, subject to \$45,000,000 combined single limit each occurrence for all insureds under the Master Insurance Program in excess of the above primary.

For any property damage claims made against Contractor or Subcontractor, a deductible for the account of the Contractor or Subcontractor shall be: (i) \$5,000 each occurrence, if the loss or damage is recoverable under Edison's builder's risk insurance, or (ii) \$2,500 each occurrence, as respects all other loss or damage.

The completed operation hazard and products hazard insurance afforded hereunder for bodily injury and property damage liability shall continue in force for a period of two years after completion or Acceptance of the Work, whichever is the last to occur.

Edison shall add Contractor and Subcontractors as named insureds on such insurance, and such insurance policies shall be primary and non-contributing with any other insurance carried by the named insureds.

The insurer shall issue certificates of Comprehensive General Liability Insurance to the named insureds covering their liabilities, except as otherwise provided in the policy, arising out of injury, loss or damage suffered or incurred at or adjacent to the Jobsite, and injury, loss or damage occurring elsewhere resulting from operations, activities, incidents, or occurrences at the Jobsite.

The inclusion of more than one insured under such insurance shall not operate to impair the rights of one insured against another insured.

2A.2.1.3 All Risk, Builder's Risk Insurance for work at risk at Edison's facility; included in such work at risk is: (i) Edison's facility, (ii) the work at risk at the Jobsite, (iii) the Material that is to become part of the work, whether at or in-transit to the Jobsite, (iv) work performed by Edison Contractors which is at risk at the Jobsite, (v) material supplied by Edison and/or Edison Contractors that is to become part of the facility, whether at or in-transit to the Jobsite, and (vi) other items as may be allowed in the policies. Limits shall be not less than the value of the maximum probable loss of such work at risk, as determined by Edison at its sole discretion; provided, however, that such limits shall in no event exceed \$100,000,000 for all named and additional insureds each loss. The

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limits for damage by earthquake and flood and/or surface water shall be limited to: (i) the maximum probable loss determined pursuant to this Section per occurrence, and (ii) an annual aggregate for any one policy year of the maximum probable loss determined pursuant to this Section.

If a loss exceeding the maximum limits of such insurance occurs, the named and additional insureds shall share the proceeds of such insurance proportionately in accordance with the following formula:

$$\begin{array}{rcl} \text{Amount of} & & \text{Amount of Insurance} & & \text{Amount of} \\ \text{Insurance} & & \text{in Effect at the} & & \text{such Insured's} \\ \text{Recovered} & = & \text{Time of Loss} & \times & \text{Individual} \\ \text{by Each} & & \text{Sum of Losses for} & & \text{Loss} \\ \text{Insured} & & \text{all Insureds} & & \end{array}$$

A deductible of \$5,000 each loss shall be for the account of Contractor or Subcontractors, as appropriate. Any deductible amount in excess of \$5,000 shall be for the account of Edison.

Edison shall add Contractor and Subcontractors as additional insureds on such insurance.

2A.2.1.4 In the event of contemplated reduction in coverage or cancellation of any insurance referred to in Sections 2A.2.1.1, 2A.2.1.2 and 2A.2.1.3, Edison shall mail thirty days advance written notice of such contemplated reduction or cancellation to each named or additional insured at its or their address on file with Edison at the time of such notice. In the event of such contemplated reduction in coverage or cancellation, Edison shall use its best efforts to provide for the continuation of such insurance for Contractor and Subcontractors.

The named insureds shall not, by reason of its or their inclusion under the insurance referred to in Section 2A.2.1, incur liability for payment of premium for such insurance.

Following execution of the Purchase Order, Contractor shall notify Edison of the execution of any subcontracts with, or issuance of any purchase orders to, Subcontractors by Contractor, and upon such notice, the Subcontractors shall be notified by Edison of their inclusion in the insurance set forth in Section 2A.2.1. Absent receipt of such notice, Edison shall not have any obligation to provide the insurance set forth in Section 2A.2.1 to Subcontractors.

Contractor shall require all Subcontractors to certify that they have excluded from their subcontract price the cost of insurance for Workers' Compensation Insurance, Comprehensive General Liability Insurance, and All Risk, Builder's Risk Insurance.

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Contractor shall provide, and shall be responsible for requiring Subcontractors to provide, Edison with information necessary for administration of the insurance set forth in Section 2A.2.1, and Edison shall handle all insurance matters relating to Subcontractors directly with such Subcontractors.

2A.2.2 Contractor Provided Insurance

With regard to liabilities arising out of performance of the Work at the Jobsite, Contractor shall maintain and shall require each Subcontractor to maintain insurance as described below. Such insurance shall not be terminated nor expire except on thirty days prior written notice to Edison. Contractor shall, and shall require its Subcontractors to, furnish certificates of insurance to Edison prior to performance of the Work.

2A.2.2.1 Automobile Bodily Injury and Property Damage Liability Insurance with a combined single limit of not less than \$500,000 for each occurrence. Such insurance shall cover liability arising out of the use by Contractor and Subcontractors of owned, nonowned and hired automobiles in the performance of the Work at the Jobsite. As used herein, the term "automobile" means vehicles licensed or required to be licensed under the California Vehicle Code. Edison shall be named as additional insured on such insurance. Such insurance shall be primary for all purposes and shall be so endorsed, and any deductible from payments for claims shall be at Contractor's sole expense.

2A.2.2.2 Contractor shall report immediately to the Engineer, and confirm in writing, any losses or damages incurred by Contractor or any of its Subcontractors, or its receipt or notice of any claim by a third party, or of any occurrence that might reasonably be expected to give rise to such claim in connection with or arising out of the Work.

2A.2.2.3 If Contractor fails to comply with all of the insurance provisions of this Section 2A.2 or causes such insurance to become uncollectible, Contractor shall indemnify and hold harmless Edison, and its officers, agents, employees, assigns and successors in interest from and against any and all liability, damages, losses, costs including attorney's fees, and damages, to property and personnel of Edison, or any of them, to the extent such liability, damages, costs and losses would not have been incurred by Edison if Contractor had complied with this Section 2A.2 and had not caused such insurance to become uncollectible.

END OF SUBSECTION 2A

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SUPPLEMENTAL REQUIREMENTS

SUBSECTION 2B

JOBSITE REQUIREMENTS

2B.1 CONTRACTOR'S FACILITIES

Before proceeding with the erection of any construction facilities, including temporary structures, equipment, offices and warehouses, Contractor shall provide the Engineer with dimensions, descriptions, and proposed location of all such facilities, with capacities and capabilities of the equipment. The construction facilities shall be adequate for the purpose intended, and shall conform with the requirements of this Specification and all local and State regulations.

2B.2 IDENTIFICATION OF CONTRACTOR'S FACILITIES

2B.2.1 Identification of Equipment

When requested by Edison, all vehicles and construction equipment used by Contractor or Subcontractors on the Work shall be clearly marked with the Contractor's or Subcontractor's business title.

2B.2.2 Identification of Contractor's Employees

Edison will provide Contractors' and Subcontractors' employees on the Jobsite with serially numbered identification badges. These badges shall be returned to Edison on employees completion of the Work. Each employee shall wear his badge upon his person while at the Jobsite.

2B.3 SANITATION

All portions of the Work shall be maintained in a neat, clean, and sanitary condition at all times. Toilets shall be supplied by Contractor, where needed, for use of the employees on the Work. Their use shall be strictly enforced. Contractor's and Subcontractor's personnel shall not use the existing permanent restrooms.

2B.4 VISITOR'S LOG

If so required by the Engineer, Contractor shall maintain a visitor's log in which each visitor shall be required to sign his name, date, and purpose of visit. It shall be forwarded to the address given in Section 2.5 when the Work is completed.

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SUPPLEMENTAL REQUIREMENTS

2B.5 ACCESS AND PARKING

The Engineer shall indicate the access route to the Jobsite and the parking areas to be used by transport vehicles and all employees of Contractor. These directions shall be strictly adhered to and no other routes or areas shall be used without permission of the Engineer.

2B.6 UTILITIES

2B.6.1 Water

Edison shall not provide potable water. Water for industrial use is available at no charge only at the indicated well, Well "A", from a 3 inch line with pressure up to 190 psi. Contractor shall provide for transportation of its water requirements to the work site.

2B.6.2 Electric Power

Contractor will be assigned a location for an office trailer near the existing toilet facility and Edison transformer/switchgear location. Edison will provide a 480 volt, 3-phase breaker at the switchgear for power to the office trailer. Contractor shall furnish and install a step-down transformer at his trailer location and furnish and install direct buried cable from the breaker to his transformer. This same 480 volt, 3-phase breaker for the contractor's office trailer may also be used for power in the cooling tower area. Contractor shall be responsible for connecting power from the breaker to the work site. Rigid conduit, buried a minimum of 2 ft., shall be used between the breaker and any required transformer and panel at the work site. Location of transformer and panel shall be agreed to with the Engineer. Contractor shall furnish and install all electrical material beyond the breaker.

At the center core area work site, Edison will provide a 480 volts, 3-phase, 60 ampere breaker. The Contractor shall be responsible for connecting power from the breaker to the work site. Rigid conduit, buried a minimum of 2 ft., shall be used between the breaker and any required transformer and panel at the work site. Location of transformer and panel shall be agreed to with the Engineer. Contractor shall furnish and install all electrical material beyond the breaker.

All electrical work shall be performed by qualified electricians. Adequate protection shall be provided around transformers.

2B.6.3 Telephone

Edison shall not provide telephone service. Contractor shall make arrangements with the local telephone utility if telephones are desired.

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SUPPLEMENTAL REQUIREMENTS

2B.7 DUST CONTROL

Contractor shall make every reasonable effort to keep the amount of dust raised during the course of the work on the Jobsite and on haul and access roads to a minimum. Any methods known to be effective and which are approved by the Engineer shall be used. The measures employed shall not create a hazard or cause a nuisance to nearby residences, crops, the Work, or the operations of other contractors. No additional money shall be paid to Contractor for dust control. Petroleum products shall not be used for dust control.

2B.8 CLEAN UP

A. During progress of the work, Contractor shall keep the area occupied by it, and access to such areas, in a neat, clean and safe condition.

B. Upon completion of any portion of the work, Contractor shall promptly remove all rubbish and equipment, temporary structures, and surplus construction material not intended for future use at or near the same location during the later stages of the work.

C. Upon completion of the work, Contractor shall, at its own expense, satisfactorily dispose of or remove from the vicinity of the Work all rubbish, unused Material belonging to it or used in the performance of the work, and shall leave the premises in a neat, clean and safe condition.

D. Contractor shall make its own arrangements for trash bins and shall be responsible for the legal disposal of all trash debris, etc., at an offsite location.

2B.9 FIRE PROTECTION

Fire protection for Contractor's Material, facilities and equipment shall be furnished and maintained by Contractor. No fire protection equipment or personnel shall be provided by Edison.

2B.10 BORROW PIT AND WASHDOWN AREA

The location of the borrow pit and the washdown area shall be indicated by the Engineer. Contractor shall be responsible for providing water at the washdown area. washing and cleaning of equipment shall be done only at the washdown area.

The borrow pit/washdown area shall not be used for dumping of construction trash, debris or materials. Contractor shall make its own arrangement for trash bins and shall be responsible for the legal disposal of all trash, debris, etc. at an offsite location.

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SUPPLEMENTAL REQUIREMENTS

2B.11 FIRST-AID REQUIREMENTS

Contractor shall be responsible for conformance with CAL OSHA jobsite first-aid requirements. Edison will provide a nurse and a back-up ambulance in the event of commercial ambulance failure to respond.

An Edison safety inspector will be on-site periodically.

2B.12 JOBSITE RULES

The following Jobsite Rules shall apply to all personnel on the Jobsite.

- A. All employees are subject to lunch box, container or bundle inspection by the guards each time they leave the Jobsite and periodically upon entry.
- B. There will be NO vehicles driven into the construction site unless they are necessary to accomplish work related tasks. All vehicles will be subject to inspection upon entry and exit.
- C. Causes for removal of an employee from the site:
 - 1. Drinking or possession of intoxicating beverages on the Jobsite.
 - 2. Gambling on the Jobsite.
 - 3. Fighting on the Jobsite.
 - 4. Smoking in unauthorized areas.
 - 5. Possession of deadly weapons.
 - 6. Theft or damage of property.
 - 7. Illegal possession or use of illegal narcotics on the Jobsite.
 - 8. Permitting another to use your badge, or using another person's badge.
 - 9. Unauthorized removal of equipment.
- D. All employees entering or leaving the Jobsite will be logged on the gate register.
- E. All employees will wear a photo-identification badge in a conspicuous manner.
- F. Employees personal tools will not be removed from the Jobsite without an equipment/tool pass which will be issued and verified by owner's supervisor.
- G. Cameras will not be allowed on the Project Site without permission of the Edison Construction Superintendent.

END OF SUBSECTION 2B

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SUPPLEMENTAL REQUIREMENTS

SUBSECTION 2C

CONTRACTOR'S PERSONNEL REQUIREMENTS

2C.1 CONTRACTOR'S REPRESENTATIVE

Throughout the construction period, Contractor shall maintain a Jobsite office and have present at the site a representative who is empowered to speak and act for and on behalf of Contractor.

All written instructions, orders, or other communications delivered to Contractor's representative at the Jobsite shall be considered as having been delivered to Contractor's main office.

2C.2 SUPERINTENDENCE

Contractor shall provide, and maintain continually at the Jobsite, adequate and competent superintendence of all required operations. The superintendents shall be experienced in each type of construction required by this Specification; they shall be employees of Contractor, and approved by the Engineer. If, in the opinion of the Engineer, the safety, quality, or progress of the Work is being impaired by a shortage of Contractor's supervisory personnel, Contractor shall assign additional qualified personnel to the Work.

2C.3 PROGRESS MEETINGS

Unless waived by the Engineer, Contractor shall attend weekly progress meetings at the Jobsite. The participants shall include Contractor's principal representatives, Subcontractors' representatives, as appropriate, and the Engineer. The purpose shall be to review progress and schedule Work and deliveries of Material. The result to be desired from the progress meetings shall be to inform all concerned on the matters discussed and to obtain coordinated action that will best assure performance pursuant to the basic schedule.

2C.4 QUALIFICATIONS OF EMPLOYEES

Contractor shall employ only competent and skilled employees to do the Work. If Edison notifies Contractor that any employee on the Jobsite is, in its opinion, incompetent, disorderly, uses threatening or abusive language to any person on the Jobsite, or is otherwise unsatisfactory, the following steps shall be taken:

- A. Contractor shall review the circumstances which prompted Edison to notify Contractor of the problem.

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B. Upon completion of A, Edison and Contractor shall meet and determine whether (i) any further action is necessary, (ii) the employee is to be counseled regarding the problem or (iii) the employee is to be discharged.

C. The employee shall not be employed on the Jobsite again if discharged, except with the written consent of Edison.

END SUBSECTION 2C

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SECTION 3

TECHNICAL REQUIREMENTS

SUBSECTION 3.1 - WORK REQUIREMENTS

3.1.1 SCOPE OF WORK

Contractor shall provide all work and Materials, required to furnish and install the work as indicated on the drawings and as described herein.

3.1.2 ENVIRONMENTAL CONDITIONS AT JOBSITE

The Work shall perform in accordance with the requirements described in this Specification while subjected to the following environmental conditions:

- Elevation: Approx. 1970 ft. above sea level
- Ambient Dry Bulb Temperature Range: Approx. -19 to 130°F
- Wind: Average Max. 50 MPH
- Atmospheric Conditions: Normal desert conditions including rain, snow, blowing dust, and sand.

3.1.3 MAJOR ITEMS OF WORK BY CONTRACTOR

The major items of work to be performed by Contractor include, but are not limited to, furnishing and installing of the following:

- A. Surveying, as required for this work.
- B. Jobsite preparation, structural excavations, and finish grading.
- C. Furnish and install miscellaneous foundations, embeds, and anchorage as indicated on the drawings.
- D. Installation of miscellaneous electrical conduit and grounding.
- E. Construction of Turbine Generator/Condenser foundation.

3.1.4 MATERIAL FURNISHED BY CONTRACTOR

Contractor shall furnish all required Material to complete the work.

3.1.5 MATERIAL AND INSTALLATION QUALITY

All Material shall be new and as specified herein.

Material and workmanship shall be in accordance with local codes and ordinances of legally constituted authorities. Except where provisions of this Specification exceed such requirements, this Specification shall govern.

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WORK REQUIREMENTS

3.1.6 CLOSING IN OF UNINSPECTED WORK

A. Contractor shall not allow nor cause any of its Work to be enclosed or covered up until it has been inspected, tested, and approved by the Engineer and all legally constituted authorities having jurisdiction.

B. Should any of its Work be enclosed or covered up before such inspection and test, Contractor shall uncover the Work and, after it has been inspected, tested and approved, Contractor shall make all repairs with like Materials necessary to restore all Work to its original condition.

3.1.7 VERIFICATION OF EXISTING CONDITIONS

Maps, soils investigation reports, and similar reference data not included as part of the Purchase Order, but made available to Contractor by Edison, are for information only. Edison assumes no responsibility for any conclusions drawn therefrom. Contractor shall examine the Jobsite and determine all existing conditions under which the Work shall be performed including subsurface conditions.

3.1.8 EXAMINATION OF DRAWINGS

Contractor shall carefully study the drawings and specifications. If any of the Work as laid out or specified is contrary to, or conflicts with any of the other trades or ordinances, same shall be reported to the Engineer at once. The Engineer shall then instruct Contractor how to proceed.

3.1.9 CONTRACTOR'S RESPONSIBILITY

A. Contractor shall provide temporary walks, rails, guards, construction fences, and similar safeguards, as required by an ordinances or as directed by the Engineer, or as necessary to protect the public, Edison employees, and its workers from the time that Work is initiated until Acceptance.

B. During the course of the Work, if damage occurs through Contractor's negligence to any existing public or private property, Contractor shall be liable for all expenses for repair and for value of lost commodity. Contractor shall provide for or perform immediate repair of such damaged facilities to the satisfaction of the utility authority having jurisdiction.

3.1.10 PROTECTION OF MATERIAL

A. Contractor shall be responsible for the care, custody and protection of its equipment and all Material on the Jobsite until Acceptance of the completed work by Edison.

WORK REQUIREMENTS

B. Contractor shall provide all temporary storage rooms and shops that it may require at the Jobsite for the safe and proper storage of its Materials, tools, etc. These rooms shall be constructed only in locations approved by the Engineer and shall in no way interfere with the progress of the Work.

C. At such times as these rooms interfere with the proper installation and completion of the Work, they shall be removed by Contractor, at its own expense, within three days after having been notified by the Engineer that such removal is necessary.

D. Contractor shall replace, at no expense to Edison, any damaged or stolen Material or Material deemed unsatisfactory for use in the Work as determined by the Engineer.

3.1.11 TESTS

A. Edison shall perform the following tests at no expense to Contractor:

1. Soil compaction tests.
2. Concrete slump and air content tests.
3. Compression testing of concrete cylinders.
4. Grout testing.

B. Contractor shall perform all other tests.

3.1.12 INSPECTIONS

A. Contractor shall be responsible for arranging all inspections of the Work with the appropriate agencies having jurisdiction.

B. Edison will be performing inspections in addition to other agencies.

C. Contractor shall submit written notification to the Engineer at least 24 hours in advance of all agency inspections.

3.1.13 SURVEYING

A. Survey bench marks are present at locations in the immediate vicinity of this work for Contractor's surveying requirements.

B. Contractor shall perform all surveying Work required to establish all grades, points, lines, bench marks, and elevations required for this Work and be responsible for same.

WORK REQUIREMENTS

C. Contractor shall establish and shall make all required surveys for all boundary lines for fixing and locating all column centers, piers, walls, pits, trenches and otherwise fully and completely laying out all Work required by the Purchase Order.

D. Contractor shall be responsible for obtaining all reference data necessary to perform and complete the survey Work.

E. Within 30 days after completion of the survey Work, all data obtained shall be submitted to the Engineer.

3.1.14 DOCUMENTATION SUBMITTAL SCHEDULE

Table 3-1, Documentation Submittal Schedule, is a compilation of submittals to be submitted by Contractor to Edison as required by this Specification.

3.1.15 CONCURRENT WORK OF OTHERS

Edison shall undertake and award other work which will be performed concurrently with this Work. Contractor shall cooperate fully with the Engineer in coordinating project activities so as to minimize interference with or delay of the work of others, and to assure orderly and expeditious performance and completion of the project as a whole. Contractor shall anticipate that its Work may be interfered with and temporarily delayed from time to time because of the concurrent performance of work by others, and Contractor shall fully cooperate with other contractors to minimize delay or hindrance of work. The Engineer shall assist with scheduling and planning among contractors to facilitate attainment of the overall objectives for the timely completion of the work. Should any conflicts occur, the Engineer may direct that Contractor's operations be modified.

3.1.16 EMERGENCY PHONE NUMBER

Contractor shall provide the Engineer with its home phone and office phone numbers for emergency contacting during nonworking hours.

SUBSECTION 3.2 - SITE WORK

Part 3.2A
Earthwork

DESCRIPTION

3.2A.1 SCOPE OF WORK

A. Contractor shall provide all Work required to perform the earthwork as indicated on the drawings and described herein.

B. Work to be performed includes everything necessary for and incidental to site preparation. Contractor shall perform all surveying required to develop final, finish grades as required to the desired finish elevations. Contractor shall assume all responsibility for furnishing, correct placement, compaction, and transportation to and from the Jobsite for all earth required by the work specified herein and the existing site conditions.

C. Existing structures and utilities, particularly overcrossing electrical duct banks, shall be adequately protected and supported. Suitable barricades or warning lights shall be provided to protect normal vehicular or foot traffic adjacent to open excavations, per OSHA requirements.

D. The sides of all foundations excavations or trenches 5 feet or more in depth shall be excavated in accordance with OSHA regulations. Materials used for sheeting, shoring, and bracing shall be in accordance with OSHA requirements.

3.2A.2 CODES AND STANDARDS

Work shall be performed in compliance with the following codes and standards, as amended to the date of this Specification, which are hereby made a part of this Specification.

Uniform Building Code (UBC) 1979 Edition

Chapter 29 - Excavations, Foundations and Retaining Walls

American Society for Testing and Materials (ASTM)

ASTM D 1556 - Test for Density of Soil in Place by the Sand-Cone Method

ASTM D 1557 - Test for Moisture - Density Relation of Soils, Using 10 lb. (4.5 kg) Rammer and 18 in. (457 mm) Drop

ASTM D 2922 - Test for Density of Soil and Soil-Aggregate in Place of Nuclear Methods (Shallow Depth)

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EARTHWORK

MATERIAL

3.2A.3 SELECT GRANULAR FILL MATERIAL

Native material may be used as backfill material provided that all debris and cobbles larger than three inch are removed prior to placement.

EXECUTION

3.2A.4 EXCAVATION, GENERAL

Contractor shall perform excavation of every type of material encountered within the limits of the Work to the lines, grades and elevations indicated on the drawings. Grading shall be in conformance with the drawings. Satisfactory excavated material may be transported to and placed in fill or embankment areas within the limits of the site, approved by the Engineer.

Discrepancies in finished grade elevations in excess of the allowable tolerances shall be corrected by Contractor at his expense.

Unsatisfactory excavated material shall be disposed of by Contractor in areas designated by Engineer. During construction, excavation and filling shall be performed in a manner and sequence that will provide drainage of surface runoff at all times.

3.2A.5 STRUCTURAL EXCAVATION

The Work to be performed consists of structural excavation of every type of material encountered within the limits of the Work, to the lines, grades and elevations shown on the design drawings and as specified herein. Grading shall be in conformity with the sections shown.

Structural excavation shall not exceed 0.50 feet below the elevations indicated on the drawings unless otherwise determined by Engineer. Over-excavation must be backfilled to the satisfaction of Engineer.

Excavation in open cut for minor concrete structures such as electrical ducts, drains, culverts, catch basins or other designated similar cut slopes as shown on the drawings shall be made so that concrete can be placed directly against the undisturbed excavated surface, providing the surfaces of the excavation are firm and compact and will stand without sloughing. All points of excavation shall be outside the concrete lines shown on the drawings.

3.2A.6 LINES AND GRADES

Structural excavations shall conform to the lines and grades shown on the drawings and, where required, shall extend a sufficient distance to allow for forms installation of services and inspection.

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3.2A.7 TRENCH EXCAVATION

A. Over-excavation below the lines and grades shown on the design drawings shall be backfilled with suitable sand and recompactd to a minimum of 90% of the maximum density determined by ASTM D1557.

B. Pipe trench walls shall be kept as near vertical as possible from the bottom of the trench to at least two feet above the top of the pipe. The bank of the trench from two feet above the top of the pipe to the normal ground surface shall be sloped as indicated on the drawings, or shall be traced.

C. Contractor shall perform all trenching and excavation of whatever materials are encountered to the depths and widths indicated on the design drawings or specified; remove from the site all excavated materials not suitable for backfill and dispose of them at proper disposal sites selected and arranged for by Contractor and approved by the Engineer; grade to prevent surface water from flowing into trenches or other excavations; remove any accumulated water before conduit is placed or backfilling is begun.

3.2A.8 DISPOSAL OF MATERIALS

Disposal of material shall be at the direction of Engineer.

3.2A.9 STRUCTURAL BACKFILL

Backfill material adjacent to foundations, footings, walls and similar structures below grade, beneath all concrete floor slabs on grade and where noted on the design drawings shall be approved by Engineer prior to placement.

A. All excavations to be backfilled shall be cleaned of all shoring materials, trash and debris prior to placing backfill, and no such materials shall be included in the backfill.

B. Backfill shall not be placed until the structural footings or other portions of the structure or facility have been inspected by Engineer. For foundations and footings, the backfill may be placed after a length of cure of seven days.

C. All structural backfill shall consist of "suitable material" as designated by the Engineer.

D. Backfill material shall be placed horizontal, uniform layers not exceeding eight inches in thickness, before compaction, unless otherwise specified in this Specification.

E. Backfill placed within 18 in. of finished grade shall be selected material that contains no rocks or hard lumps greater than 3 in. in size and swells less than 3% when tested in accordance with UBC Test Method 29-2.

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EARTHWORK

F. Backfill against structures that have been waterproofed shall be done so as not to damage the waterproofing or the protective material that has been previously applied.

G. Backfilling of pipe trenches shall not commence until the pipe therein has been inspected, tested and approved by the Engineer. After the section is approved for backfilling, a granular fill shall be placed in 6-inch layers before compaction. This method shall be continued until the material is 12 inches over the top of the pipe. Placing backfill into the trench remaining shall not be done until the first 12 inches of filling and field compacting has been completed. Filling and compacting with backfill shall continue in 8-inch uncompacted lifts along the section trench.

3.2A.10 COMPACTION

A. All areas to be graded, both natural ground and areas to receive additional fill, shall be rolled and compacted to the density specified. All area not specified shall be compacted to a minimum of 90% of the maximum density as determined by ASTM D 1557, unless otherwise specified by the Engineer.

B. All backfill shall be native material free from debris, except as noted on the drawings.

C. Fill material shall be compacted to the minimum shown on the drawings or as specified below:

1. Maximum density shall be determined in accordance with ASTM D 1557.

2. Density of soil in place shall be determined in accordance with ASTM D 1556 or ASTM D 2922.

3. Testing to determine moisture-density relations and degree of compaction shall be performed at no cost to Contractor by a testing agency retained by Edison.

4. Compaction of structural backfill by ponding and jetting methods shall not be permitted except as approved by Engineer in confined areas such as pipe and electrical trenches and manholes. Concrete vibrators may be used together with the ponding operation in order to achieve the required compaction densities. Motorized hauling or compaction equipment shall not approach so close as to cause damage or permanent displacement. Hand compactors shall be used in those areas such as, but not limited to, at bottom of pipes which are too restricted for motorized equipment.

EARTHWORK

3.2A.11 GRADING

The graded surfaces shall be reasonably smooth, compacted and free from irregular surface changes and areas where ponding of runoff could occur.

3.2A.12 ACCEPTANCE

Acceptance of the Work shall include a visual inspection of the Work, evaluation of applicable test results and all Work performed to the satisfaction of the Engineer.

END PART 3.2A

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SUBSECTION 3.2 - SITEWORK

Part 3.2B Trenching, Excavation, and Crossings

DESCRIPTION

3.2B.1 SCOPE OF WORK

Contractor shall furnish all Work, Materials, and equipment necessary for trenching, shoring, and excavations for the piping and appurtenant Work.

In areas where removal of surfacing and foundation materials, such as asphaltic paving and concrete, are required for trenching operations, Contractor shall remove all such materials from the Work area prior to start of trenching operations. These materials shall not be allowed to comeingle with the soil or be placed in the trench backfill.

3.2B.2 DEPTH AND WIDTH OF TRENCHES

Where the depth of trench is increased to clear obstructions not indicated on the drawings, such length and amount of excess depth shall be specifically authorized, in writing, by the Engineer.

No trenching in excess of nor wider than indicated in the drawings shall be performed without the written authorization of the Engineer.

3.2B.3 CODES AND STANDARDS

All work shall be performed in compliance with the following codes and standards, as amended to the date of this Specification, which are by reference made a part of this Specification.

State of California Water Quality Control Board
U.S. Army Corps of Engineers
Standard Specifications for Public Works Construction - 1976 Edition

EXECUTION

3.2B.4 TRENCHING AND EXCAVATION

A. Contractor shall perform all trenching and excavation of whatever materials are encountered to the depths and widths indicated on the drawings or as specified. Contractor shall remove from the site of the Work and dispose of all excavated materials not suitable for backfill. Grade to prevent surface water from flowing into trenches or other excavations. Remove any accumulated water before piping is placed or before start of backfilling operations.

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TRENCHING, EXCAVATION, AND CROSSINGS

B. Trenching and excavation shall include the removal of all water and materials of any nature which interfere with the Work. Sheeting used to support the excavated trench shall be removed by Contractor, and no such sheeting will be permitted to remain in the trench except when, in the opinion of the Engineer, field conditions or the type of sheeting or methods of construction used by Contractor, such as the use of concrete bedding, are such as to make the removal of sheeting impracticable. In such cases the Engineer may permit portions of the sheeting to be cut off and remain in the trench. Excavation for utilities shall be by open trenches unless otherwise specified or shown on the drawings. Where it becomes necessary to excavate beyond the limits of normal excavation lines in order to remove boulders or other interfering objects, the voids remaining after the removal of boulders shall be backfilled as hereinafter specified, or as otherwise approved by the Engineer.

1. When the void is below the subgrade for the pipe bedding, suitable fill earth, as defined in Earthwork of this Specification, shall be placed and compacted to relative density of not less than 90%.

2. When the void is in the side of the trench, suitable earth or sand shall be placed and compacted or consolidated, as approved by the Engineer, to a relative density of not less than 90%.

3. Removal of all boulders, other interfering objects, and the backfilling of voids left by such removals shall be at the expense of Contractor.

C. Contractor shall verify dimensions shown on drawings; set and maintain grade stakes, establish subgrade or finish elevations; determine location and depth of excavation and fills and excavate trenches wide enough for proper installation of all Work. Bottom of trenches shall be thoroughly compacted free of loose stones.

D. Trench to the minimum necessary width for the proper installation of the pipeline, with sides as nearly vertical as possible. Accurately grade the bottom to provide uniform bearing for the piping being installed. Dig bell holes and depressions for joints after the trench has been graded in order that the pipe will rest uniformly upon the prepared bottom of the trench. Except where rock is encountered, do not excavate below the depth indicated or specified. Where rock is encountered, excavate it to a minimum overdepth of 4 inches below the trench depth indicated or specified. Backfill overdepths in rock and authorized overdepths with loose granular earth or sand, thoroughly tamped and compacted to relative density of not less than 90%.

3.2B.5 ACCEPTANCE

Acceptance of the completed Work shall include all phases of the Work performed to the satisfaction of the Engineer.

END PART 3.2B

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SUBSECTION 3.3 - CONCRETE

Part 3.3A Concrete Formwork

DESCRIPTION

3.3A.1 SCOPE OF WORK

Contractor shall provide all Work and Material required to furnish and install the concrete formwork and shall be responsible for installing concrete forms to ensure the placed concrete conforms accurately to the dimensions indicated on the drawings and as described herein.

3.3A.2 CODES AND STANDARDS

The work shall comply with the following codes and standards, as amended to the date of this Specification, which, by reference, are hereby incorporated into this Specification:

American Concrete Insititute (ACI)

ACI 347, Recommended Practice for Concrete Formwork.

ACI 301, Specification for Structural Concrete for Buildings.

West Coast Lumber Inspection Bureau (WCLIB)

Standard Grading and Dressing Rules.

MATERIAL

3.3A.3 FORM LUMBER

A. Form lumber for exposed concrete surfaces shall be form grade, five-ply plywood, 3/4-inch thick, in widths and lengths adequate to achieve joint layouts indicated on the drawings.

B. Sheathing boards for concealed concrete surfaces shall be Douglas fir, No. 2 sheathing, one- by six-inch, or better, as required to sustain imposed loads on the formwork.

C. Modular, plastic covered, or other type forms may be used only upon approval by the Engineer.

3.3A.4 TIES

Sure-Grip, Universal Twisteyes, Richmond Snap-Type or an Engineer approved equal.

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CONCRETE FORMWORK

EXECUTION

3.3A.5 WEATHER PRECAUTIONS

Formwork shall not be started or proceed during weather which may be detrimental to the Work or Material.

Wet areas or surfaces to receive the Work shall be properly dried before proceeding.

3.3A.6 PLACEMENT OF INSERTS

Properly locate and secure to the forms all anchor bolts, structural members, piping, and conduit to be embedded in concrete. Suspend anchor bolts from substantial templates and rigidly attach to the forms by means of double nutting to ensure that they will not be dislocated during placement of concrete. Steel templates shall be used to set all anchor bolts associated with the Turbine Generator foundation. Form recesses, seats, pockets, reglets, and rebates required to receive frames, hardware, saddles, and other details in accordance with precise positions and dimensions obtained directly from the trades furnishing the Work to be received.

All embedded items shall be inspected by the Engineer prior to placing concrete.

3.3A.7 BRACING AND SHORING

Shoring and bracing shall be adequate in strength, and shall be so designed and placed that the load from successive parts of the structure will be transmitted directly through the falsework without creating deflections, and bending or shearing stresses in the concrete. Shores shall be constructed in such a manner that they can be taken down without injury to the structure.

3.3A.8 CLEANING AND LUBRICATION

Before use, thoroughly clean and lubricate all forms with a nonstaining mineral oil. This shall be done before reinforcing steel is placed. Wipe off excess oil after lubrication.

3.3A.9 CONSTRUCTION OF FORMS

Construct forms in a substantial, unyielding, true-to-line, level manner, sufficiently tight to prevent the leakage of mortar. They shall conform accurately to the dimensions indicated for the finished concrete. Place the finished side of the wood toward the concrete. Place chamfer strips, as indicated on the drawings in the angles of all forms to bevel the sharp edges of the concrete. Stud spacing for plywood forms shall not exceed 12 inches center-to-center, unless otherwise indicated on the drawings.

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CONCRETE FORMWORK

Special care shall be taken in constructing the forming associated with the Turbine Generator/Condenser foundation in order to ensure extreme accuracy in the final dimensions of the finished concrete.

3.3A.9.1 Joints

Horizontal joints shall be made exactly flush. Vertical joints of plywood and boarding shall be staggered.

3.3A.10 REMOVAL OF FORMS

Removal of forms shall comply with the requirements of ACI 347 and ACI 301.

END OF PART 3.3A

CONCRETE REINFORCEMENTS

MATERIAL

3.3B.4 REINFORCING STEEL

- A. Reinforcing bars shall be new billet steel, deformed bars, Grades 40 and 60 as indicated on the drawings, conforming to ASTM A 615. Steel shall be clean, free from rust, flaws, cracks, excessive mill scale, paint, oil, grease, or other deleterious matter which could reduce bond.
- B. All reinforcing bars which are to be spliced by mechanical means, as indicated on the Edison design drawings, shall comply with the following:
1. Longitudinal spacing of deformations shall not exceed 0.75 times the ASTM maximum allowable.
 2. Deformation base width shall equal 3 times ASTM minimum deformation height.
 3. Contractor shall ensure that bar ends to be mechanically spliced can be inserted without difficulty into Cadweld "T" series splice sleeves.

3.3B.5 MECHANICAL SPLICES

- A. All Material shall be of the Cadweld type as manufactured by Erico Products Incorporated, 34,600 Solon Road, Cleveland (Solon), Ohio 44139, or an Engineer approved equivalent. Material shall be new, shall meet the requirements of this Specification, and shall be subject to the approval of the Engineer.
- B. Material for T-series splice sleeves shall meet the requirements of ASTM A 519.
- C. Shear strength of the filler metal shall be equal to or greater than the shear strength of the reinforcing steel specified.
- D. Material shall be packaged and stored in such a manner as to maintain all items in a clean, dry condition in accordance with manufacturer's recommendations.

CONCRETE REINFORCEMENTS

EXECUTION

3.3B.6 FABRICATION

A. Steel reinforcement shall be fabricated in accordance with ACI 315. Before placement, all steel shall be cleaned of loose mill scale, excessive rust, oil, and coatings which could reduce bond. Reinforcements shall be accurately positioned and secured against displacement during placing and vibration of concrete.

Bars shall be securely tied at intersections with No. 16 gauge annealed wire. Reinforcement shall be provided and placed as detailed on the drawings.

3.3B.7 INSTALLATION OF MECHANICAL SPLICES

A. Installation of mechanical splices shall be completed in accordance with the manufacturer's requirements.

B. Contractor shall arrange, at its own expense, for a technician from the manufacturer, experienced in exothermic splicing of reinforcing bar, who shall be present at the Jobsite at the outset of the Work to demonstrate the equipment and techniques used for making quality splices. The technician shall be present to observe and verify that the equipment is being used correctly and that quality splices are being obtained.

C. Inspection of the finished splice shall be visual. The splice has been properly made if sound filler metal is present at both ends of the splice sleeve and at the sleeve entry port.

D. Acceptance of mechanical splice shall be based upon the void limits stipulated by the manufacturer's installation manual.

E. All costs involved for installation, removal, testing, and replacement of splice sleeves furnished by the manufacturer that are found to be defective shall be at the expense of the Contractor.

END OF PART 3.3B

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CONCRETE

3.3C.7 WATER

Water for mixing concrete shall conform to ASTM C 94, Section 4.1.3.

3.3C.8 AIR ENTRAINING ADMIXTURE

The air entraining admixture used shall conform to ASTM C 260.

3.3C.9 SLUMP AND AIR ENTRAINMENT REQUIREMENTS

Unless otherwise noted or allowed by the Engineer, the slump and air entrainment of concrete at time of placement shall be as follows:

	<u>Slump</u>		<u>Air Entrainment</u>
	<u>Maximum</u>	<u>Minimum</u>	
Reinforced Foundation, Walls and Footings	3 in.	1 in.	6% ± 2%

Testing shall conform to the requirements of ASTM C 148, 143 and/or 231 as applicable. Samples for slump and air content shall be taken prior to placement in accordance with the requirements of ASTM C 94, Section 14. A minimum of one test for each concrete class shall be taken each day concrete is delivered to the Jobsite. Concrete which exceeds these values by $\pm 1/2\%$ for air content and $\pm 1/2$ inch for slump shall be rejected and replaced at Contractor's expense.

3.3C.10 POZZOLAN OR FLY ASH ADMIXTURE

Pozzolan or fly ash shall conform to ASTM C 618. The amount of pozzolan or fly ash replacing cement shall be limited to a maximum of 15% in weight. If fly ash is used, moist curing techniques shall be employed, unless otherwise approved by the Engineer.

3.3C.11 WATER REDUCING ADMIXTURE

Water reducing admixture shall be Pozzolith 300 manufactured by Masterbuilder Co., or an Engineer approved equivalent product, tested in accordance with ASTM C 494, Type A requirement. Quantity of admixture shall be based on manufacturer's recommendation.

3.3C.12 TURBINE GENERATOR FOUNDATION

The following are the special concrete mix design requirements for the Turbine Generator/Condenser foundation.

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<u>f'c (psi)</u> <u>At 28 Days</u>	<u>Water/Cement</u> <u>Ratio</u>	<u>Max. Aggregate</u> <u>Size (inches)</u>	<u>Max. Slump</u> <u>(inches)</u>	<u>Air</u> <u>Entrainment</u>
4000	≤ 0.45	*1-1 1/2	3 inches	5 ± 1%

*It is preferred that Contractor use the maximum aggregate size possible.

3.3C.13 MIX DESIGN

A. Contractor shall be responsible for performing all operations and incidentals necessary to prepare concrete mix designs conforming to the requirements specified herein, and meeting the minimum compressive design strengths, f'c, specified on the drawings.

B. Contractor shall submit to the Engineer a written request for approval of the proposed concrete Materials and the laboratory designed concrete mixes. This submittal shall include all test results and certificates of compliance to qualify the Materials and to establish the mix designs. No concrete shall be placed until Contractor has received such approval in writing. Concrete mix shall not change during the course of construction without prior approval by the Engineer.

C. Field compressive test specimens shall be made and cured in accordance with ASTM C 31, and tested in accordance with ASTM C 39 by Edison's Representative. Minimum compressive strength shall be as specified on drawings. Samples for tests shall be obtained by Edison's Representative by methods described in ASTM C 94, Section 16. Acceptability of concrete shall be based upon test results specified for "ultimate strength" method in ASTM C 94, Section 16.5.2. A minimum of three samples of each concrete class shall be taken and tested for each day concrete is delivered to the Jobsite.

EXECUTION

3.3C.14 PREPARATION OF BASE SURFACES

Earth surfaces shall be cleaned of all foreign matter and loose particles. Any free water that may be present in the forms shall be removed before placement of new concrete. Absorbent surfaces shall be just sufficiently wetted to prevent appreciable absorption of moisture from the freshly placed concrete.

3.3C.15 DELIVERY

The intervals between deliveries for placement shall not exceed 60 minutes. Each batch of concrete delivered to the Jobsite shall be accompanied by a delivery ticket with all information specified in ASTM C 94, Section 15, Items 15.1.1 thru 15.2.8. Delivery tickets shall be submitted to the Engineer at time of delivery and shall become the property of Edison.

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CONCRETE

3.3C.16 TEMPERATURE CONSIDERATIONS

3.3C.16.1 Cold-Weather Precautions

The concrete shall be maintained at a temperature not lower than 50°F for at least 72 hours after it is placed. No additional protection from freezing will be required if that temperature is maintained for that length of time by means of approved insulation in contact with the former concrete surfaces. Removal of protective measures against freezing temperatures shall be subject to the approval of the Engineer. In general, foundation forms can be stripped 24 hours after concrete is placed when the conditions specified are maintained. Contractor shall supply an approved thermometer and shall use it to verify the temperature of concrete.

3.3C.16.2 Hot Weather Precautions

During hot weather, concrete shall be placed in accordance with ACI 305 in addition to the following requirements.

A. Temperature Control

The temperature of concrete when placed shall not exceed 70°F. Contractor shall employ effective means to maintain the temperature of the concrete within the specified limits, such as precooling aggregates and mixing water, using ice chips as a part of the mixing water, providing shade for aggregates, and placing at a time of day when ingredients will not produce concrete temperature over 70°F.

3.3C.17 PLACEMENT

Concrete shall be proportioned, mixed, placed, and finished in such a manner as to provide freedom from honeycomb, segregation, and other defects of workmanship.

Concrete shall be placed about reinforcement in such a manner as to prevent separation of the coarse aggregate from the mortar or displacement of the reinforcement or imbeds. All reinforcement shall be thoroughly embedded.

The addition of water at time of placement to increase workability shall not be allowed for the Turbine Generator foundations.

CONCRETE

3.3C.18 JOINTS

3.3C.18.1 Construction Joints

At all construction joints, the surface of previously placed and hardened concrete shall be thoroughly cleaned of all laitance and foreign matter before new concrete is added. A bonding agent approved by the Engineer shall be applied to previously placed concrete prior to adding new concrete associated with the Turbine Generator foundation.

3.3C.19 FINISHING AND CURING

3.3C.19.1 Finishing

Finishing of concrete slabs shall be based on the recommendations of ACI 302. Nonskid surfaces shall be provided on the Turbine Generator foundations basement and deck horizontal surfaces exposed to foot traffic.

Concrete shall be finished within ten minutes of being placed. Retamping after finishing shall not be permitted. Maintain level and plastic mass with minimum flow. Maintain position of all reinforcement.

3.3C.19.2 Curing

Forms supporting concrete shall be kept continually wet for not less than seven days. As soon as unformed surfaces of concrete have hardened sufficiently to prevent damage by curing, an intermittent fine spray of water shall be applied as necessary to keep such surfaces continually moist for not less than seven days. The use of alternative curing techniques shall be approved by the Engineer prior to placement of concrete.

3.3C.20 TOLERANCES

Tolerances shall be based on the recommendations of ACI 347.

3.3C.21 REPAIR OF DEFECTIVE WORK

At the discretion of the Engineer, any concrete that has insufficient strength, is improperly formed, contains rock pockets, or is otherwise defective, shall be repaired or shall be removed and replaced, as required, at Contractor's expense. Method of repair and proposed Materials to be used shall receive prior approval by the Engineer.

3.3C.22 ACCEPTANCE

Acceptance of the completed work shall include Engineer receiving all submittals and all phases of the work performed to the Engineer's approval.

END PART 3.3C

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SUBSECTION 3.3 - CONCRETE

Part 3.3D

Epoxy

DESCRIPTION

3.3D.1 SCOPE OF WORK

Contractor shall furnish all Work, Material, tools and equipment necessary to perform the epoxing of construction joints as specified herein and indicated on the drawings.

3.3D.2 CODES AND STANDARDS

All Work and Material shall be in compliance with the following codes and standards, as amended to the date of this Specification, which are by reference made a part of this Specification:

American Concrete Institute (ACI)

- ACI 503.1 - Standard Specification for Bonding Hardened Concrete, Steel, Wood, Brick, and Other Materials to Hardened Concrete with a Multi-Component Epoxy Adhesive.
- ACI 503.2 - Standard Specification for Bonding Plastic Concrete to Hardened Concrete with a Multi-Component Epoxy Adhesive.
- ACI 503R - Use of Epoxy Compounds with Concrete.

American Society for Testing and Materials (ASTM)

- ASTM C 881 - Specification for Epoxy - Resin Base Bonding Systems for Concrete.
- ASTM C 882 - Test for Bond Strength of Epoxy - Resin Systems used with Concrete.
- ASTM C 883 - Test for Effective Shrinkage of Epoxy - Resin Systems used with Concrete.
- ASTM C 884 - Test for Thermal Compatibility between Concrete and an Epoxy - Resin Overlay.
- ASTM D 570 - Test for Water Absorption of Plastics.
- ASTM D 638 - Test for Tensile Properties of Plastics.
- ASTM D 695 - Test for Compressive Properties of Rigid Plastics.
- ASTM D 2393 - Test for Viscosity of Epoxy Resins and Related Components.

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EPOXY

3.3D.3 SUBMITTALS

Contractor shall submit to the Engineer, 30 days prior to placement of the concrete, two copies of a report stating the method of application and the type of epoxy to be used.

MATERIAL

3.3D.4 EPOXY

All epoxy used shall conform to ASTM C 881, Type II, Grade 1, Class B or C, unless otherwise approved by the Engineer.

EXECUTION

3.3D.5 PREPARATION OF SURFACES

Concrete surfaces to which epoxies are to be applied shall be newly exposed parent concrete free of loose and unsound materials. All surfaces shall be meticulously cleaned and be dry, and be at proper surface temperature at the time of epoxy application.

3.3D.6 MIXING

Mixing of epoxy systems shall produce a uniform and homogenous mix. Proportioning of the mix shall be in accordance with manufacturer requirements.

3.3D.7 PLACING

The correct epoxy system shall be selected for the expected application temperatures and in-service environmental conditions. All surfaces shall be prepared as described in Section 3.3D.5 and shall conform to manufacturers standard prior to placing of epoxy.

3.3D.8 ACCEPTANCE

Acceptance of the completed work shall include all procedures of this work performed to the satisfaction of the Engineer.

END OF PART 3.3D

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SUBSECTION 3.4

MASONRY

(Not Applicable to this Specification)

SUBSECTION 3.5 - METALS

Part 3.5A
Miscellaneous Metalwork

DESCRIPTION

3.5A.1 SCOPE OF WORK

Contractor shall furnish all work, Material, tools, and equipment necessary to complete the miscellaneous metalwork as indicated on the drawings and specified herein. Major items of work include, but are not necessarily limited to inserts, anchor bolts, curb angles, ladders, floor plates, and similar items.

3.5A.2 CODES AND STANDARDS

All Work and Material shall be in compliance with the following codes and standards, as amended to the date of this Specification, which by reference are made a part of this Specification:

American Society for Testing and Materials (ASTM)

ASTM A 36-75 - Specification for Structural Steel

Edison Material Standard

M.S. No. 205 - Specification for Galvanizing Steel and Iron Products

MATERIAL

3.5A.3 STEEL

Unless otherwise specified herein or indicated on the drawings, all steel shall conform to ASTM A 36. Where indicated on the drawings, steel shall be galvanized in accordance with Edison Material Standard No. 205.

3.5A.4 COVER PLATES

Hatch cover plates shall be fabricated from 3/8 inch aluminum tread plate.

3.5A.5 ALUMINUM PIPE

Aluminum pipe shall be Schedule 80.

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MISCELLANEOUS METALWORK

EXECUTION

3.5A.6 LADDERS

Steel ladders shall be fabricated as detailed and anchored as indicated on the drawings. Color shall be specified in the Master Color Schedule.

3.5A.7 JOINT SURFACES OF DISSIMILAR METALS

Joint surfaces between dissimilar metals shall be cleaned with mineral spirits and fine sandpaper and painted with one coat of zinc-chromate primer.

3.5A.8. DAMAGED OR CUT GALVANIZED PARTS

Damaged galvanized coatings and all exposed bare metal on galvanized parts shall be repaired using Galvanox Type 1, manufactured by Subox, Inc., distributed by R. E. Cunningham and Son, South El Monte, or Koppers Company Organic Zinc, in accordance with the manufacturer's printed instructions.

3.5A.9 METAL ROOF DECKING

Roof decking shall be 22-gauge Huski-Rib manufactured by H. H. Robertson Company, Los Angeles, or a Company approved equivalent. Sheets shall have commercial-grade cold-rolled steel core. The final color coat shall be a minimum of six mils thick and shall be ripple textured. Flashing, fasteners, and method of erection shall be in accordance with the manufacturer's standards. Color shall be selected by the Engineer.

3.5A.10 STEEL STUDS

Steel studs shall be manufactured by Keene Corporation, Penn Metal Operation, Parkersburg, West Virginia, or a Company-approved equivalent. Flashing, fasteners, and method of erection shall be in accordance with the manufacturer's standards.

3.5A.11 ACCEPTANCE

Acceptance of the completed Work shall include Engineer's approval of all phases of the Work.

END PART 3.5A

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SUBSECTION 3.5 - METALS

Part 3.5B
Structural Steel

DESCRIPTION

3.5B.1 SCOPE OF WORK

Contractor shall perform all Work and furnish all Material necessary to erect and complete the structural steel Work indicated on the drawings and specified herein. The work includes, but is not limited to the following:

1. Preparation of shop detail and erection drawings.
2. Furnishing of Material, including all anchor bolts and nuts indicated on the drawings.
3. Shop fabrication.
4. Shop application of primer coat only on non-galvanized surfaces.
5. Shop galvanizing as specified on design drawings.
6. Shop inspection.
7. Delivery of fabricated Material to the Jobsite.
8. Unloading of delivered Material at the Jobsite.
9. Erection.

3.5B.2 CODES AND STANDARDS

The Work shall comply with the following codes and standards, as amended to the date of this Specification, which are hereby made a part of this Specification. In the event of conflict between the following and this Specification, the more restrictive requirements shall govern the Work.

Uniform Building Code (UBC), 1979 Edition

American Institute of Steel Construction (AISC)

1. Manual of Steel Construction 7th Edition.
2. Specification for the Design, Fabrication and Erection of Structural Steel for Buildings.
3. Code of Standard Practice for Steel Buildings and Bridges.

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Solar One

STRUCTURAL STEEL

American Society for Testing and Materials (ASTM)

- ASTM A 36 - Standard Specification for Structural Steel.
- ASTM A 108 - Specification for Steel Bars, Carbon, Cold-Finished, Standard Quality.
- ASTM A 123 - Specification for Zinc (Hot Galvanized) Coatings on Products Fabricated from Rolled, Pressed, and Forged Steel Shapes, Plaster, Bars, and Strip.
- ASTM A 153 - Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- ASTM A 307 - Specification for Carbon Steel Externally and Internally Threaded Standard Fasteners.
- ASTM A 386 - Specification for Zinc Coating (Hot-Dip) on Assembled Steel Products.
- ASTM A 496 - Specification for Deformed Steel Wire for Concrete Reinforcement.

Steel Structures Painting Council (SSPC)

SSPC SP6 - Commercial Blast Cleaning.

American Welding Society (AWS)

AWS D1.1 - Standard Code for Arc and Gas Welding in Building Construction.

3.5B.3 SHIPPING, STORAGE, AND HANDLING

3.5B.3.1 Shipping

Individual pieces shall be assembled in the shop into as complete a unit as can be shipped and erected. Each shipment shall include all field bolts, nuts, and washers required, plus at least 5 percent excess in each type, size and length.

3.5B.3.2 Piece Marking

All fabricated steel items furnished by Contractor shall be piece marked with the erection mark number in accordance with the drawings.

Galvanized items shall be identified with metal tags or by mark number dies stamped into the item prior to galvanizing.

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STRUCTURAL STEEL

3.5B.3.3 Storage and Handling

Structural items, either plain or fabricated, shall be stored above the ground upon platforms, skids, other supports. Material shall be kept free from dirt, grease, and other foreign matter that would be detrimental to erection, and to facilitate inspection.

3.5B.4 SUBMITTALS

A. Material samples shall be furnished, upon request, to the Engineer prior to fabrication testing at no additional cost to Edison.

B. Prior to fabrication, Contractor shall furnish Engineer with five certified copies of all mill test reports covering the chemical and physical properties of the steel used in this Work, as described in the referenced codes and standards.

C. Prior to fabrication of structural steel, Contractor shall submit to Engineer for approval three copies of complete shop and erection drawings showing details of methods, Materials, and finished proposed to be used.

D. One copy of qualification test records of each welder shall be submitted to the Engineer for approval.

MATERIALS

3.5B.5 METALS AND COATING MATERIALS

Substitutions shall be permitted only if approved by the Engineer in writing.

3.5B.5.1 Metals

A. Structural steel shall conform to ASTM A 36, galvanized as indicated on the drawings, or specified herein.

B. Bolts and nuts shall comply with ASTM A 307, unless otherwise noted on the drawings.

C. Miscellaneous steel shall comply with the requirements for structural steel as indicated on the drawings and detailed herein.

D. Welded, headed steel anchor studs and deformed anchors shall conform to ASTM A 108 and ASTM A 496 respectively.

E. Welding electrodes shall conform to AISC Manual of Steel Construction, 7th Edition Table 1.5.3 on Page 5-21, or as modified by Table 1.17.2.

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3.5B.5.2 Coatings

A. Galvanized coatings shall conform to ASTM A 123, A 153, and A 386 as appropriate.

Studs and deformed bars shall be manufactured by Nelson Division of TRW, Inc., Lorain Ohio, or an Engineer approved equivalent. Method of installation shall be in accordance with manufacturer's standards. Welding shall comply with AWS D1.1, Section 4.

3.5B.6 TESTS AND INSPECTIONS

A. Contractor's shop service shall include inspection by its own inspector. Contractor shall provide facilities, including drawings, for shop inspection of Materials and workmanship by the Engineer.

B. Edison Representative shall be allowed free access at all times to the fabrication shop to inspect the fabrication and painting of structural members and to witness any tests.

C. Shop Painting and Galvanizing - During the course of the Work, Contractor shall schedule steel cleaning, painting, and galvanizing operations to coincide with visits of the Engineer's inspector. The procedure followed and results obtained will be observed to assure compliance with the appropriate parts of this Specification.

D. Inspection by the Engineer shall not relieve Contractor of responsibility for compliance with all requirements of this Specification.

EXECUTION

3.5B.7 FABRICATION

A. Fabrication and detailing of all structural steel shall conform to the AISC Manual of Steel Construction, 7th Edition. Shop drawing approval by the Engineer prior to fabrication is required, where noted on the design drawings, and Contractor shall direct Engineer's attention to any discrepancies found thereon. No deviations shall be made from design drawings without prior Engineer's approval in writing. Contractor shall be responsible for dimensions and strength of details not shown or indicated. All connections designed by fabricator shall conform to the AISC Manual.

B. Contractor shall supply three copies of the complete erection drawings, showing erection marks (and field welding details if field welding is noted on Edison drawings).

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3.5B.10 PRIMING

3.5B.10.1 Protective Shop Painting

Contractor shall apply a shop prime coat to all exposed surfaces of structural steel and bolts in bolted shop assemblies, except to be galvanized or embedded in concrete surfaces within 3 inches of field welds, and contact surfaces of friction type connections, according to the following requirements:

- A. Steel surfaces to receive paint shall be prepared for painting in accordance with SSPC-SP-6, Commercial Blast Cleaning.

The following primer shall be applied:

Sinclair Quick Dry Red Lead Primer No. 20E.

- B. The primer shall be applied uniformly with the necessary numbered coats to produce a minimum dry film thickness of 4.0 mils.
- C. Contact surfaces of high-strength bolted connections shall not be shop painted.
- D. All embedded steel in concrete shall be galvanized.
- E. Prior to use, all shop coating Materials shall be in original unbroken containers bearing the manufacturer's name, product designation, batch number and directions for use, all of which shall be clearly legible.
- F. All paint Materials shall be applied in accordance with the manufacturer's printed instructions. The use of thinner for any reason shall not relieve Contractor from obtaining complete coverage and the mil thickness specified herein.

3.5B.12 ACCEPTANCE

Acceptance of the completed structural steel Work shall include all Work performed to the satisfaction of the Engineer.

END OF PART 3.5B

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The following are not applicable to this Specification:

- Subsection 3.6 - Wood and Plastics
- Subsection 3.7 - Thermal and Moisture Protection
- Subsection 3.8 - Doors and Windows
- Subsection 3.9 - Finishes
- Subsection 3.10 - Specialties
- Subsection 3.11 - Equipment
- Subsection 3.12 - Furnishings
- Subsection 3.13 - Special Construction
- Subsection 3.14 - Conveying Systems
- Subsection 3.15 - Mechanical

ELECTRICAL, GENERAL

3.16A.6 CUTTING AND PATCHING

Contractor shall drill, cut and patch as required for the installation of its Material. All patching shall be of the same materials, workmanship and finish as the original work, and shall accurately match all surrounding work.

All cutting and patching shall be performed in compliance with instructions.

3.16A.7 CLOSING-IN OF UNINSPECTED WORK

Contractor shall not allow nor cause any of its work to be enclosed or covered until it has been inspected, tested and approved by the Engineer and all legally constituted authorities having jurisdiction.

Should any work be enclosed or covered before such inspection and test, Contractor shall uncover the work and, after it has been inspected, tested and approved, shall make all repairs with like materials necessary to restore the work and the work of other contractors to its original condition.

3.16A.8 EXCAVATION AND BACKFILL

Contractor shall excavate as necessary to install the Material included herein. After the Material has been installed, inspected and approved, all excavations shall be backfilled with firmly compacted earth in accordance with Subsection 3.2, Part 3.2A, Earthwork.

3.16A.9 ACCEPTANCE

Acceptance of the completed electrical work shall include all work performed to the Engineer's satisfaction, including final testing of circuitry and correct operation of the completed electrical systems.

END PART 3.16A

APPENDIX 3A

EDISON DRAWING LIST

<u>Drawing No.</u>	<u>Title</u>
5133447 S-2	General Foundation Arrangement
5133459 S-14	Turbine Generator Foundation, Plan Elev. 100 ft.
5133461 S-16	Turbine Generator Framing Plan Elev. 110 ft.
5133462 S-17	Turbine Generator Frame, Plan Elev. 120 ft. and 120 ft. 3 in.
5133463 S-18	Turbine Generator Embedded Sole Plans and Logging Plan El. 120 ft. 0 in. and 120 ft. 3 in.
5133464 S-19	Turbine Generator Pedestal West Elevation
5133465 S-20	Turbine Generator Pedestal North-South Elevation
5133466 S-21	Turbine Generator Pedestal East Elevation
5133467 S-22	Turbine Generator Pedestal - Section
5133468 S-23	Turbine Generator Pedestal - Sections
5133469 S-24	Turbine Generator Pedestal Sections
5133470 S-25	Turbine Generator Pedestal Sections
5133471 S-26	Turbine Generator Pedestal Sections
5133472 S-27	Turbine Generator Pedestal Reinforcing Details
5133473 S-28	Turbine Generator Column & Beam Typical Reinf.
5133475 S-30	Turbine Generator Embedded Sole Plate & Lagging Sect. & Det.
5133476 S-31	Turbine Generator Embedded Sole Plate, Lagging Sect. & Det.
5133482 S-37	Auxiliary Bay Foundation Slab Plan Elev. 100 ft. 0 in.
5133483 S-38	Auxiliary Bay Foundation Slab Plan Elev. 100 ft. 0 in.

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APPENDIX 3A

5159200		Gen. Area Index
5159201		Gen. Raceway and Grounding Plan
5159203		Area I - Grounding Plan First Floor EPGS Building Elev. 100 ft. 0 in. to 108 ft. 0 in.
5159217		Area 6 - Raceway Plan Elev. 100 ft. 0 in.
5159260		Grounding Details All Areas
5159263		M.H. and Raceway Details All Areas
5161144	S-61	Misc. Foundation Key Plan NW & SW T/G Area
5161147	S-64	Misc. Structure Fdn. Sheet 1
5161152	S-69	Misc. Typical Details
5161153	S-70	Misc. Structure Fdn. Sheet 7
ECS #	33-00-01	Sheet 1 and 2
	33-00-03	Sheet 3 through 12
	33-12-10	Sheet 1
	33-12-12	Sheet 2
	34-01-00	Sheet 1 through 8
	34-44-10	Sheet 2 and 3

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Solar One

SOUTHERN CALIFORNIA EDISON COMPANY
Rosemead, California

PROPOSAL REQUIREMENTS

SPECIFICATION 40-0284

TURBINE PEDESTAL

AND MISCELLANEOUS FOUNDATIONS

SOLAR ONE GENERATING STATION

Part A

Information With Proposal

A.1 SCOPE

Bidder shall comply with all provisions of these Proposal Requirements. These Proposal Requirements shall be submitted with all instructions fulfilled and all spaces filled in to present a complete proposal for the Work described in the Specification. Incomplete proposals may be rejected.

Bidder shall not substitute, nor use a preprinted reference to Bidder's general terms and conditions in lieu of Edison's General Terms and Conditions as set forth in Section 1 of the Specification. Any proposal received with such substitution shall be considered nonresponsive and be subject to rejection.

All proposals submitted by Bidders, including drawings and other data, shall become the property of Edison and shall not be used for any purpose other than in connection with the procurement of the work.

A.2 INSPECTION OF JOBSITE

Each Bidder, before submitting its proposal, shall visit the Jobsite to satisfy itself as to the nature and location of the work, the general and local Jobsite conditions, the transportation and handling of Material, the environmental and physical conditions at the Jobsite, the character of the equipment, facilities, Edison-furnished equipment and services, labor conditions, safety and security precautions, and all matters which may affect the performance of the Work and its cost. Such Jobsite visits shall be arranged by and made with the Buyer. Notification of the initial Jobsite visit shall be made through the Buyer.

A.3 CONSTRUCTION PLAN

Bidder shall provide an attachment containing the following information:

- A. A narrative description of how the Work is planned to be performed including the work area and laydown area required.

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Bidder _____

Date _____

PROPOSAL REQUIREMENTS

B. The number and size of construction teams to be utilized.

C. A listing of the major types and quantities of construction equipment required (both bidder owned and leased).

D. The quantities of Material required for the Work.

E. A summary milestone (bar chart) schedule showing the time phasing of the main activities to be performed within the start and completion dates.

A.4 EXPERIENCE RECORD OF SUPERINTENDENT

Bidder shall provide an attachment listing the name(s) and experience record of the construction superintendents whom it expects to employ in the Work. The record shall cover in detail the superintendent's construction experience in the subject Work, and indicate his reliability for satisfactorily meeting scheduled completion dates.

The construction superintendent shall be at the Jobsite at all times during construction and shall be authorized to speak and act on behalf of Contractor.

A.5 SUBCONTRACTORS

Edison is actively involved in developing and employing minority owned and small business enterprises, and encourages its suppliers and contractors to identify and utilize minority owned and small business subcontractors when contracting for work with Edison.

Bidder shall provide evidence that minority/small business subcontractors have been solicited for subcontract Work, if such Work is required by the Specification.

Bidder shall list the Subcontractors and the Work to be performed by each Subcontractor.

<u>Subcontractor</u>	<u>Minority Yes/No</u>	<u>Work by Subcontractor</u>
_____	_____	_____
_____	_____	_____

A.6 TECHNICAL DEVIATIONS

Bidder shall provide a complete list of technical items of deviation and exception to the Specification on which this proposal is based, referencing the Section No. and explaining the deviation. If there are no deviations, Bidder shall so indicate.

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Solar One

Bidder _____

Date _____

SOUTHERN CALIFORNIA EDISON COMPANY
Rosemead, California

PROPOSAL REQUIREMENTS

SPECIFICATION 40-0284

TURBINE PEDESTAL

AND MISCELLANEOUS FOUNDATIONS

SOLAR ONE GENERATING STATION

Part B

Commercial Information

This Part B shall be individually stapled or clipped for easy removal from the balance of the proposal.

B.1 PRICES

Bidder shall submit a fixed price quote including all taxes.

GRAND TOTAL PRICE for performing all the Work and all provisions of the Specification:

\$ _____
(Figures)

_____ Dollars
(Words)

B.1.1 Base Bid Breakdown

The following items represent an allocation of the Grand Total Price and shall not be used for any adjustments of that price. Price adjustments, if any, shall be determined by the firm unit prices stated in Section B.1.2.

<u>Item No.</u>	<u>Description</u>	<u>Price</u>
1.	Surveying	\$ _____
2.	Jobsite preparation, excavation and backfill	\$ _____
3.	Finish Grading	\$ _____
4.	Equipment Foundations	\$ _____
5.	Turbine Generator/Condenser Foundation	\$ _____

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Bidder _____

Date _____

PROPOSAL REQUIREMENTS

B.1.2 Firm Unit Pricing for Extra or Deleted Work

Edison, at its discretion, may elect to alter the quantities indicated on the drawings and specified in the Specification. The Grand Total Price as stated in Section B.1 shall be adjusted according to the prices set forth below:

- 1. Excavate, Backfill and Compact \$ _____ /cu. yd.
- 2. Concrete Forming Erection \$ _____ /sq. ft.
- 3. Reinforcing Steel and Embeds \$ _____ /lb.
- 4. Concrete Placement \$ _____ /cu. yd.
- 5. Steel Erection \$ _____ /per lb.

B.2 TERMS OF PAYMENT

Bidder shall state the specific terms of payment proposed and a schedule of such payments. If specific terms of payment are not proposed, Edison may designate "net 30 days" as applicable.

B.3 TERMINATION CHARGES

Bidder shall provide a monthly schedule of charges for which Edison would be liable if Edison should terminate the Work pursuant to Section 8, at any time after issuance of the Purchase Order and until completion of the Work.

B.4 WORK SCHEDULE

The Work shall be completed on _____, as specified in Section 2.

B.5 LABOR CONTRACTS

Bidder shall list its present major labor contracts and the date of expiration for such contracts.

	/	
Contract		Date
	/	
Contract		Date

B.6 PROPOSAL EXPIRATION DATE

This proposal shall remain in force for a period of 90 calendar days from the day appointed on which bids are due.

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Bidder _____
Date _____

PROPOSAL REQUIREMENTS

B.7 REPRESENTATION

The undersigned hereby declares, as Bidder, that the only persons or parties interested in this proposal as principals are those named herein; that this bid is made without any connection with any other person or persons making a bid for the same purpose; that this bid is in all respects fair and without collusion or fraud; Bidder shall perform the Work and all obligations of Bidder and shall complete the Work within the time specified therein; and shall accept in full payment therefor the prices named herein.

Date _____

Bidder

Bidder's License No.(s) and Classes
(if applicable)

Address and Telephone No.

By

Title

SPECIFICATION 40-0284
Turbine Pedestal
Solar One

Bidder _____

Date _____



DEPARTMENT OF ENERGY
SAN FRANCISCO OPERATIONS OFFICE

CONTRACTOR REQUEST FOR PATENT CLEARANCE
FOR RELEASE OF UNCLASSIFIED DOCUMENT

Prime Contract No. DE-AC03-77SF10501
Subcontract No. NA
Report No. (STMP0 502)
DOE/SF/10501-025
Date of Report October, 1980
Name & Phone No. of DOE Technical Representative Mike Lopez (415) 273-4264

TO: Roger S. Gaither, Asst. Chief for Prosecution
Office of Patent Counsel/Livermore Office
P.O. Box 808, L-376
Livermore, California 94550

FROM: Southern California Edison
P.O. Box 800
Rosemead, CA 91770

- Document Title: **Turbine Pedestal and Miscellaneous Foundations, Solar One Generating Station.**
- Type of Document: Technical Report, Conference Paper, Journal Article, Abstract or Summary, Copy of Oral Presentation, Other (please specify): _____
- In order to meet a publication schedule or submission deadline, patent clearance by (Routine) would be desired.

SENDER IS TO CHECK BOX #4 OR #5 BELOW.

4. I have reviewed (or have had reviewed by technically knowledgeable personnel) this document for possible inventive subject matter (Subject Inventions) and that no inventions or discoveries (Subject Inventions) are deemed to be disclosed in this document except as stated below:
- Attention should be directed to pages _____ of this document.
 - This document describes matter relating to an invention:
 - Contractor Invention Docket No. _____
 - A disclosure of the invention was submitted to DOE on _____ (date)
 - A disclosure of the invention will be submitted shortly _____ (approximate date)
 - A waiver of DOE's patent rights to the contractor:
 - has been granted, has been applied for, or will be applied for _____ (date)
5. This document is being submitted, but no review has been made of this document for possible inventive subject matter.

Please provide copy of clearance to: So. Calif. Edison Co.
6. Remarks: %Joyce Wells Room 497 P.O. Box 800
Rosemead, CA 91770

Reviewing/Submitting Official: Name (Print/Type) Bill von KleinSmid
Title Solar One Program Director
Signature William von KleinSmid Date 9-25-84

TO: INITIATOR OF REQUEST
FROM: ASSISTANT CHIEF FOR PROSECUTION *X*
Office of Patent Counsel/Livermore Office

- No patent objection to above-identified release.
 Please defer release until advised by this office.

Signed Harold M. Pijo Date Mailed 10/9/84