

**Date:** April 19, 2010**To:** City Manager for Council Action**From:** John C. Roukema, Director of Electric Utility**Subject:** Approval of Call No. 10-1 for Professional Services with MTH Engineers, Inc for Miscellaneous Consulting Services for Engineering, Design and Construction Support of the Replacement of Tasman Substation with Esperanca Substation; and Corresponding Transfer and Allocation of Funds**EXECUTIVE SUMMARY:**

The Santa Clara Electric Department, Silicon Valley Power (SVP), is proposing to install a new substation (Esperanca) to replace the older Tasman substation, located adjacent to the Great America parking lot. The new Esperanca Substation will be installed at the City's existing Northern Receiving Station. The existing Tasman Substation will be removed from service and the land will be available for use as parking or other development consistent with the land use in the area. Making this land available to support economic development in the area has significant value to the City regardless of the outcome of the stadium vote. This project will be part of a significant capital construction program for electric transmission, substation and distribution facilities over the next several years. These projects are necessary to meet customer demand for increased electric load and to ensure the ongoing reliability of the electric system. Other planned substation projects include the construction of new substations (Palm, Mission, and Kenneth) and the re-construction of existing substations (Walsh, Uranium, Serra and Brokaw). To maintain projected construction schedules for the removal of Tasman Substation it is necessary to begin engineering, design and technical drawing preparation work on the new Esperanca Substation in early 2010.

On December 8, 2009, the City certified a Final Environmental Impact Report (FEIR) for the proposed 49ers Santa Clara Stadium Project (SCH No. 2008082084), which includes an environmental impact analysis of all components of the Project, inclusive of the Substation relocation. On March 9, 2010, the Council made findings with respect to the impacts of the project, mitigation measures that address those impacts, alternatives to the project and overriding considerations for those impacts that cannot be mitigated to a less-than-significant level. The Council also adopted all feasible mitigation measures and required that feasible mitigation measures be incorporated into the conditions of approval for the elements of the project as applicable. There have been no changes to the project since that time and the Substation relocation presented here is consistent with the analysis in the FEIR and with the findings made by Council to approve the Project. Those applicable mitigation measures adopted by the Council on March 9, 2010 will be incorporated into the Substation Relocation Project as it proceeds. The City will file the appropriate Notice of Determination (NOD) pursuant to CEQA in connection with this approval.

Staff considers it necessary to continue to use the services of MTH Engineers for engineering, design, technical drawing preparation, and construction support services at the proposed Esperanca Substation. MTH Engineers has offered to undertake these consulting services on a task order basis as Call No. 10-1 under a current Call Agreement, dated October 9, 2007, for an amount not to exceed \$525,507. A copy of the MTH Engineer Call No. 10-1 for Professional Services is available for review in the Council Offices.

ADVANTAGES AND DISADVANTAGES OF ISSUE:

Call No. 10-1 with MTH Engineers will enable SVP to continue with the substation construction program and meet projected schedules for the removal of the existing Tasman Substation. Engineering designs and drawings will be completed, enabling equipment procurement and construction bid documents to be prepared and issued. Completion of the work associated with the substation projects will help enable SVP to meet the load increase requests of customers and to maintain the integrity of the electric system in a reliable and safe manner.

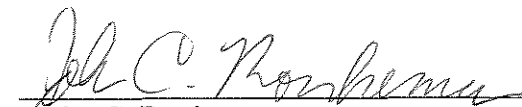
ECONOMIC/FISCAL IMPACT:

Call No. 10-1 has a proposed cost not to exceed \$525,507. Staff is requesting a transfer of \$525,507 from the Natural Gas Reserve Purchase account (591-1361-80100-2383-[F]xxx00) to the new Tasman Relocation/Esperanca Substation project (591-1361-80100-2135-[F]36200).

RECOMMENDATION:

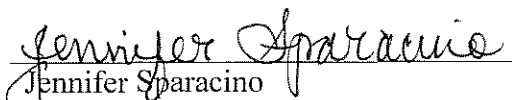
That Council:

- 1) Approve the Tasman Relocation/Esperanca Substation Project,
- 2) Direct the City Manager to incorporate those applicable mitigation measures adopted by the Council on March 9, 2010 into the Tasman Relocation/Esperanca Substation Project as it proceeds,
- 3) Approve the transfer and appropriation of \$525,507.00 from the Natural Gas Reserve Purchase account 591-1361-80100-2383-[F]xxx00, to the Tasman Relocation/Esperanca Substation Project, account 591-1361-80100-2135-[F]36200), and
- 4) Approve, and authorize the City Manager to execute, Call No. 10-1 for Professional Services with MTH Engineers, Inc., in an amount not to exceed \$525,507.00 for Miscellaneous Consulting Services for Engineering, Design and Construction Support of the Esperanca Substation,



John C. Roukema
Director of Electric Utility

APPROVED:



Jennifer Sparacino
City Manager

Certified as to Availability of Funds:

591-1361-80100-2383 \$525,507.00

OK.
LF.



Gary Ameling
Director of Finance

FIVE COUNCIL VOTES

Documents Related to this Report:

- 1) MTH Engineers Call No. 10-1 for Professional Services

**CALL NO. 10-1
FOR PROFESSIONAL SERVICES
TO BE PROVIDED TO THE
CITY OF SANTA CLARA, CALIFORNIA
BY MTH ENGINEERS, INC.**

The Parties to this Call No. 10-1 ("Call") agree that on this _____ day of April, 2010, this Call is made pursuant to the terms of a Call Agreement between the Parties entitled, "Call Agreement by and between the City of Santa Clara, California and MTH Engineers, Inc.," dated October 9, 2007, the terms of which are incorporated by this reference. This Call describes the Services to be provided to the City of Santa Clara, California ("City") by MTH Engineers, Inc. ("Contractor"), which are more fully described in Contractor's proposal to City entitled "Proposal for Engineering and Design of Esperanca Substation" dated March 24, 2010 ("Proposal"), attached to this Call as Exhibit A and incorporated by this reference. The Services to be performed under this Call shall be completed within the time period beginning on April 21, 2010 and ending on October 30, 2010. The attached Proposal contains a complete description of the Services, and performance dates for the completion of such Services, to be performed by the Contractor under this Call. In no event shall the amount paid to the Contractor for the Services provided to City by the Contractor under this Call, including all fees or pre-approved costs and/or expenses, exceed five hundred twenty-five thousand five hundred seven dollars (\$525,507), subject to budgetary appropriations.

The Parties acknowledge and accept the terms and conditions of this Call as evidenced by the following signatures of their duly authorized representatives.

CITY OF SANTA CLARA, CALIFORNIA
a chartered California municipal corporation

APPROVED AS TO FORM:

ELIZABETH H. SILVER
Interim City Attorney

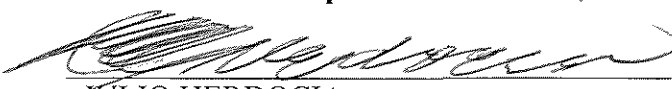
ATTEST:

ROD DIRIDON, JR.
City Clerk

JENNIFER SPARACINO
City Manager
1500 Warburton Avenue
Santa Clara, CA 95050
Telephone: (408) 615-2210
Fax: (408) 241-6771

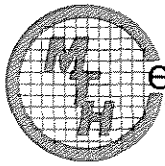
"CITY"

MTH ENGINEERS, INC.
a California corporation

By: 

JULIO HERDOCIA
Title: President/Principal
Address: 3350 Scott Boulevard, Building 11
Santa Clara, CA 95054
Telephone: (408) 986-8558
Facsimile: (408) 986-9627

"CONTRACTOR"



engineers, inc.

3350 scott blvd., bldg. 11 • santa clara, california 95054 • (408) 986-8558 • fax (408) 986-9627

Proposal No. 2A032410.200.jh

March 24, 2010

Mr. Kevin Keating
Acting Division Manager-Engineering
Silicon Valley Power
1500 Warburton Avenue
Santa Clara, CA 95050

Subject: Proposal for Engineering and Design of Esperanca Substation

Dear Mr. Keating:

MTH Engineers, Inc. is pleased to submit this proposal to provide engineering, design and construction support services for the new Esperanca Substation. We understand that the new substation will be located in the Northern Receiving Station (NRS) site. The existing NRS 60 kV line termination structures will be extended and new service lines will be installed across the access road to serve the new Esperanca Substation transformers. New 60 kV SF6 circuit breaker pads and new 60 kV isolating switches will be added in the existing NRS 60 kV Bus. New 60 kV bus work will be provided to connect the new breakers and isolating disconnect switches to NRS existing 60 kV Main and Auxiliary buses.

Esperanca Substation will be initially a 2- bank station. Space provisions will be made for the installation of a third bank in the future. The 15 kV switchgear configuration and design will be based on the existing design of Walsh Substation, modified as required to meet the specific site conditions, and with provisions for future extension to accommodate the future third bank installation. The substation 15 kV distribution switchgear will have a main and auxiliary bus configuration, similar to the switchgear designed for Walsh Substation. This switchgear will not be Arc-Resistant, but will be specified to have arc detection devices to minimize damage to equipment and to reduce danger to operating personnel.

For this project, MTH Engineers has assembled a team of highly experienced sub-consultants that will work under the direction of MTH, to provide the required Topographic Survey, Civil, Structural, and Mechanical engineering and design services.

- Harris and Associates will provide the required Topographic Survey, and Civil engineering services.
- Biggs Cardosa Associates, Inc. will provide the required Structural engineering services.

- Mechanical Application Consultants, Inc. will provide the required Mechanical engineering services.

All of the above consultants were part of the team of consultants for the Walsh Substation project.

Scope of Services

MTH Engineers proposes to provide the following services for this project:

1. Topographic survey of the existing project site. Topographic survey will include the necessary detail for the Civil design of new grading and drainage plans. The topographic survey will be an aerial survey supplemented by ground surveys.
2. Preparation of the site Civil, Structural, Electrical and Mechanical design drawings, including design calculations, using as a basis the design drawings developed for the recently designed Walsh Substation.
3. Preparation of the Project Manual for the procurement of the Switchgear, Control Room, and Battery Room Building. The Project Manual will be similar to the Project Manual developed for the procurement of the Walsh Substation Switchgear, Control Room, and Battery Room Building.
4. Preparation of the Project Manual for the substation construction. The Project Manual will be similar to the Project Manual developed for the construction of Walsh Substation.
5. Prepare estimates of the probable cost of construction. The cost estimates will be summarized following the same format of the Bid Schedule.
6. Attend project review and coordination meetings with SVP as necessary.
7. Provide technical support to obtain any required permits for grading, drainage, and oil containment system.
8. Assist SVP during the bidding process. Services will include clarification of contract documents, review and evaluation of bids received and recommendation for bid award.
9. Provide construction support services, including:
 - a. Attend weekly site meetings with the Contractor to review the progress of the work and to resolve any construction issues.
 - b. Shop drawing review for the pre-purchased switchgear, control room and battery room building.
 - c. Shop Drawing review for all Contractor furnished material and equipment.
 - d. Respond to Contractor's Request for Information (RFI's) and issued field change notices as required.
 - e. Provide As-Built Record Drawings at the end of the project.

Proposed Fee

MTH Engineers, Inc. proposes to perform the above described services on a maximum Not-To-Exceed basis as listed below and as detailed in Exhibit A of this proposal. Please note that some of the services will be provided on a fixed fee basis.

<u>Engineering and Design Services</u>	<u>Responsible Firm</u>	<u>Not-To-Exceed Fee</u>
Topographic Survey	Harris and Associates	\$7,400 (Fixed Fee)
Civil Design	Harris and Associates	\$81,640
Structural Design	Biggs Cardosa Associates	\$38,296
Electrical Design	MTH Engineers	\$277,890
Mechanical Design	Mechanical Applications	\$2,105
Project Expenses		\$4,150
Total Engineering and Design Services		\$411,481

<u>Construction Support Services</u>	<u>Responsible Firm</u>	<u>Not-To-Exceed Fee</u>
Civil Engineering Services	Harris and Associates	\$19,520
Structural Engineering Services	Biggs Cardosa Associates	\$9,856
Electrical Engineering Services	MTH Engineers	\$75,630
Mechanical Engineering Services	Mechanical Applications	\$2,380
Project Expenses		\$1,100
Total Construction Administration Services		\$108,486

<u>Allowance for Any Other Documents As Requested by SVP</u>	<u>Responsible Firm</u>	<u>Not-To-Exceed Fee</u>
Drawings, Calculations, Permits	To Be Determined	\$5,540
Total Allowance		\$5,540

Schedule

MTH proposes to meet with the City on a regular basis to review those design documents that are to deviate from the Walsh Substation documents. In addition, an informal over-the-shoulder review meeting is proposed at the 65% design completion stage. A formal submittal is proposed at the 95% design completion stage and a final submittal to start the process of soliciting bids. MTH Engineers anticipates that approximately 5 to 6 months will be needed to prepare the equipment procurement and construction documents.

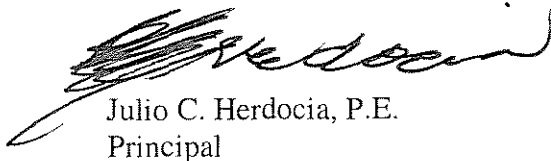
Assumptions/Clarifications

This proposal has been developed considering the following assumptions and clarifications:

1. SVP will provide the geotechnical report developed for the NRS project site. The NRS geotechnical report will be used in the design of the concrete foundations for the Esperanca Substation.
2. The Esperanca Substation ground grid will be an extension of the ground grid designed for the NRS Station. It is assumed that no soils resistivity tests are required for the design of the Esperanca Substation ground grid.
3. Site is not contaminated with hazardous materials. No soils remediation is included in this proposal.
4. An aerial survey, in conjunction with a ground survey, is proposed to be performed for this project in order to expedite the site topographic survey work.
5. Existing boundary survey is included. No property corners will be set nor is a Record of Survey included.
6. The new pavement area will be between 10,000 SF and 1 acre (means C.3 requirements will apply, but only to new pavement area). No narrative report for C.3 compliance is included.
7. Contractor will prepare the SWPPP based on the Erosion Control Plan provided.
8. Fees associated with City's processing of plans and permits are not included.
9. Utility potholing and subsurface investigation are not included.
10. The site as-built plans will be used to depict the location of the existing utilities on the Utility Plan.
11. Tree removal permits are not included.
12. No new fire hydrant will be required near the project site.
13. Equipment shop drawings for all equipment to be furnished by SVP will be available at the time of notice to proceed.
14. Project deliverables will consist of two (2) sets of documents each at the 65% over-the-shoulder review meeting, 95% submittal and final submittal. As-built Record Drawings submittal will consist of one set of project documents and CD containing an electronic copy of all drawings and specifications.

Please do not hesitate to contact us should you have any questions regarding our proposal. MTH Engineers and the team of consultants look forward to working with SVP on this project.

Very truly yours,
MTH Engineers, Inc.



Julio C. Herdocia, P.E.
Principal

EXHIBIT A
Substation Design - Fee Calculation Sheet

Item	Dwg No.	Description	PM	Manhours PE	CAD	CL
1		Field Investigation				
		Civil (See Harris & Associates Proposal)				
		Structural	6	6		
		Electrical	12	12		
		Mechanical				
		Subtotal	18	18	0	0
2		Review Structural Calcs of (E) Dead-End Structure				
		Structural	4	16		
		Subtotal	4	16	0	0
3		Drawings				
		General Drawings				
	FZ-A-0-X-1	Cover Sheet and Drawing Schedule	1	4	10	
	FZ-A-0-X-3	Location and Vicinity Map	1	2	8	
		Subtotal	2	6	18	0
		Civil Drawings (See H&A Proposal)				
	FZ-C-0-X-1	General Notes and Legend				
	FZ-C-0-X-2	Exist Conditions Plan				
	FZ-C-0-X-3	Demolition Plan for Surface Impvmts & Util				
	FZ-C-0-X-4	Horiz Control & Finished Surface Plan				
	FZ-C-0-X-5	Site, Grading and Drainage Plan				
	FZ-C-0-X-6	Utility Plan				
	FZ-C-0-X-7	Erosion Control Plan				
	FZ-C-0-X-8	Erosion Control Details				
	FZ-C-0-X-9	Oil-Water Collection/Separator Details				
	FZ-C-0-X-10	Miscellaneous Details				
		Subtotal	0	0	0	0
		Structural Drawings				
	FZ-S-0-X-1	Specifications and General Notes	1	4	4	
	FZ-S-0-X-2	Testing and Special Inspections	1	2	4	
	FZ-S-0-X-3	Foundation Plan	2	12	12	
	FZ-S-0-X-4	Foundation Sections and Details	2	12	12	
	FZ-S-0-X-5	Disconnect Structures Elevations, Sections & Details	2	12	16	
	FZ-S-0-X-6	Bus Spprt & Dead-End Struct Elevtns, Sectns & Dettls	2	16	16	
		Subtotal	10	58	64	0

EXHIBIT A
Substation Design - Fee Calculation Sheet

Item	Dwg No.	Description	PM	Manhours PE	CAD	CL
Electrical Drawings						
Swgr Procurement Drawings						
FZ-A-0-X-2		Title Sheet and Drawings Index	1	4	10	
FZ-E-0-X-1		Legend Abbreviations and Gnl Notes	1	1	2	
FZ-E-0-X-2		Single Line Diagram	1	6	8	
FZ-E-0-X-3		60 kV One Line Rly & Meter Diagram Sht 1	2	8	8	
FZ-E-0-X-4		60 kV One Line Rly & Meter Diagram Sht 2	2	8	8	
FZ-E-0-X-5		Swgr and Control Bldg. Arrangement Plan	4	8	10	
FZ-E-0-X-6		Control Rm Eqmnt Arrangement, Cable Tray, Pwr & Ltg F	2	4	8	
FZ-E-0-X-7		12 kV Swgr Rm Cable Tray, Pwr & Ltg Plan	4	8	10	
FZ-E-0-X-8		12 kV Swgr & Cntl Rm Lt Fixture Sched & Cntl Schem	2	4	8	
FZ-E-0-X-9		12 kV Swgr & Cntl Rm Miscellaneous Schematics	1	2	4	
FZ-E-0-X-10		12 kV Swgr & Cntl Rm F.O. Cable Routing Plan	2	4	8	
FZ-E-0-X-11		12 kV Swgr & Cntl Rm Conduit Entries	1	4	6	
FZ-E-0-X-12		Termination Cabinet No. 1 Details	2	4	6	
FZ-E-0-X-13		Termination Cabinet No. 2 Details	2	4	6	
FZ-E-0-X-14		12 kV Swgr Arc-Flash Protection - Bank 1	8	8	10	
FZ-E-0-X-15		12 kV Swgr Arc-Flash Protection - Bank 2	8	8	10	
FZ-E-0-X-16		12 kV Swgr Arc-Flash Protection - 3-Line Schematic	4	6	8	
FZ-E-0-X-17		12 kV Swgr Arc-Flash Protection - Contact Table	8	8	10	
FZ-E-0-X-18		60 kV Control Panel Layout & Front Elevation	2	8	10	
FZ-E-0-X-20		60 kV Control Panel Device List	1	2	4	
FZ-E-0-X-21		60 kV Control Panel Nameplate Schedule	1	2	4	
FZ-E-0-X-22		60 kV Control Panel Test Switch Nameplate Schedule	2	6	8	
FZ-E-0-X-23		NRS 60 kV Control Panel Layout Modification Bkr 532	8	12	12	
FZ-E-0-X-24		NRS 60 kV Control Panel Layout Modification Bkr 562	8	12	12	
FZ-E-0-X-25		NRS 60 kV Control Panel Device List	1	2	4	
FZ-E-0-X-26		NRS 60 kV Control Panel Nameplate Schedule	1	2	4	
FZ-E-0-X-27		NRS 60 kV Control Panel Test Switch Nameplate Schedu	2	6	8	
FZ-E-0-X-28		NRS 60 kV Control Panel Wiring Modification Bkr 532	8	16	16	
FZ-E-0-X-29		NRS 60 kV Control Panel Wiring Modification Bkr 562	8	16	16	
FZ-E-0-X-30		60 kV Bkr 532 3-Line Current & Potential Schematic	1	2	4	
FZ-E-0-X-31		60 kV Bkr 562 3-Line Current & Potential Schematic	1	2	4	
FZ-E-0-X-32		60 kV Bkr 532 AC & DC Control Schematic	2	6	6	
FZ-E-0-X-33		60 kV Bkr 562 AC & DC Control Schematic	2	6	6	
FZ-E-0-X-34		60 kV Protection Relays Contact Table - Sht 1	1	2	4	
FZ-E-0-X-35		60 kV Protection Relays Contact Table - Sht 2	1	2	4	
FZ-E-0-X-36		Programmable Automtn Cntrlr 2411-1 Schematic	1	4	6	
FZ-E-0-X-37		Programmable Automtn Cntrlr 2411-2 Schematic	1	4	6	
FZ-E-0-X-38		Substa Communication System Schematic - Sht 1	4	4	6	
FZ-E-0-X-39		Substa Communication System Schematic - Sht 2	4	4	6	
FZ-E-0-X-40		Substa Communication System Schematic - Sht 3	4	4	6	
FZ-E-0-X-41		Station Service Schematic AC System	1	2	4	
FZ-E-0-X-42		Station Service Schematic DC System	1	2	4	
FZ-E-0-X-43		DC Panel Schedules	1	4	6	
FZ-E-0-X-44		AC Panel Schedules	1	4	6	
FZ-E-0-X-45		12 kV Swgr Front Elev & Device Layout - Sht 1	4	6	8	
FZ-E-0-X-46		12 kV Swgr Front Elev & Device Layout - Sht 2	4	6	8	
FZ-E-0-X-47		12 kV Swgr Front Elev & Device Layout - Sht 3	4	6	8	
FZ-E-0-X-48		12 kV Swgr Front Elev & Device Layout - Sht 4	4	6	8	

EXHIBIT A
Substation Design - Fee Calculation Sheet

Item	Dwg No.	Description	PM	Manhours		CAD	CL
				PE			
FZ-E-0-X-49	12 kV Swgr Front Elev & Device Layout - Sht 5		4	6		8	
FZ-E-0-X-50	12 kV Swgr Front Elev & Device Layout - Sht 6		4	6		8	
FZ-E-0-X-51	12 kV Switchgear Device List		2	4		4	
FZ-E-0-X-52	12 kV Switchgear Nameplate Schedule - Sheet 1		1	2		4	
FZ-E-0-X-53	12 kV Switchgear Nameplate Schedule - Sheet 2		1	2		4	
FZ-E-0-X-54	12 kV Switchgear Nameplate Schedule - Sheet 3		1	2		4	
FZ-E-0-X-55	12 kV Switchgear Test Sw Nameplate Schedule - Sht 1		2	4		4	
FZ-E-0-X-56	12 kV Switchgear Test Sw Nameplate Schedule - Sht 2		2	4		4	
FZ-E-0-X-57	12 kV Switchgear Test Sw Nameplate Schedule - Sht 3		2	4		4	
FZ-E-0-X-58	12 kV Switchgear Test Sw Nameplate Schedule - Sht 4		2	4		4	
FZ-E-0-X-59	External Connectns - Termitn Cab No. 1 - Sheet 1		2	8		10	
FZ-E-0-X-60	External Connectns - Termitn Cab No. 1 - Sheet 2		2	8		10	
FZ-E-0-X-61	External Connectns - Termitn Cab No. 2 - Sheet 1		2	8		10	
FZ-E-0-X-62	12 kV Swgr Space Heater Schematic Diagram		1	4		6	
FZ-E-1-X-1	Transf T1 3-Line Current Schematic		1	4		8	
FZ-E-1-X-2	Transf T1 3-Line Potential Schematic		1	4		6	
FZ-E-1-X-3	Transf T1 Protection Differential & Bkr Fail Ptn		2	4		6	
FZ-E-1-X-4	12 kV Swgr Bank 1 SEL 451-4 Rly Contact Table		1	4		6	
FZ-E-1-X-5	12 kV Swgr Single Line Rly & Mtg Diagram - Bank 1		2	6		8	
FZ-E-1-X-6	12 kV Swgr Bkrs 100-1 & 100-2 3-Ln Curr & Pot Schem		1	2		4	
FZ-E-1-X-7	12 kV Swgr Bkrs 101M/A through 104M/A 3-Ln Curr & Pc		1	2		4	
FZ-E-1-X-8	12 kV Swgr Tie Bkr DMA 3-Ln Curr & Pot Schem		1	2		4	
FZ-E-1-X-9	12 kV Swgr Bkrs 105M/A through 107M/A 3-Ln Curr & Pc		1	2		4	
FZ-E-1-X-10	12 kV Swgr Tie Bkr EMA 3-Ln Curr & Pot Schem		1	2		4	
FZ-E-1-X-11	12 kV Swgr Bus D & Bus H 3-Line Pot Schem		1	2		4	
FZ-E-1-X-12	12 kV Swgr Bus E & Bus J 3-Line Pot Schem		1	2		4	
FZ-E-1-X-13	12 kV Swgr Bkr 100-1 DC Control Schematic		1	2		4	
FZ-E-1-X-14	12 kV Swgr Bkr 100-2 DC Control Schematic		1	2		4	
FZ-E-1-X-15	12 kV Swgr Tie Bkr 150-M DC Control Schematic		1	2		4	
FZ-E-1-X-16	12 kV Swgr Tie Bkr 150-A DC Control Schematic		1	2		4	
FZ-E-1-X-17	12 kV Swgr Tie Bkr DMA DC Control Schematic		1	2		4	
FZ-E-1-X-18	12 kV Swgr Tie Bkr EMA DC Control Schematic		1	2		4	
FZ-E-1-X-19	12 kV Swgr Bkrs 101-M through 104-M DC Control Scher		1	2		4	
FZ-E-1-X-20	12 kV Swgr Bkrs 101-A through 104-A DC Control Scher		1	2		4	
FZ-E-1-X-21	12 kV Swgr Bkrs 105-M through 107-M DC Control Scher		1	2		4	
FZ-E-1-X-22	12 kV Swgr Bkrs 105-A through 107-A DC Control Scher		1	2		4	
FZ-E-1-X-23	12 kV Swgr Tie Bkr E-F DC Control Schematic		1	2		4	
FZ-E-1-X-24	12 kV Swgr Bus D & Bus H Diff Ptn 3-Ln Curr Schem		2	4		6	
FZ-E-1-X-25	12 kV Swgr Bus E & Bus J Diff Ptn 3-Ln Curr Schem		2	4		6	
FZ-E-1-X-26	12 kV Swgr DC Cntl Schem Bus D Diff Ptn & Bkr Fail		2	4		6	
FZ-E-1-X-27	12 kV Swgr DC Cntl Schem Bus H Diff Ptn & Bkr Fail		2	4		6	
FZ-E-1-X-28	12 kV Swgr DC Cntl Schem Bus E Diff Ptn & Bkr Fail		2	4		6	
FZ-E-1-X-29	12 kV Swgr DC Cntl Schem Bus J Diff Ptn & Bkr Fail		2	4		6	
FZ-E-1-X-30	Programmable Automtn Cntrlr 2411-S1A Schematic		1	4		6	
FZ-E-1-X-31	Programmable Automtn Cntrlr 2411-S1B Schematic		1	4		6	
FZ-E-2-X-1	Transf T2 3-Line Current Schematic		1	4		8	
FZ-E-2-X-2	Transf T2 3-Line Potential Schematic		1	4		6	
FZ-E-2-X-3	Transf T2 Protection Differential & Bkr Fail Ptn		2	4		6	
FZ-E-2-X-4	12 kV Swgr Bank 2 SEL 451-4 Rly Contact Table		1	4		6	
FZ-E-2-X-5	12 kV Swgr Single Line Rly & Mtg Diagram - Bank 2		2	6		8	
FZ-E-2-X-6	12 kV Swgr Bkrs 200-1 & 200-2 3-Ln Curr & Pot Schem		1	2		4	
FZ-E-2-X-7	12 kV Swgr Bkrs 201M/A through 204M/A 3-Ln Curr & Pc		1	2		4	
FZ-E-2-X-8	12 kV Swgr Tie Bkr FMA 3-Ln Curr & Pot Schem		1	2		4	
FZ-E-2-X-9	12 kV Swgr Bkrs 205M/A through 207M/A 3-Ln Curr & Pc		1	2		4	

EXHIBIT A
Substation Design - Fee Calculation Sheet

Item	Dwg No.	Description	PM	Manhours		
				PE	CAD	CL
FZ-E-2-X-10	12 kV Swgr Tie Bkr GMA 3-Ln Curr & Pot Schem	1	2	4		
FZ-E-2-X-11	12 kV Swgr Bus F & Bus K 3-Line Pot Schem	1	2	4		
FZ-E-2-X-12	12 kV Swgr Bus G & Bus L 3-Line Pot Schem	1	2	4		
FZ-E-2-X-13	12 kV Swgr Bkr 200-1 DC Control Schematic	1	2	4		
FZ-E-2-X-14	12 kV Swgr Bkr 200-2 DC Control Schematic	1	2	4		
FZ-E-2-X-15	12 kV Swgr Tie Bkr 250-M DC Control Schematic	1	2	4		
FZ-E-2-X-16	12 kV Swgr Tie Bkr 250-A DC Control Schematic	1	2	4		
FZ-E-2-X-17	12 kV Swgr Tie Bkr FMA DC Control Schematic	1	2	4		
FZ-E-2-X-18	12 kV Swgr Tie Bkr GMA DC Control Schematic	1	2	4		
FZ-E-2-X-19	12 kV Swgr Bkrs 201-M through 204-M DC Control Scher	1	2	4		
FZ-E-2-X-20	12 kV Swgr Bkrs 201-A through 204-A DC Control Scher	1	2	4		
FZ-E-2-X-21	12 kV Swgr Bkrs 205-M through 207-M DC Control Scher	1	2	4		
FZ-E-2-X-22	12 kV Swgr Bkrs 205-A through 207-A DC Control Scher	1	2	4		
FZ-E-2-X-23	12 kV Swgr Tie Bkr J-K DC Control Schematic	1	2	4		
FZ-E-2-X-24	12 kV Swgr Bus F & Bus K Diff Ptn 3-Ln Curr Schem	2	4	6		
FZ-E-2-X-25	12 kV Swgr Bus G & Bus L Diff Ptn 3-Ln Curr Schem	2	4	6		
FZ-E-2-X-26	12 kV Swgr DC Cntl Schem Bus F Diff Ptn & Bkr Fail	2	4	6		
FZ-E-2-X-27	12 kV Swgr DC Cntl Schem Bus K Diff Ptn & Bkr Fail	2	4	6		
FZ-E-2-X-28	12 kV Swgr DC Cntl Schem Bus G Diff Ptn & Bkr Fail	2	4	6		
FZ-E-2-X-29	12 kV Swgr DC Cntl Schem Bus L Diff Ptn & Bkr Fail	2	4	6		
FZ-E-2-X-30	Programmable Automtn Cntrlr 2411-S2A Schematic	1	4	6		
FZ-E-2-X-31	Programmable Automtn Cntrlr 2411-S2B Schematic	1	4	6		
FZ-E-2-X-32	Programmable Automtn Cntrlr 2411-S12 Schematic	1	4	6		
FZ-F-0-E-1	JMUX Interconnectn, BOM, & Cable Sched	1	4	6		
Construction Package Drawings						
FZ-E-0-X-70	Outdoor General Arrangement - Sht 1	2	12	16		
FZ-E-0-X-71	Outdoor General Arrangement - Sht 2	2	12	16		
FZ-E-0-X-72	Outdoor General Arrangement - Sht 3	2	12	16		
FZ-E-0-X-73	Bus and Equipment - Elev & Sects	2	12	12		
FZ-E-0-X-74	Bus Work Bill of Materials	2	12	12		
FZ-E-0-X-75	60 kV Bus Ltg. & Conduit Plan	2	16	16		
FZ-E-0-X-76	Transf & 12 kV Swgr Ltg. Cable Trench & Conduit Plan	2	16	16		
FZ-E-0-X-77	Conduit Stub-Ups Details - Sht 1	2	8	10		
FZ-E-0-X-78	Conduit Stub-Ups Details - Sht 2	2	8	10		
FZ-E-0-X-79	Outdoor Lighting Details	1	8	8		
FZ-E-0-X-80	MV Conduit Plan	1	4	16		
FZ-E-0-X-81	MV Manhole Development	1	4	10		
FZ-E-0-X-82	Grounding Plan - Sht 1	1	10	12		
FZ-E-0-X-83	Grounding Plan - Sht 2	1	10	12		
FZ-E-0-X-84	Grounding Details	1	4	6		
FZ-E-0-X-85	External Connections - 60 kV Bkr 532	2	10	10		
FZ-E-0-X-86	External Connections - 60 kV Bkr 562	2	10	10		
FZ-E-0-X-87	Circuit Schedule - Sht 1	1	12	12		
FZ-E-0-X-88	Circuit Schedule - Sht 2	1	12	12		
FZ-E-0-X-89	Conduit Schedule	1	8	10		
FZ-E-0-X-90	Sump Pump Wiring Schematic & Installation Details	1	2	4		
FZ-E-0-X-91	Bus and Equipment Identification Nameplates	1	4	6		
FZ-E-0-X-92	Elevation at Pullbox & Pulbox Development	1	6	6		
FZ-E-1-X-32	External Connections - Transf T1 Sht 1	1	8	10		
FZ-E-1-X-33	External Connections - Transf T1 Sht 2	1	8	10		
FZ-E-2-X-33	External Connections - Transf T2 Sht 1	1	8	10		
FZ-E-2-X-34	External Connections - Transf T2 Sht 2	1	8	10		
Subtotal			284	753	1040	0

EXHIBIT A
Substation Design - Fee Calculation Sheet

Item	Dwg No.	Description	PM	Manhours PE	CAD	CL
Mechanical Drawings						
Mechanical Plan and Schedule						
		Subtotal	0	0	0	0
4		Specifications				
		Procurement Specifications				
		01100 - General Requirements	1	2		2
		01200 - Drawings	1	2		4
		01300 - Engineering Data Submittal	1	2		2
		12401 - Swgr Bldg Ancillary Eqpmnt & Furnshngs	1	2		2
		13121 - Power Control Building	2	4		4
		16112 - Raceway Systems	1	2		2
		16113 - Medium Voltage Switchgear Assemblies	4	6		6
		16315 - Medium Voltage Metal-Enclosed Bus	1	2		2
		16470 - AC & DC Station Service Equipment	1	2		2
		16475 - Manual Transfer Switch	1	2		2
		16478 - Automatic Transfer Switch	1	2		2
		16480 - Substation DC Batteries and Charger	1	2		2
		16920 - Substa Control and Relay Panels and Cab	1	2		2
		16950 - Communication Cabinet and Equipment	1	2		2
		Subtotal	18	34	0	36
Construction Specifications						
Civil (See H&A Proposal)						
		02000 - Supplemental Gnl Reqmnts for Civil Impvmnts				
		02060 - Surfacing Removal				
		02240 - Erosion Control				
		02300 - Earthwork				
		02310 - Utility Trenching and Backfilling				
		02380 - Caissons				
		02510 - Water System				
		02513 - Asphalt Concrete Paving				
		02620 - Subdrainage				
		02630 - Sorm Drainage System				
		02785 - Signage, Striping and Markings				
		15177 - Oil-Water Separators				
		Subtotal	0	0	0	0
Structural						
		03100 - Cast-In-Place Concrete Formwork	1	2		2
		03200 - Concrete Reinforcement	1	2		2
		03300 - Cast-In-Place Concrete	1	2		2
		03370 - Concrete Curing	1	2		2
		04220 - Concrete Unit Masonry	1	2		2
		05120 - Structural Steel	1	2		2
		05560 - Metal Fabrications	1	2		2
		07123 - Concrete Waterproofing	1	2		2
		Subtotal	8	16	0	16

EXHIBIT A
Substation Design - Fee Calculation Sheet

Item	Dwg No.	Description	PM	Manhours PE	CAD	CL
		Electrical				
		16080 - Substation Acceptance Testing	1	2		2
		16110 - Manhole, Boxes, Raceways and Fittings	1	2		2
		16120 - Wire and Cables	1	2		2
		16314 - Medium Voltage Switchgear Building	1	2		2
		16350 - 60 kV SF6 Circuit Breaker	1	2		2
		16361 - 60&12kV Group Operated Disc Sw	1	2		2
		16380 - Underground Raceway System	1	2		2
		16390 - Grounding	1	2		2
		16463 - Power Transformers	1	2		2
		16466 - Aluminum Bus and Bus Hardware	1	2		2
		16520 - Yard Lighting	1	2		2
		Subtotal	11	22	0	22
5		Technical Support for Obtaining Permits for:				
		Grading	2	4		
		Drainage	2	6		
		Oil-Water Separator System	1	6		
		Subtotal	5	16	0	0
6		Cost Estimates				
		Civil (See H&A Proposal)				
		Subtotal	0	0	0	0
		Structural	2	10		2
		Subtotal	2	10	0	2
		Electrical	4	20		8
		Subtotal	4	20	0	8
		Mechanical		2		1
		Subtotal	0	2	0	1
7		Calculations				
		Civil (See H&A Proposal)				
		Drainage System				
		Oil-Water Separator System				
		Subtotal	0	0	0	0
		Structural				
		Concrete Foundations and Footings				
		Transformer Foundation	1	3		
		HVCB Foundation	1	2		
		Dead End Structure Footings	1	4		
		Bus Support Structure Footings	1	2		
		Disc Switch Structure Footings	1	2		
		Swgr Bldg Fndtn & Platform Landing	1	4		
		CMU Fire Separation Wall	1	4		

EXHIBIT A
Substation Design - Fee Calculation Sheet

Item	Dwg No.	Description	PM	Manhours PE	CAD	CL
		Steel Structures				
		Dead-End Structures	2	8		
		Disconnect Switch Structures	1	4		
		Bus Support Structures	1	4		
		Subtotal	11	37	0	0
		Electrical				
		Rigid Bus Deflection	1	2		
		Ground Grid	1	2		
		Battery Sizing and Gassing	1	2		
		Battery Charger Sizing	1	1		
		Cable Tray Fill	1	2		
		Conduit Fill	1	2		
		Cable Pull	1	2		
		AC & DC Voltage Drop	1	2		
		Outdoor Lighting Level	1	4	4	
		Indoor Lighting Level	1	1		
		Svce Transformer Sizing	1	2		
		Subtotal	11	22	4	0
		Mechanical				
		Control Building HVAC Sizing	2	8		
		Subtotal	2	8	0	0
8		Design Team Coordination Meetings				
		Civil (See H&A Proposal)				
		Structural	8			
		Architectural (See H&A Proposal)				
		Electrical	24			
		Mechanical	2			
		Subtotal	34	0	0	0
9		Coordination Meetings with Owner				
		Civil (See H&A Proposal)				
		Structural	4			
		Architectural (See H&A Proposal)				
		Electrical	40			
		Mechanical				
		Subtotal	44	0	0	0
10		Project Schedule	0	0		0
		Subtotal	0	0	0	0
11		Assist SVP in Bid Review and Award				
		Technical Support During Bid Process				
		Bid Analysis and Award Recommndtn				
		Civil (See H&A Proposal)				
		Structural	4	6		
		Architectural (See H&A Proposal)				
		Electrical	16	16		
		Mechanical	1	1		
		Subtotal	21	23	0	0
		Total Design Manhours	489	1061	1126	85

EXHIBIT A
Substation Design - Fee Calculation Sheet

Item	Dwg No.	Description	PM	Manhours PE	CAD	CL
Design Fee Calculation						
		Civil				
		Hours Rate Cost				
		PM: 5 \$220 \$1,100				
		PE: 16 \$160 \$2,560				
		APE: 0 \$100 \$0				
		CL: 0 \$70 \$0				
		Subtotal 21 \$3,660		\$3,660		
		Structural				
		Hours Rate Cost				
		PM: 57 \$200 \$11,400				
		PE: 149 \$128 \$19,072				
		CAD: 64 \$102 \$6,528				
		CL: 18 \$72 \$1,296				
		Subtotal 288 \$38,296		\$38,296		
		Electrical				
		Hours Rate Cost				
		PM: 422 \$150 \$63,300				
		PE: 885 \$130 \$115,050				
		CAD: 1062 \$90 \$95,580				
		CL: 66 \$60 \$3,960				
		Subtotal 2435 \$277,890		\$277,890		
		Mechanical				
		Hours Rate Cost				
		PM: 5 \$145 \$725				
		PE: 11 \$120 \$1,320				
		CAD: 0 \$85 \$0				
		CL: 1 \$60 \$60				
		Subtotal 17 \$2,105		\$2,105		
		Expenses				
		Drawing Plotting/Printing \$2,500				
		Document Reproduction \$1,500				
		Travel Expenses				
		Food and Lodging				
		Long Dist Telephone/Fax \$150				
		Mail/Delivery Services				
		Subtotal \$4,150		\$4,150		
		Other Services Provided by Consultants				
		Civil and Architectural Design \$85,380 (Harris & Associates)				
		Subtotal \$85,380		\$85,380		
		Design Fee - Total Services		\$411,481		

EXHIBIT A
Substation Design - Fee Calculation Sheet

Item	Dwg No.	Description	Manhours			
			PM	PE	CAD	CL
1		Construction Support Services	PM	PE	CAD	CL
		Construction Meetings				
		Prepare Agenda for Wkly Constr Mtgs	0			0
		Attend Weekly Construction Meetings	120			
		Prepare Minutes of Weekly Const Mtgs	0			0
		Subtotal	120	0	0	0
2		Equipment Shop Drawing Review	PM	PE	CAD	CL
		Civil (See H&A Proposal)				
		Oil-Water Separator Tanks				
		Drainage and Collection Pipes				
		Catch Basins				
		Subtotal	0	0	0	0
		Structural				
		Concrete Mix Design	1	2		
		Reinforcement Steel Shop Drawings	1	4		
		Steel Structures Shop Drawings	4	16		
		Swgr Bldg. Landing Platform	1	4		
		Subtotal	7	26	0	0
		Electrical				
		HV & MV Disconnect Switch	1	2		1
		Relay/Meter Swbd	1	8		1
		Battery and Charger	1	1		1
		Bus Support Insulators	1	1		1
		Bus Connectors	1	2		1
		Grounding System Material	1	1		1
		Switchgear Building	40	160		12
		Subtotal	46	175	0	18
		Mechanical				
		Heaters & Ventilation System	1	4		1
		HVAC Sizing Calculations	2	8		1
		Subtotal	3	12	0	2
3		Respond to Contractor's RFI's				
		Civil (See H&A Proposal)				
		Structural	4	16	4	2
		Electrical	8	32	16	
		Mechanical	1	2		
		Subtotal	13	50	20	2
4		As-built Drawings				
		Civil As-Built Drawings (See H&A Proposal)				
		Subtotal	0	0	0	0
		Structural As-Built Drawings	2	4	8	
		Subtotal	2	4	8	0

EXHIBIT A
Substation Design - Fee Calculation Sheet

Item	Dwg No.	Description	PM	Manhours PE	CAD	CL
		Electrical As-built Drawings	10	60	120	
		Subtotal	10	60	120	0
		Total CSS Hours	201	327	148	22
		CSS Fee Calculation				
		Civil				
		Hours Rate Cost				
		PM: 0 \$220 \$0				
		PE: 0 \$160 \$0				
		APE: 0 \$100 \$0				
		CL: 0 \$70 \$0				
		Subtotal 0 \$0			\$0	
		Structural				
		Hours Rate Cost				
		PM: 13 \$200 \$2,600				
		PE: 46 \$128 \$5,888				
		CAD: 12 \$102 \$1,224				
		CL: 2 \$72 \$144				
		Subtotal 73 \$9,856			\$9,856	
		Electrical				
		Hours Rate Cost				
		PM: 184 \$150 \$27,600				
		PE: 267 \$130 \$34,710				
		CAD: 136 \$90 \$12,240				
		CL: 18 \$60 \$1,080				
		Subtotal 605 \$75,630			\$75,630	
		Mechanical				
		Hours Rate Cost				
		PM: 4 \$145 \$580				
		PE: 14 \$120 \$1,680				
		CAD: 0 \$85 \$0				
		CL: 2 \$60 \$120				
		Subtotal 20 \$2,380			\$2,380	
		Expenses				
		Printing \$500				
		Travel Expenses \$250				
		Food and Lodging				
		Long Dist Telephone/Fax \$350				
		Mail/Delivery Services \$500				
		Subtotal \$1,100			\$1,100	
		Other Services Provided by Consultants				
		Civil and Architectural (Harris & Associates)			\$19,520	
		CSS Fee - Total Services			\$108,486	
		Total Not-To-Exceed Cost			\$519,967	

EXHIBIT A
Substation Design - Fee Calculation Sheet

Item	Dwg No.	Description	PM	Manhours PE	CAD	CL
Allowance for Any other Services as Requested by SVP						
1		Drawings				
		Manhour Allowance	4	12	16	
		Subtotal	4	12	16	0
2		Calculations				
		Manhour Allowance	2	4		
		Subtotal	2	4	0	0
3		Permits				
		Manhour Allowance	2	4		
		Subtotal	2	4	0	0

Allowance for Any Other Services as Requested by SVP - Fee Calculation

	Hours	Rate	Cost
PM:	8	\$150	\$1,200
PE:	20	\$130	\$2,600
CAD:	16	\$90	\$1,440
CL:	0	\$60	\$0
Subtotal	44		\$5,240
Expenses			\$200
Fee - Allowance for Any Other Services Requested by SVP			\$5,440

CITY OF SANTA CLARA
AGENDA MATERIAL ROUTE SHEET

Council Date: April 27, 2010

SUBJECT: Approval of Call No. 10-1 for Professional Services with MTH Engineers, Inc for Miscellaneous Consulting Services for Engineering, Design and Construction Support of the Replacement of Tasman Substation with Esperanca Substation; and Corresponding Transfer and Allocation of Funds

PUBLICATION REQUIRED:

The attached Notice/Resolution/Ordinance is to be published time(s) at least days before the scheduled meeting/public hearing/bid opening/etc., which is scheduled for , 2010

AUTHORITY SOURCE FOR PUBLICATION REQUIREMENT:

Federal Codes:

Title U.S.C. §
(Titles run 1 through 50)

California Codes:

Code §
(i.e., Government, Street and Highway, Public Resources)

Federal Regulations:

Title C.F.R. §
(Titles run 1 through 50)

California Regulations:

Title California Code of Regulations §
(Titles run 1 through 28)

City

City Charter § *(i.e., 1310. Public Works Contracts. Notice published at least once at least ten days before bid opening)*
 City Code §

1. As to City Functions, by

John C. Prohema
 Department Head

2. As to Legality, by

Gindsay Beavers
 City Attorney's Office / CAO Assignment No 10.0011

3. As to Environmental
 Impact Requirements, by

Kevin L. Riley
 Director of Planning and Inspection

4. As to Substance, by

J. Sparacino
 City Manager

Rev. Date 05/05/09