SOUTHERN CALIFORNIA PUBLIC POWER AUTHORITY
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GLENDORA, CA 91740
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www.scppa.org

ANAHEIM • AZUSA • BANNING • BURBANK • CERRITOS
COLTON • GLENDALE • LOS ANGELES • PASADENA
RIVERSIDE • VERNON • IMPERIAL IRRIGATION DISTRICT

July 17, 2012

To: Generator Management Software and Services Suppliers:

The Southern California Public Power authority (SCPPA) is seeking software products and services that will enable it to schedule, dispatch, settle and report information related to the operation and performance of its Magnolia Power Project (MPP)

MPP is a 310 megawatt combined cycle gas fired power plant in Burbank, California. SCPPA, a California joint powers agency is the Project owner and financing agent. Six California participants, Anaheim, Burbank, Cerritos, Colton, Glendale and Pasadena have contracted with SCPPA to purchase the Project's entire electric capacity and energy output.

SCPPA is inviting your company to offer software products and services described in the Request for Proposals (RFP) for Software Products and Services for the Magnolia Power Project. We are also including the MPP Operating Practices and Procedures Version 2 governing the scheduling and dispatch of the plant to assist you in further understanding our requirements.

Detailed information about the Magnolia Power Project may be found on the SCPPA web site, www.scppa.org.

Questions concerning the Project and this invitation may be directed to Mr. Tom Roth at 213-622-6700 or at rothenergy@sbcglobal.net.

Sincerely,

Bill D. Carnahan
Executive Director

Enclosures:
RFP for Software Products and Services for the Magnolia Power Project
MPP Operating Practices and Procedures Version 2

SOUTHERN CALIFORNIA PUBLIC POWER AUTHORITY

Request for Proposals for Software Products and Services for the Magnolia Power Project

RFP Date: July 18, 2012

Response Deadline: August 31, 2012, by 4:00 p.m. PDT

The Southern California Public Power Authority (SCPPA) is hereby soliciting competitive proposals for software products and services that can schedule, dispatch, settle and report information related to the operation and performance of its Magnolia Power Project (MPP).

Introduction

SCPPA, a joint powers authority and a public entity organized under the laws of the State of California, was created pursuant to the Government Code of California and a Joint Powers Agreement for the purpose of planning, financing, developing, acquiring, constructing, operating and maintaining projects for the generation or transmission of electric energy.

SCPPA also facilitates joint service contracts, at the request of its members, to aggregate like project efforts amongst its Members to increase procurement efficiency. A service contract entered into by SCPPA, pursuant to this RFP, would be utilized directly by the interested Members to serve their respective utilities. The work would be ordered and approved directly by the Members and the billing would be done through SCPPA.

Membership of SCPPA consists of eleven cities and one irrigation district, which supply electric energy within Southern California, including the municipal utilities of the cities of Anaheim, Azusa, Banning, Burbank, Cerritos, Colton, Glendale, Los Angeles, Pasadena, Riverside, and Vernon, and the Imperial Irrigation District (Member Agencies).

SCPPA is governed by its Board of Directors, which consists of representatives from each of its members. The management of SCPPA is under the direction of an Executive Director who is appointed by the Board.

Magnolia Power Project-General Description

The Project consists of a GE 7FA combustion turbine generator, a steam turbine generator and a heat recovery steam generator. Natural gas fuel is transported to the Project meter through the local distribution company, Southern California Gas. A gas marketer schedules, bills and balances all natural gas supplies into the plant meter. Each Project Participant is responsible for making its own arrangements for gas supply to the Project. Energy from the Project is delivered to each of the six Project Participants in amounts not to exceed the Project Participant's percentage share of the Project's output. Deliveries are made through an interconnection with a 69 kV switchyard of Burbank Water and Power (the Project Operating Agent).

Software Requirements and Specifications

The Operating Agent is seeking software that, at a minimum, can perform the following core functions:

- Schedule and account for daily fuel and real time energy deliveries to the plant
- Enable the plant's fuel requirements and energy output to be allocated to each Project participant according to that participant's scheduled position on an individual heat rate curve
- Capture, schedule and account for weather adjusted heat rates, variable costs, ramp rates, stops, starts, maintenance hours, emissions and hours of unit operations
- Calculate, forecast and validate down to five minute increments plant availability, Project participant shares of capacity, heat rates and fuel requirements
- Receive and transmit energy and capacity schedules and actuals to individual Project participants for time periods of one month, one day, one hour and five minutes; all in one (1) megawatt increments
- Audible alarm capabilities

Other Requirements

The Operating Agent is seeking software that can provide the following requirements:

- Offsite Hosting in a secured data center
- Application Program Interface (API) designed to facilitate the transfer of your system's scheduling information to external systems belong to the Project's individual Participants
- A detailed description of the proposed software product and architecture
- A detailed description of additional features included in the basic software and optional features

Financial Information

In offering to respond to this invitation, we are asking you to provide us with the following financial information in a sealed envelope:

- The cost of the software product that itemizes all options
- The cost of any modifications to the software product to accommodate the MPP requirements
- A description of the fees, terms and conditions of any license agreements
- A description of any product service and maintenance agreement and associated costs

Evaluation of Proposals

A selection committee, composed of participating utilities, will evaluate all submitted proposals on the following criteria. Proposers that are within the competitive range of scores in the written proposal may be invited to an oral interview. Factors to be considered, but not limited to, include:

- Competitive Fees and Cost
- Meeting Requirements
- Other Features
- Experience and Quality (anticipated effectiveness)
- Creditworthiness and Qualifications

Proposal Submission Required Elements

- Transmittal Letter: A brief statement of the Respondent's understanding of the work to be done and commitment to perform the work as scheduled including a summary of exceptions taken to the request for proposal requirements, statement of work, specifications, and reference to any proposed contractual terms and conditions required by the proposer. An officer authorized to bind must sign the proposal on behalf of the proposer and must include the following declarations on the Transmittal Letter:

  > *"This proposal is genuine, and not sham or collusive, nor made in the interest or in behalf of any person not herein named; the proposer has not directly or indirectly induced or solicited any other proposer to put in a sham bid, or any other person, firm or corporation to refrain from submitting a proposal; and the proposer has not in any manner sought by collusion to secure for themselves an advantage over any other proposer."*

- Applicant Information: Provide legal name of Company, Physical Street Address, e-mail address, Telephone, Name and Title of individuals authorized to represent the Respondent.

- Proposal: in order to be considered, proposals shall address all twelve topics below.

1. Please describe the system architecture.

2. Customization/Configurability: Once installed what is involved in modifying the software? What portions if any of the software is user modifiable? Is there a source code involved? Does the code come with the license? If not, can it and for how much?

3. Service/Maintenance Fees: Please describe the product's service and maintenance program. Describe what is within the scope of the service and maintenance program and what is not within the scope. Is there an hourly/daily/monthly limit associated with the service contract? Describe how the first year service and maintenance is handled. Do you offer discounts for multiple year service/maintenance contracts? Where is the servicing location? Does the service fee cover travel costs, if not, what class of travel/lodging is proposed? Does the service fee cover a 24/7 help desk function? What location will the help desk function be provided from.

4. Upgrades: does the license include upgrades? For what period of time? At what price?

5. Customer Improvements: Does the license require the customer to grant back. Is the customer entitled to improvements made by other customers?

6. User Reports: Does the software come with user reports or are all reports custom created? Can the customer easily generate his/her own reports? Using what tool? Are there generic samples of reports available for us to inspect. Provide samples of all available reports.

7. Value-Added Services: What, besides the products offered to address MPPs immediate requirements, are in your catalogue of products and services that may be of possible benefit to MPP and or the Participants?

8. Decision: Please list the three most important reasons and or features of your product and or services and why your product should be chosen over any of the others.

9. Schedule: MPP will undergo an extensive maintenance outage beginning November 21, 2012 and continue through March 2013. Please indicate the capability to have your products installed and in service by March 2013 if you are the selected vendor and contracts are executed.

10. Applications: of the applications you have sold to date, which one(s) are most similar to the requirements indicated by MPP.

11. From what location will the product be hosted? Where is the back-up hosting site located?

12. To what standard do you secure your data centers?

- Fees: SCPPA is interested in discovering the Respondent's capabilities and pricing to make an informed decision and proceed to more specific negotiations. Pricing should be made based on good faith estimates of the requirements defined in this request for proposals. Detail specific examples or estimates of the fees. Describe how the fees will be determined. Prior to contract award, the successful bidder shall supply a detailed breakdown of the applicable overheads and fringe benefit costs that are part of the labor rates and other direct costs associated with the services to be performed.

- Experience: Respondent will clearly identify project participants and management team.

    1. Describe your firm's experience as may be applicable to this request for proposals, your organizational structure, management qualifications, and other contract related qualifications, including number of years firm has been in business.

    2. Specify key employees and describe their qualifications, experience and duties related to this request for proposals, including the office location(s) where work will be performed.

    3. Provide a commitment statement for the retention and use of key employees as proposed, their availability to initiate and sustain the proposal, as well as planned supplement if not available to assure project delivery.

    4. State whether proposer will use subcontractors to perform services pursuant to the contract. Should the use of subcontractors be offered, the proposer shall provide the same assurances of competence for the subcontractor, plus the demonstrated ability to manage and supervise the subcontracted work. Subcontractors shall not be allowed to further subcontract with others for work which is integral to the proposed solution. The provisions of this contract shall apply to all subcontractors in the same manner as to the proposer.

    5. Respondent shall indicate any and all pending litigation that could affect the viability of respondent's proposal, continuance of existing contracts, operation or financial stability.

    6. Describe whether the proposer has, within the last three years, rendered any service to SCPPA or to any of SCPPA's Member Agencies, either as a contractor or subcontractor, either under the current proposer's name or any other name or organization. If so, please provide details (status as prime or subcontractor, brief description of the contract, contract start and end dates, the contract administrator name, and total actual contract expenditures).

- User References: Please provide any user references that you may have.

Proposal Submission Delivery Requirements

There will be no initial proposer's conference associated with this request for proposals. Clarification questions may be addressed to Tom Roth at rothenergy@sbcglobal.net.

Seven (7) hard copies of your response, including a transmittal letter of authentic offer with wet-ink authority signature, and any supporting documentation should be mailed to 4:00 p.m. PDT on August 31, 2012 to:

Roth Energy Company
Attention: Mr. Tom Roth
545 South Figueroa St. Suite 1235
Los Angeles, CA 90071

One (1) hard copy of your response, including a transmittal letter and any supporting documentation should be mailed to 4:00 p.m. PDT on August 31, 2012 to each of the following:

Mr. Fred LeBlanc
City of Burbank Water and Power
164 W. Magnolia Blvd. Burbank, CA 91503
818-238-3560

Ms. Kelly Nguyen
Southern California Public Power Authority
1160 Nicole Court
Glendora, CA 91740
626-793-9364

One electronic copy of your proposal should also be e-mailed to rothenergy@sbcglobal.net.

No contact should be made with the Board of Directors, committee or working group representatives, or SCPPA Participating Member Agencies concerning this request for proposals.

All information received by SCPPA in response to this request for proposals is subject to the California Public Records Act and all submissions may be subject to review in the event of an Audit.

Proposal Terms and Conditions

1. SCPPA reserves the right to cancel this RFP at any time, reject any and all proposals and to waive irregularities.
2. SCPPA shall determine at its sole discretion the value of any and/or all proposals including price and non-price attributes.
3. Proposals may be sub-divided or combined with other proposals, at SCPPA's sole discretion.

4. SCPPA shall perform an initial screening evaluation to identify and eliminate any proposals that are not responsive to the request for proposals, do not meet the minimum requirements set forth in the request for proposals, are clearly not economically competitive with other proposals, or are submitted by respondents that lack appropriate creditworthiness, sufficient financial resources, or qualifications to provide dependable and reliable services.

5. SCPPA reserves the right to submit follow up questions or inquiries to request clarification of information submitted and to request additional information from any one or more of the respondents.

6. SCPPA reserves the right, in its sole discretion, to make the award to that respondent, who, in the opinion of SCPPA, will provide the most value to SCPPA and its customers.

7. SCPPA may decline to enter into any potential engagement agreement or contract with any respondent, terminate negotiations with any respondent, or to abandon the request for proposal process in its entirety.

8. SCPPA reserves the right to make an award to the other than the lowest price offer or the proposal evidencing the greatest technical ability or other measure if SCPPA determines that to do so would result in the greatest value to SCPPA and its Member Agencies.

9. Those respondents who submit proposals agree to do so without legal recourse against SCPPA, its Member Agencies, their directors, officers, employees and agents for rejection of their proposal(s) or for failure to execute or act on their proposal for any reason.

10. SCPPA shall not be liable to any respondent or party in law or equity for any reason whatsoever for any acts or omissions arising out of or in connection with this request for proposals.

11. SCPPA shall not be liable for any costs incurred by any respondents in preparing any information for submission in connection with this RFP process or any and all costs resulting from responding to this RFP. Any and all such costs whatsoever shall remain the sole responsibility of the respondent

12. SCPPA may require certain performance assurances from proposers prior to entering into negotiations for a proposed project. Such assurances may potentially include a requirement that proposers provide some form of performance security.

13. Either SCPPA collectively or Member Agencies individually may respond to, or enter into negotiations for a proposal. SCPPA is not responsible or liable for individual Member Agency interactions with the respondent which are not entirely contained within SCPPA's option or election to engage the respondent as defined within the Terms and Conditions herein.

14. Submission of a Proposal constitutes acknowledgement that the Proposer has read and agrees to be bound by the terms and specifications of this RFP and any addenda subsequently issued prior to the due date for a Proposal.

15. Information in this RFP is accurate to the best of SCPPA's knowledge but is not guaranteed to be correct. Proposers are expected to complete all of their diligence activities prior to entering into any final contract negotiations with SCPPA.

16. SCPPA reserves the right to enter into relationships with more than one vendor, can choose not to proceed with any Proposer with respect to one or more categories of services, and

can choose to suspend this RFP or to issue a new RFP that would supersede and replace this one.

Additional Requirements for Proposal

1. Consideration of Responses: Submitted proposals should be prepared simply and economically, without the inclusion of unnecessary promotional materials. Proposals should be submitted on recycled paper that has a minimum of thirty percent (30%) post-consumer recycled content and duplex copied (double-sided pages) where applicable.

2. Insurance, Licensing, or other Certification: If selected, the proposer will be required to maintain sufficient insurance, licenses, or other required certifications for the type of work being performed. SCPPA or its Member Agencies may require specific insurance coverage to be established and maintained during the course of work and as a condition of award or continuation of contract.

3. Non-Discrimination/Equal Employment Practices/Affirmative Action Plan: If selected, the proposer and each of its known subcontractors may be required to complete and file an acceptable Affirmative Action Plan. The Affirmative Action Plan may be set forth in the form required as a business practice by the Department of Water and Power of the City of Los Angeles which is SCPPA's largest Member Agency.

4. Living Wage Ordinance: If selected, the proposer may be required to comply with the applicable provisions of the City of Los Angles Living Wage Ordinance and the City of Los Angeles Service Contract Workers Retention Ordinance. The Living Wage Ordinance provisions are found in Section 10.36 of the Los Angeles City Administrative Code; and the Service Contract Workers Retention Ordinance are found in Section 10.37 of the Los Angeles Administrative Code (SCWRO/LW0).

5. Prevailing Wage Rates: If selected, and if the project is funded in any part by resources with such an obligation, the respondent may be required to conform to prevailing wage rates applicable to the location(s) where any work is being performed.

6. Child Support Policy: If selected, proposer may be required to comply with City of Los Angeles Ordinance No. 172401, which requires all contractors and subcontractors performing work to comply with all reporting requirements and wage earning assignments and wage earning assignments relative to court ordered child support.

7. Supplier Diversity: Proposers shall take reasonable steps to ensure that all available business enterprises, including Women Business Enterprises (WBEs) and Minority Business Enterprises (MBEs) have an equal opportunity to compete for and participate in the work being requested by this request for proposals. Efforts to obtain participation of MBEs, WBEs, and other business enterprises could reasonably be expected to produce a level of participation by interested subcontractors including 15 percent MBE and 7 percent WBE. SCPPA's Supplier Diversity program is modeled after that of the Los Angeles Department of Water and Power. Further information concerning the Supplier Diversity Program may be obtained from the Purchasing Division of the Los Angeles Department of Water and Power.

Magnolia Power Project

Operating Practices and Procedures

Version 2
May 19, 2005

Table of Contents

Introduction

Section 6.2 of the Power Sales Agreement (PSA) and Section 9.4 of the Construction Management and Operating (CM&O) Agreement set forth the practices and procedures that the Operating Agent must submit to the Coordinating Committee for its review, modification and approval. The practices and procedures that relate to the operation of the Generation Station in the PSA (Sections 6.2.7, 6.2.9, 6.2.10, 6.2.11 and 6.2.14) and CM&O Agreement (Sections 9.4.1, 9.4.4, 9.4.8, 9.4.9, 9.4.10 and 9.4.11) are intended to be satisfied by this document, entitled *Magnolia Power Project Operating Practices and Procedures*.

This document incorporates procedures reviewed and approved by the Coordinating Committee: *Procedures for Delivering Participants' Generation Entitlement Shares of Energy to Contract Points of Delivery and for Curtailment of Service*, approved in August 2004, and *Electric Metering, Accounting and Scheduling Protocols and Procedures*, reviewed in September 2004. Scheduling protocols from the *Scheduling Services Agreement* are also incorporated.

This document was prepared by the Magnolia Operating Committee, which was formed to serve in an advisory capacity to the Operating Agent.

During the first year of operation, the Operating Agent will need to have maximum flexibility to operate the Generation Station in a prudent manner for the purpose of gaining experience and knowledge in the most reliable, efficient, and economical operating methods. Accordingly, the Operating Committee believes that simplified operating practices and procedures are required during this time period. As necessary, the *Operating Practices and Procedures* will be amended based on experience gained from operating the Generation Station. Any Participant shall have the right to call for a meeting of the Operating Committee to discuss proposed amendments to the *Operating Practices and Procedures.* Any amendments will be subject to the approval of the Coordinating Committee.

It is the intention of the Operating Committee to amend these *Operating Practices and Procedures* within one year of the Generation Station's Date of Firm Operation to incorporate additional products, scheduling flexibility, and improved procedures that would increase Participants' ability to realize the optionality value of the Generation Station while maintaining prudent and reliable operations.

Representatives of the Participants' scheduling groups, under the supervision of the Operating Committee, will develop detailed operating protocols based on the *Operating Practices and Procedures* approved by the Coordinating Committee.

Effective Date

These *Operating Practices and Procedures* shall become effective upon the Date of Firm Operation.

Major Features

Features Included in *Operating Practices and Procedures*

1. Participant rights under the Power Sales Agreement are preserved.
2. One-year trial for the *Operating Practices and Procedures.*
3. Two products: Capacity and Energy.
4. Individual heat rate curves for each Participant will be used as the basis for determining fuel usage, billing and settlements.
5. Each Participant may provide its own fuel.
6. Gas management is performed by a third party.
7. Plant optimization is achieved through Bilateral Transactions or through the scheduling of Participant Reserve Capacity with the Operating Agent.
8. The Operating Agent is responsible for protecting the integrity of the Generation Station at all times.

Features Deferred to Future Amendments

The Operating Committee recognizes that certain desirable operating practices and procedures have been deferred or incompletely addressed in these *Operating Practices and Procedures.* It is envisioned that the updated *Operating Practices and Procedures* may include:

1. The ability to schedule Capacity and ancillary service products such as operating reserve, spinning reserve, regulating reserve, contingency reserve and non-spinning reserve as such terms are defined in the Western Electricity Coordinating Council, NERC/WECC Planning Standards and Minimum Operating Reliability Criteria, Definitions;
2. Procedures and rules governing a Participant's ability to schedule below the Participant Minimum Normal Range Capability;
3. Updated scheduling and fuel cost allocation procedures that result in increased economic benefit to the Participants and/or more reliable and cost effective operation of the Generation Station;
4. Specific and clear procedures for utilization of Participant Reserve Capacity and Participant Energy Schedules that increase value, and procedures for allocation of any benefits derived.

Products of the Generation Station

Products Available Under *Operating Practices and Procedures*

The Operating Agent will provide Products to the Participants in conformance with the operational constraints of the Generation Station. Each Participant will submit a Participant Energy Schedule in units of megawatt hours per hour for each hour of each day of the relevant production period.

Products to be Available Under Future Amendments

It is envisioned that the updated *Operating Practices and Procedures* may include the ability for the Generation Station to produce additional products for the benefit of Participants, including:

- Ancillary Service Capacity in the form of Regulation, Spinning and Non-Spinning Operating Reserves, and Replacement Reserves;
- Real-time (intra-hour) imbalance Energy

Notification Timelines

Month Ahead: Operating Agent provides Participants with a schedule of the Generation Station's Month-Ahead Available Generating Capability by the 15th of each month. Participants will provide Operating Agent the Hourly Participant Energy Schedules by the 20th of each month for the following month. Operating Agent will confirm each Participant's Energy Schedule as soon as practicable.

Two Days Ahead: Operating Agent provides Participants, by 5:00 PM two Preschedule days prior to the day WECC Preschedules are due, the Available Generating Capability and Participant Energy Schedules for the Day of Production. In addition, Operating Agent provides Participants an estimate of the Minimum Generating Capability, Maximum Generating Capability, Heat Rate Curve, ramp rates, minimum run times and such other information that the Operating Agent is capable of providing the Participants required to plan and submit Participant Energy Schedules.

Prescheduled Energy: Participants provide initial Participant Energy Schedules by 6:00 AM on the day WECC Preschedules are due and final Participant Energy Schedules by 6:15 AM. The Operating Agent confirms the Participant Energy Schedules by 9:00 AM.

Hourly: Participants provide Hour-Ahead Participant Energy Schedules forty-five (45) minutes prior to each hour.

Within the Hour: Due to being located in the LADWP control area, Burbank and Glendale may submit Participant Energy Schedules within their respective Generation Entitlement Shares of the capability of the Generation Station with ten (10) minute notification for each ten (10) minute increment within the hour. Due to being located in the ISO control area, Anaheim, Cerritos, Colton and Pasadena may not submit Participant Energy Schedules within the hour until after an appropriate cost/benefit analysis has been performed.

WECC Protocols: Participants' Energy Schedules must comply with WECC Scheduling requirements as published from time to time.

Gas Marketer

1. The Operating Agent will use a Gas Marketer and Participants to facilitate and manage all physical fuel supply and fuel imbalances for the Generation Station.
2. The Gas Marketer shall be the default provider of gas to the Generation Station for each Participant that does not arrange for physical delivery of gas from alternative sources. Terms of such service may be negotiated individually.
3. The Gas Marketer shall be the default purchaser/provider of any imbalance gas.
4. The Gas Marketer may sell gas directly to Participants and shall accommodate Participants that wish to physically deliver gas directly or through third parties into the Gas Marketer's pool.
5. The Gas Marketer shall be responsible for allocating costs/credits associated with imbalance fuel purchases/sales based on procedures approved by the Participants and fuel usage data provided by the Operating Agent.
6. Each Participant will be responsible for making its own decisions to hedge its fuel supply either physically or financially.
7. The Operating Agent will be responsible for notifying the Gas Marketer on a timely basis of each Participant's projected and actual gas consumption.
8. Participants will be billed by SCPPA for invoices submitted by the Gas Marketer for fuel procured by the Gas Marketer on their behalf.
9. The Coordinating Committee shall approve the selection of the Gas Marketer.

Start Up (0 to 121 MW)

[Note that all ranges of Capacity are illustrative, and not exact, for the purpose of setting forth the *Practices and Procedures*]

1. The Operating Agent will be responsible for determining when the Generation Station will start up. In making such a determination, the Operating Agent will take into consideration the Generation Station's mechanical availability, minimum run times, permitting availability, warranty status and the presence of a Participant Energy Schedule from one of the Participants at least equal to its Participant Minimum Normal Range Capability. Unless a shorter timeframe is unanimously agreed to by the Participants, such Participant Energy Schedule shall be submitted in accordance with the Notification Timeline, unless all the Participants have submitted contemporaneously Participant Energy Schedules equal to their respective Participant Minimum Normal Range Capability and the Operating Agent determines that the schedule is feasible.

2. As provided in Section 9.6 of the Power Sales Agreement, Start Up shall be avoided if, through a Bilateral Transaction, a Participant(s) submitting its Participant Energy Schedule is provided the following:

- Energy in an amount equivalent to its Participant Energy Schedule, and of a kind equal to WSPP Schedule C (Firm Energy) and
- Capacity equivalent to the difference between the Participant Total Capacity Availability and Participant Minimum Normal Range Capability

Such Energy and Capacity shall be provided at costs equal to or less than the costs that would have resulted had the Generation Station actually been started up.

Energy costs will be measured using the Gas Daily-Daily Midpoint for the day(s) of production plus the LDC distribution charges to the Generation Station meter times the scheduling Participant's position on its Participant Heat Rate Curve plus Variable Costs.

Capacity costs will be zero based on the fact that capacity is already paid for through fixed debt service payments.

The delivery point will be either at the scheduling Participants' Contract Point of Delivery or another mutually agreed delivery point.

In the event a Start Up is initiated by the Operating Agent or a Participant(s) during the course of a Bilateral Transaction as described in this Section, unless otherwise agreed, the non-Generation Station energy and capacity shall revert to the providing Participant(s) when the Generation Station reaches its Minimum Generating Capability.

Start Up avoidance is subject to the operational capability of the Generation Station as determined by the Operating Agent.

For example: Colton's Participant Total Capacity Availability is 13 MW and its Participant Minimum Normal Range Capability is 5 MW. Colton's Participant Energy Schedule is 10 MWh/h for 24 hours and no other Participant submits a Participant Energy Schedule for that time frame. The Gas Daily-Daily Mid-Point, SoCalBorder plus LDC distribution charges to the Generation Station meter is $5.00/MMBtu, Colton's Participant Energy Schedule is at a heat rate of 7,000 Btu/kWh on its Participant Heat Rate Curve and the Variable Costs are $3.00/MWh.

Participant(s) can avoid the Start Up of the Generation Station for the Colton Participant Energy Schedule by providing the following at Colton's Contract Point of Delivery (RS-E) or another mutually agreed delivery point:

- 10 MWh/h to Colton for a cost of $38.00/MWh ($5.00/MMBtu times 7,000 Btu/kWh times 1,000 plus $3.00/MWh equals $38.00/MWh), or less, and
- 3 MW of capacity upward and 5 MW of capacity downward at no cost

Assume Colton is receiving the above energy and capacity through a Bilateral Transaction from Burbank. After the Bilateral Transaction, a Start Up is then initiated, either by the Operating Agent or a Participant. When the Generation Station reaches its Minimum Generating Capability, then Burbank takes back the energy and capacity it had been supplying to Colton.

3. When the unit is started up, each Participant will be required to submit a Participant Energy Schedule at least equal to its Participant Minimum Normal Range Capability. Depending on the time required for Start Up, the amount of Energy scheduled from the beginning of start up to the Minimum Generating Capability might be staged in hourly increments.

   For example: Assume the Generation Station requires a cold start that normally requires four hours. The sum of the first hour of Participant Energy Schedules would be 25 MWh/h, the second hour would be 50 MWh/h, the third hour would be 75 MWh/h, the fourth hour would be 100 MWh/h, and the fifth hour (when the Generation Station is at its Minimum Generating Capability) would be 121 MWh/h.

4. The Operating Agent may unilaterally initiate a Start Up of the Generation Station if, in its sole discretion, such a start up is necessary for reasons relating to permits, equipment testing, or other reasons that meet the test of Prudent Utility Practice. In such event, the Start Up cannot be avoided by a Bilateral Transaction as described in Section 2, above.

5. All Start Up costs will be shared among the Participants by Generation

Entitlement Share.

Shut Down

1. The Operating Agent will be responsible for determining when the Generation Station will be shut down and for what period of time. In making such a determination, the Operating Agent will take into consideration the Generation Station's minimum run times, mechanical, regulatory and safety requirements.

2. The Operating Agent may unilaterally initiate a Shut Down of the Generation Station if, in its sole discretion, such a Shut Down is necessary for reasons relating to permits, equipment testing, or other reasons that meet the test of Prudent Utility Practice.

3. If the Operating Agent has not unilaterally initiated a Shut Down of the Generation Station, a Shut Down may not occur without a unanimous vote of the Participants' representatives. A unanimous vote will be deemed to have occurred when the sum of all Participant Energy Schedules equals zero.

   In the event there is not a unanimous vote of the Participants' representatives to shut down the Generation Station, the Generation Station shall be shut down provided a Participant(s) not voting for a Shut Down is provided, through a Bilateral Transaction, the following:

- Energy in an amount equivalent to its Participant Energy Schedule, and of a kind equal to WSPP Schedule C (Firm Energy) and
- Capacity equivalent to the difference between it Participant Total Capacity Availability and Participant Minimum Normal Range Capability

   Such Energy and Capacity shall be provided at costs equal to or less than the costs that would have resulted had the Generation Station actually been shut down.

   Energy costs will be measured using the Gas Daily-Daily Midpoint for the day(s) of production plus the LDC distribution charges to the Generation Station meter times the scheduling Participant's position on its Participant Heat Rate Curve plus Variable Costs.

   Capacity costs will be zero based on the fact that capacity is already paid for through fixed debt service payments.

   The delivery point will be either at the scheduling Participants' Contract Point of Delivery or another mutually agreed delivery point.

   In the event a Start Up is initiated by the Operating Agent or a Participant(s) during the course of a Bilateral Transaction as described in this Section, unless otherwise agreed, the non-Generation Station energy and capacity shall revert to the providing Participant(s) when the Generation Station reaches its Minimum Generating Capability.

For example: All Participants with the exception of Colton have voted to shut down the Generation Station. Colton's Participant Total Capacity Availability is 13 MW and its Participant Minimum Normal Range Capability is 5 MW. Colton's Participant Energy Schedule is 5 MWh/h for 24 hours. The Gas Daily-Daily Mid-Point, SoCalBorder plus LDC distribution charges to the Generation Station meter is $5.00/MMBtu, Colton's Participant Energy Schedule is at a heat rate of 7,000 Btu/kWh on its Participant Heat Rate Curve and the Variable Costs are $3.00/MWh.

Participant(s) can shut down the Generation Station by providing the following at Colton's Contract Point of Delivery (RS-E) or another mutually agreed delivery point:

- 5 MWh/h to Colton for a cost of $38.00/MWh ($5.00/MMBtu times 7,000 Btu/kWh times 1,000 plus $3.00/MWh equals $38.00/MWh), or less, and
- 8 MW of capacity upward

Assume Colton is receiving the above energy and capacity through a Bilateral Transaction from Burbank. After the Bilateral Transaction, a Start Up is then initiated, either by the Operating Agent or a Participant. When the Generation Station reaches its Minimum Generating Capability, then Burbank takes back the energy and capacity it had been supplying to Colton.

Operations in Normal Range (121 to 242 MW)
"Evaporator Off" (121 to 227 MW)
"Evaporator On" (227 to 242 MW)

1. Each Participant will be required to submit a Participant Energy Schedule at least equal to its Participant Minimum Normal Range Capability when the Generation Station is operating in the Normal Range.

2. Each Participant will be billed for gas usage at the heat rate on its Participant Heat Rate Curve applicable to its Participant Energy Schedule.

3. For example: Burbank's Generation Entitlement when the Generation Station is operating at 242 MW is 75 MW (Burbank's Participant Maximum Normal Range Capability); when the Generation Station is operating at 121 MW, Burbank's entitlement is 38 MW (Burbank's Participant Minimum Normal Range Capability). The Generation Station's heat rate at 242 MW is 7000 Btu/kWh; at 121 MW, the heat rate is 8000 Btu/kWh. When Burbank submits a Participant Energy Schedule of 75 MWh/h, it will be charged for an amount of natural gas equivalent to a heat rate of 7000 Btu/kWh. When Burbank submits a Participant Energy Schedule of 38 MW, it will be charged for an amount of natural gas equivalent to a heat rate of 8000 Btu/kWh.

4. A Participant(s) may receive Energy above its own Participant Total Capacity Availability by entering into a Bilateral Transaction with another Participant(s) using that Participant's Participant Reserve Capacity.

5. A Participant(s) may receive additional Energy in the Normal Range (referred to as Virtual Duct Firing) when its Participant Energy Schedule equals its Participant Maximum Normal Range Capability and Participant Reserved Capacity is available from other Participant(s) in the Normal Range. The Participant(s) scheduling Virtual Duct Firing would do so through Bilateral Transactions or by scheduling directly with the Operating Agent.

6. The economic benefits of Virtual Duct Firing will be allocated among the Participants in proportion to the respective amount of Participant Reserve Capacity each Participant holds in the Normal Range during the period of time when the Virtual Duct Firing is scheduled.

   For example: The Generation Station is operating at 222 MW. Anaheim's Participant Energy Schedule, 92 MWh/h, is at its Participant Maximum Normal Range Capability, 92 MW. Glendale has a Participant Energy Schedule of 25 MWh/h and a Participant Reserve Capacity of 15 MW. Pasadena has a Participant Energy Schedule of 10 MWh/h and a Participant Reserve Capacity of 5 MW. All other Participants have scheduled their Participant Energy Schedule at their respective Participant Maximum Normal Range Capability. Anaheim wants another 15 MWh/h of Energy, but is unwilling or unable to enter into a

Bilateral Transaction with either Glendale or Pasadena for their Participant Reserve Capacity. Anaheim submits a Participant Energy Schedule for 15 MWh/h in the Duct Firing Range directly with the Operating Agent. The Generation Station increases its output from 222 MW to 237 MW and is still operating in the Normal Range. Anaheim gets billed for natural gas as though it were operating at 107 MW on its Participant Heat Rate Curve. Glendale and Pasadena receive credits to their gas usage in the ratio of the Participant Reserve Capacity used. In this example Glendale would receive 75 percent of the credit and Pasadena would receive 25 percent of the credit.

7. Gas used during Virtual Duct Firing is not deducted from a Participant's Daily or Annual Duct Firing Gas Allocation.

Operations in the Duct Firing Range (242 to 295 MW)

1. The Operating Agent will be responsible for determining when the Generation Station will be physically operated in the Duct Firing Range.

2. A Participant(s) may submit a Participant Energy Schedule in the Duct Firing Range only after if its Participant Energy Schedule exceeds the Participant Maximum Normal Range Capability.

3. Each Participant will be billed for gas usage at the heat rate on its Participant Heat Rate Curve applicable to its Participant Energy Schedule.

4. A Participant(s) may receive Energy above its own Participant Total Capacity Availability by entering into a Bilateral Transaction with another Participant(s) using that Participant's Participant Reserve Capacity.

5. Each Participant will have a Participant Duct Firing Entitlement, a Participant Annual Duct Firing Gas Allocation, and a Participant Daily Duct Firing Gas Allocation based on Generation Entitlement Share and licensing limitations.

   For example: The Duct Firing Capacity is 53 MW (from 242 MW to 295 MW), the Annual Duct Firing Gas Allocation is 572 million cubic feet, and the Daily Duct Firing Gas Allocation is 6.86 million cubic feet. Anaheim has a Generation Entitlement Share of 38.02 percent. Anaheim's Participant Duct Firing Entitlement is 20.15 MWh/h. Anaheim's Participant Annual Duct Firing Gas Allocation is 217.5 million cubic feet. Anaheim's Participant Daily Duct Firing Gas Allocation is 2.61 million cubic feet. (38.02 percent of 53 MW, 572 million cubic feet/year, and 6.86 million cubic feet /day, respectively)

6. When a Participant's Participant Energy Schedule is in the Duct Firing Range, the amount of gas it uses in the Duct Firing Range will be deducted from its Participant Daily and Annual Duct Firing Gas Allocation. Once a Participant has used its entire Participant Daily Duct Firing Gas Allocation, it may not submit a Participant Energy Schedule in the Duct Firing Range until the following day. Once a Participant has used its entire Participant Annual Duct Firing Gas Allocation, it may not submit a Participant Energy Schedule in the Duct Firing Range until the following year.

7. The Operating Agent may adjust Participant Energy Schedules in the Duct Firing Range to conform to the physical constraints of the Generation Station. It is anticipated that Duct Firing cannot be physically initiated at less than 5 MW. Thereafter, it can be operated at increments of approximately 2 MW. If the sum of the Participant Energy Schedules in the Duct Firing Range does not meet the minimum level of 5 MW, the Operating Agent will reduce the Participant Energy Schedules and not initiate Duct Firing.

8. Any Participant that has a Participant Duct Firing Entitlement less than 5 MW can submit a Participant Energy Schedule in the Duct Firing Range up to 5 MWh/h when there are no other Participants submitting Participant Energy Schedules in the Duct Firing Range. If other Participants subsequently submit Participant Energy Schedules in the Duct Firing Range such that the Participant Energy Schedule of 5 MWh/h prohibits the other Participants from receiving their Participant Duct Firing Entitlement, then the schedule of the Participant that originally submitted the Participant Energy Schedule for 5 MWh/h in the Duct Firing Range will have its Participant Energy Schedule in the Duct Firing Range reduced to its Participant Duct Firing Entitlement.

   For example: The Participant Duct Firing Entitlement of Cerritos is 2.28 MW (Cerritos' Generation Entitlement Share, 4.29 percent, times 53 MW). Cerritos is the only Participant that submits a Participant Energy Schedule in the Duct Firing Range. The Operating Agent schedules 5 MWh/h for Cerritos in the Duct Firing Range. All other Participants then submit Participant Energy Schedules for their full amounts of Participant Duct Firing Entitlement. The Operating Agent then reduces Cerritos' Participant Energy Schedule in the Duct Firing Range to its Participant Duct Firing Entitlement.

Operations in the Steam Injection Range (295 to 310 MW)

1. The Operating Agent will be responsible for determining when the Generation Station will be operated in the Steam Injection Range.

2. All Energy output and costs for operations in the Steam Injection Range are shared among the Participants by Generation Entitlement Share.

Scheduling of Energy

Scheduling of Energy at Contract Points of Delivery

Each Participant shall submit Participant Energy Schedules in increments of whole megawatts over each entire hour at its respective Contract Point of Delivery.

Transmission Losses

The transmission losses from the high side of the generation step-up transformers of the Generation Station to the Contract Points of Delivery are agreed to be as follows:

Transmission Losses at Contract Points of Delivery	
Contract Point of Delivery	**Transmission Losses (percent)**
Olive Switching Station	0.0
Receiving Station E	0.8

Scheduling of Output at High Side of Generation Step Up Transformers

For the Participant Energy Schedule of each participant at the Contract Point of Delivery, the Operating Agent shall operate the Generation Station such that the Energy output at the high side of the generation step-up transformers equals the Participant Energy Schedule at the Contract Point of Delivery, increased by the transmission losses from Table 1.

Table 2 illustrates the application of the procedure described above.

Calculation of Energy scheduled for generation based on Participant Energy Schedules				
Participant	Contract Point of Delivery	Participant Energy Schedule submitted to Operating Agent at Contract Point of Delivery (MWh/h)	Transmission Loss for Participant to Contract Point of Delivery (percent)	Energy scheduled at high side of generation step up transformers (MWh/h)
Anaheim	RS-E	80	0.8	80.65
Burbank	Olive	70	0	70.00
Cerritos	RS-E	10	0.8	10.08
Colton	RS-E	10	0.8	10.08
Glendale	Olive	30	0	30.00

Pasadena	RS-E	15	0.8	15.12
Total		215		215.93

Energy and Gas Accounting

Accounting for Energy

1. With the exception of a curtailment to the Burbank network or the Generation Station tripping off line, Burbank will deliver the Participant Energy Schedule of each Participant at its respective Contract Point of Delivery.

2. The Generation Station will usually generate either slightly more or less Energy than required meeting the delivery schedules.

3. To the extent that the Generation Station generates more Energy in an hour than scheduled, the amount of Energy generated in excess of the Energy scheduled is deemed to be absorbed by Burbank in its system.

4. To the extent that the Generation Station generates less Energy in an hour than scheduled, the amount of Energy generated less than the Energy scheduled is deemed to be supplied by Burbank from its system to the Contract Points of Delivery.

5. Inadvertent Energy is the amount of Energy in an hour:

- Greater than the amount of Energy scheduled, or
- Less than the amount of Energy scheduled

6. Inadvertent Energy is deemed to occur only at the Generation Station and not at the Contract Points of Delivery.

7. Amounts of Inadvertent Energy occurring each hour will be recorded in an Inadvertent Energy Ledger.

8. When an Inadvertent Energy entry is made to record that the amount of Energy generated is greater than the amount of Energy scheduled, the Inadvertent Energy Ledger will reflect that the Participants are owed Energy by Burbank.

9. When an Inadvertent Energy entry is made to record that the amount of Energy generated is less than the amount of Energy scheduled, the Inadvertent Energy Ledger will reflect that Burbank is owed Energy by the Participants.

10. From time to time and by mutual agreement of the Participants, the net amount of Energy in the Inadvertent Energy Ledger will be settled through a scheduling transaction between Burbank and the Participants. Settlement of the net Energy will be made on the basis of Generation Entitlement Shares (not the actual amount of Energy imbalance for each participant at the time the imbalance occurred).

11. Examples of occurrences of Inadvertent Energy are as follows:

- **"Wobbles" in the output of the Generation Station.** Inadvertent Energy can occur as a result of changes in equipment performance, ambient air conditions and metering accuracy.

- **Ramping.** When the Generation Station is increasing or decreasing in output to meet changes in Participant Energy Schedules from one hour to the next hour, the Generation Station will begin ramping before the change in hour and continue ramping after the change in hour. Ramping also applies to Start Up and Shut Down.

- **Load of the Control and Services Building (CSB).** The Site Lease and Services Agreement requires that Burbank supply the Energy to meet the load of the CSB, then bill SCPPA for its share of Energy consumed in the CSB at industrial retail rates. In recognition that the CSB load is physically supplied from the Generation Station, an adjustment shall be made to the net output of the Generation Station to decrease the net output of Burbank and increase the net output of the other Participants such that all the CSB load is calculated to have been served by Burbank. Real time net output of the Generation Station will not be affected by such adjustment. The adjustment will be considered as Inadvertent Energy.

Accounting for Gas

1. The actual amount of gas required to operate the Generation Station for each hour will be charged to the Participants without the use of a ledger.

2. Notwithstanding the methodology of accounting for gas during Virtual Duct Firing, in the event that the actual amount of gas used in an hour is different than the calculated amount of gas, the Participants will be billed or credited for the difference based on the amount of gas scheduled for that hour.

   For example: See table below for an example where three Participants have submitted Participant Energy Schedules and gas accounting adjustments are made to reflect an actual gas consumption exceeding the amount that was scheduled.

Example of Calculation of Accounting for Gas				
Participant	Scheduled Gas (MMBtu)	Actual Total Gas Used (MMBtu)	Additional Allocation of Gas (MMBtu)	Total Gas Charged (MMBtu)
Anaheim	600		60	660
Burbank	400		40	440
Glendale	200		20	220

Total	1200	1320	120	1320

Curtailment of Service

In the event the Available Generating Capability is reduced unexpectedly without the intent of the Operating Agent, or the transfer capability of the Common Facilities, due to Station Operating Emergency, or the Local Network is insufficient to accommodate the schedules of the Participants, the Operating Agent will cut existing Participant Energy Schedules and curtail the delivery of Energy in amounts prorated by the Participants' Energy Schedules at their respective Contract Points of Delivery. The Operating Agent will have no obligation to make up any loss of Energy to any Participant in the event of such curtailment.

Bilateral Transactions

It is anticipated that Participant(s) may enter into Bilateral Transactions with other Participant(s) for Energy in the Normal Range and/or in the Duct Firing Range. A Bilateral Transaction occurs when Energy is sold or exchanged between two or more Participants and will result in the delivering Participant increasing its Participant Energy Schedule to the Operating Agent by the additional amount sold or exchanged. Bilateral Transactions will be transparent to the Operating Agent.

For example: Anaheim has a Participant Energy Schedule of 92 MWh/h and zero Participant Reserve Capacity. Glendale has a Participant Energy Schedule of 30 MWh/h and a Participant Reserve Capacity of 10 MW. Anaheim enters into a Bilateral Transaction with Glendale for Glendale to sell to Anaheim 10 MWh/h of Energy from the Generation Station. Glendale will then increase its Participant Energy Schedule by 10 MWh/h with the Operating Agent to be delivered to Glendale's Contract Point of Delivery.

Scheduling Services

Under the Scheduling Services Agreement, the total of Participant Energy Schedules* of Anaheim, Cerritos, Colton and Pasadena at the Contract Delivery Point of RS-E becomes split. Half of the total Energy moves into the Glendale system and Glendale provides scheduling services for such Energy to the ISO. Only a portion of Anaheim's (not Cerritos', Colton's or Pasadena's) Participant Energy Schedule* at RS-E moves into the Glendale system.

The remaining half of the Participant Energy Schedules* flows from RS-E to the ISO through scheduling services provided by Burbank. This remaining half of the Energy includes all the Participant Energy Schedules* of Cerritos, Colton and Pasadena at RS-E plus the amount of Anaheim's Participant Energy Schedule* at RS-E that does not move into the Glendale system.

For example: Refer to the table below that illustrates the calculation based on an example schedule:

Participant	Participant Energy Schedule* at RS-E (MWh/h)	Participant Energy Schedule* to move into the Glendale system and then to the ISO (MWh/h)	Participant Energy Schedule* to move directly from RS-E to the ISO (MWh/h)
Anaheim	80	54 *(108/2)*	26 *(80-54)*
Cerritos	6	0	6
Colton	10	0	10
Pasadena	12	0	12
Total	108	54	54

* for delivery to the Independent System Operator

Glossary of Terms

1. **Annual Duct Firing Gas Allocation.** The amount of gas allowed by the South Coast Air Quality permit for annual operations in the Duct Firing Range. This amount is 572 million cubic feet.

2. **Available Generating Capability.** The capability of the Generation Station to deliver Energy at Burbank's Olive Substation less allocated General Service Requirements, subject to operating limitations required by law or regulatory permit or license.

3. **Bilateral Transaction.** An agreement where Energy is sold or exchanged between two or more Participants and will result in the delivering Participant increasing its Participant Energy Schedule to the Operating Agent by the additional amount sold or exchanged.

4. **Contract Point of Delivery.** The point on the local network of Burbank where a Participant's Generation Entitlement Share will be delivered as shown in Appendix E of the Burbank Interconnection Agreement.

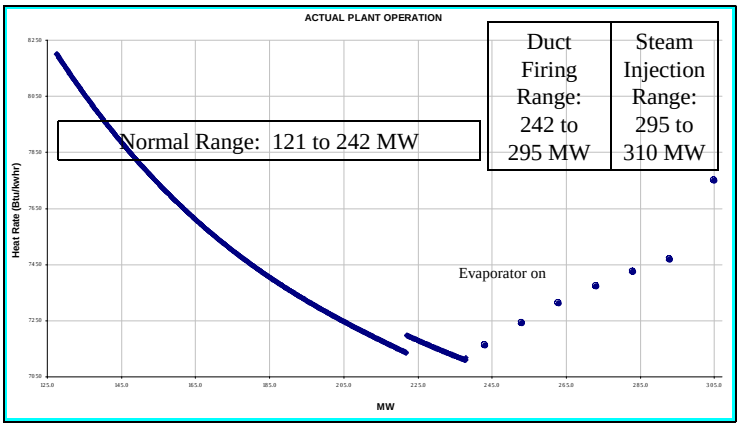
5. **Daily Duct Firing Gas Allocation.** The amount of gas allowed by the South Coast Air Quality permit for daily operations in the Duct Firing Range. This amount is 6.86 million cubic feet.

6. **Duct Firing Capacity.** The difference between the maximum and the minimum of the Duct Firing Range. For the purposes of illustration in the *Operating Practices and Procedures,* this range is deemed to be 242 MW to 295 MW. The Duct Firing Capacity is 53 MW.

7. **Duct Firing Range.** The range of operation between the Maximum Normal Range Capability and the Maximum Duct Firing Range Capability. For the purposes of illustration in the *Operating Practices and Procedures*, this range is deemed to be 242 MW to 295 MW.

8. **Generation Entitlement Share.** The percentage entitlement of each Participant in the Generation Station as set forth in Appendix B of the Power Sales Agreements.

9. **Heat Rate Curve.** The relationship in graphical form of the average heat rate versus the net output of the Generation Station determined at Burbank's Olive Substation. See example Heat Rate Curve below.



10. **Inadvertent Energy**. The amount of Energy generated at the Generation Station, measured at the high side of the generation transformer, in an hour that is greater than the amount of Energy scheduled, or less than the amount of Energy scheduled.

11. **Inadvertent Energy Ledger.** The ledger on which the amounts of Inadvertent Energy are recorded for each hour of operation.

12. **Maximum Duct Firing Capability.** The maximum of the Duct Firing Range. For the purposes of illustration in the *Operating Practices and Procedures*, this is deemed to be 295 MW.

13. **Maximum Generating Capability.** The maximum net capability of the Generation Station to produce Energy, determined at Burbank's Olive Substation, for sustained periods under conditions existing from time to time. For the purposes of illustration in the *Operating Practices and Procedures*, this is deemed to be 310 MW.

14. **Maximum Normal Range Capability.** The maximum of the Normal Range. For the purposes of illustration in the *Operating Practices and Procedures*, this is deemed to be 242 MW.

15. **Minimum Generating Capability.** The lowest net capability of the Generation Station to produce Energy, determined at Burbank's Olive Substation, at which the Generation Station can be maintained in service reliably on a continuous basis under automatic control. For the purposes of illustration in the *Operating Practices and Procedures*, this is deemed to be 121 MW.

16. **Normal Range**. The range of operation of the Generation Station from Minimum Generating Capability to Maximum Normal Range Capability. For the purposes of illustration in the *Operating Practices and Procedures*, this range is deemed to be 121 MW to 242 MW.

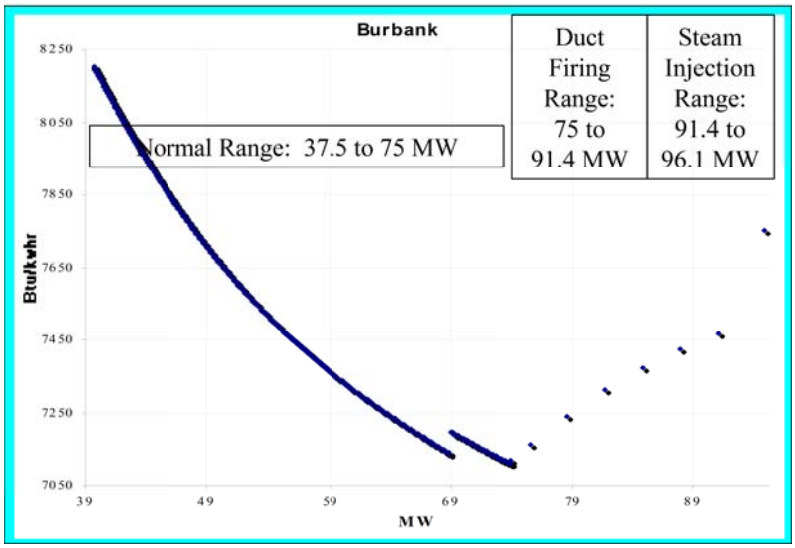
17. **Participant Annual Duct Firing Gas Allocation.** For each Participant, the product of its Generation Entitlement Share and the Annual Duct Firing Gas Allocation.

18. **Participant Daily Duct Firing Gas Allocation.** For each Participant, the product of its Generation Entitlement Share and the Daily Duct Firing Gas Allocation.

19. **Participant Duct Firing Entitlement.** For each Participant, the product of its Generation Entitlement Share and the Duct Firing Capacity.

20. **Participant Energy Schedule**. For each Participant, the amount of its Participant Total Capacity Availability that it has scheduled for Energy.

21. **Participant Heat Rate Curve.** A scaled version of the Heat Rate Curve, such that the heat rate axis remains the same and the net output axis is factored by the Generation Entitlement Share of the Participant. See example of a Participant Heat Rate Curve below.



22. **Participant Maximum Normal Range Capability.** For a Participant, the product of its Generation Entitlement Share and the Maximum Normal Range Capability.

23. **Participant Minimum Normal Range Capability.** For a Participant, the product of its Generation Entitlement Share and the Minimum Generating Capability.

24. **Participant Reserve Capacity.** For each Participant, the difference between its Participant Total Capacity Availability and Participant Energy Schedule.

25. **Participant Total Capacity Availability.** For each Participant, the product of its Generation Entitlement Share and the Available Generating Capability.

26. **Shut Down.** The process of shutting down the Generation Station from a net output that equals or exceeds its Minimum Generating Capability to zero net output.

27. **Start Up.** The process of starting the Generation Station from a net output of zero to its Minimum Generating Capability. For the purposes of illustration in the *Operating Practices and Procedures,* this range is deemed to be 0 MW to 121 MW.

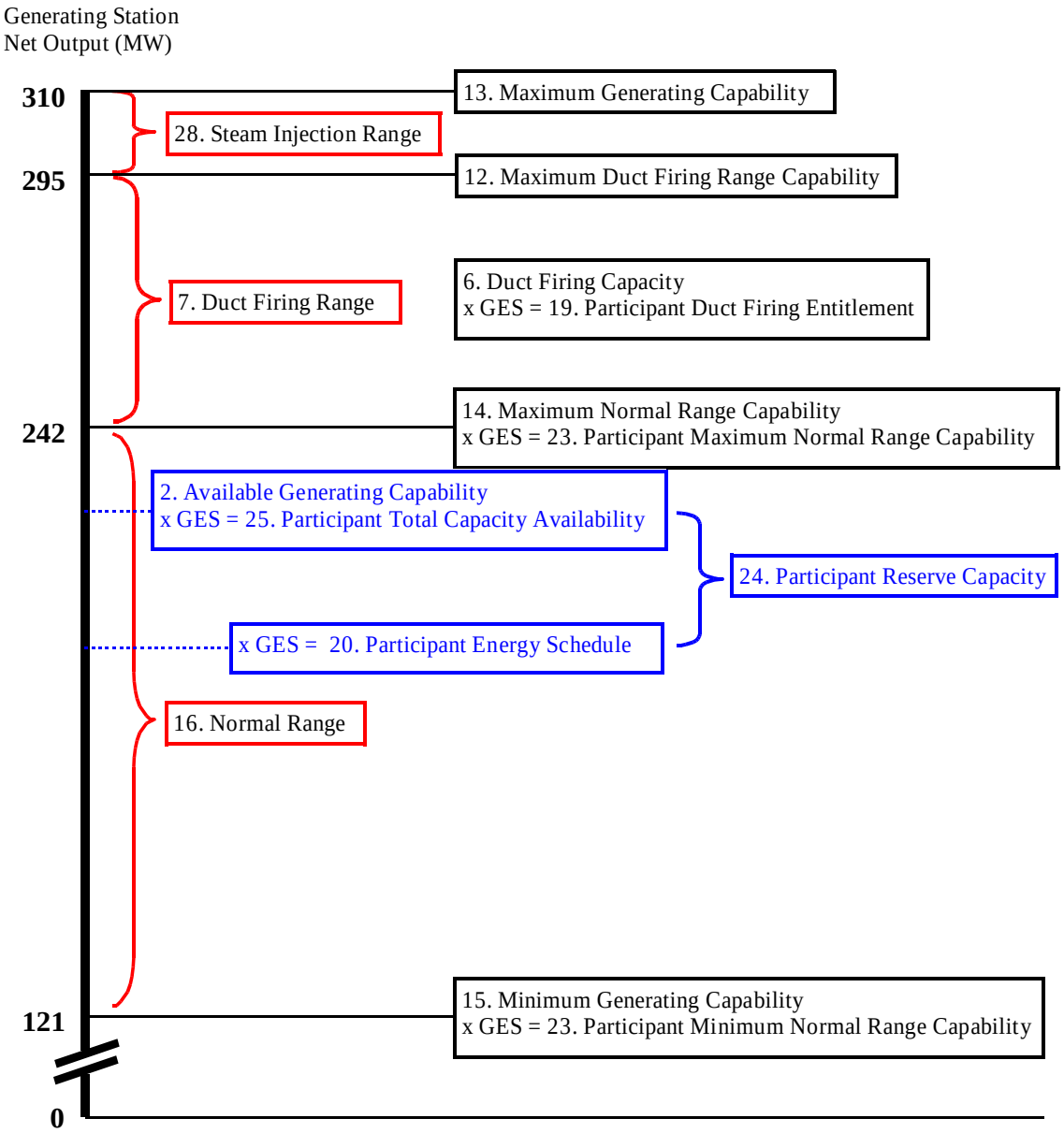
28. **Steam Injection Range.** The range of operation from the Maximum Duct Firing Range Capability to the Maximum Generating Capability. For the purposes of illustration in the *Operating Practices and Procedures,* this range is deemed to be 295 MW to 310 MW.

29. **Variable Costs.** Direct costs, other than fuel, fuel transportation and Gas Marketer costs, associated with the production of Energy. The Variable Cost for any fiscal year will be based on the budget for such direct costs and estimated net Energy to be generated as approved by the Coordinating Committee. For example, in the Operating Budget for 2004-05, approved by the Coordinating Committee on November 18, 2004:

- The total of the Variable Cost Components for May and June of 2005 is $397,000
- Anticipated total output of the Generation Station in May and June of 2005 is 290,516 MWh
- The Variable Cost is $1.37/MWh, based on approved budgeted amounts and anticipated output of the Generation Station in May and June of 2005.

30. **Virtual Duct Firing.** When Participant A is scheduled at its Participant Maximum Normal Energy Capability, and there is Participant Reserved Capacity of other Participants in the Normal Range, and Participant A schedules some or all of its Participant Duct Firing Entitlement and the Operating Agent increases the net output of the Generation Station without actually operating in the Duct Firing Range.

Relationship of Definitions



Notes:

- Net Outputs are illustrative and may vary with atmospheric and equipment conditions.
- Available Generating Capability and Participant Energy Schedule (PEC) are illustrative.
- There is no direct relationship between Participant Total Capacity Availability (PTCA) and PEC except that PEC never exceeds PTCA.
- GES means Generation Entitlement Share.
- Number next to each term is corresponding number in Glossary of Terms.

31.

Reference Information

Outage Intervals and Durations

The time between maintenance outages decreases if there are abnormally high numbers of starts and stops.

Use of steam injection will also reduce the time between maintenance outages.

Operating Criteria Based on Emissions

Emission limits govern the operation of the Generation Station.

A stack damper will reduce the time for shut down and start up, when emissions are abnormally high. It appears that approximately 14 shutdowns per month can be accomplished under the Limiting Criteria.

Steam injection limits are integrated with baseload operation limits.

Duct firing limits are based on fuel usage and not emissions.

Preliminary Operating Data

The minimum recommended output of the Generation Station is approximately 50 percent of the total of the combustion and steam turbine Capacity.

Design ramp rate over the Normal Range is approximately 18 MW per minute.

Design ramp rate over the Duct Firing Range is 3 to 4 MW per minute.

Design ramp rate over the Steam Injection Range is 6 to 10 MW per minute.

Generation Station Operating Characteristics

The Magnolia Power Project utilizes two turbine generator strings to generate power at a voltage of 18 kV that is transformed to 69 kV by the generation step-up transformers. The gas turbine includes a compressor that raises the pressure of air that is drawn through an inlet filter and evaporative cooler. Natural gas that has been raised in pressure to 450 psi by gas compressors and is mixed with the compressed air, ignited, then passed through a power turbine that turns its generator as well as its compressor. The exhaust gas travels through the heat recovery steam generator (HRSG), the emissions controls system, and out the 150-foot tall stack. Exhaust heat from the gas turbine creates steam to power the steam turbine generator string. High quality water (condensate) is pumped by the boiler feed pump through the tubes of the HRSG, which becomes steam by the exhaust heat from the gas turbine, fed to the steam turbine and, after releasing its usable Energy, is converted back to water in the steam condenser then recirculated by the boiler feed pump. Water from the cooling tower is pumped through the tubes in the steam condenser to absorb the residual heat necessary to condense the steam. The water is then pumped back to cooling tower, which cools the water, primarily by evaporation. The hot water enters the top of the cooling tower and is distributed over the large internal surface area of the tower at the same time fans in the top of the tower pull air up through the bottom of the tower and out the fan stack cooling the water.

Cold Start. Steam turbine metal (shells and rotors) must be heated before it can accept high temperature steam and generate power. If the steam turbine metal temperature is less than 400°F, the plant will under-go a cold start so it can be heated at a controlled rate. Once an operator initiates a startup, power is fed through the reserve transformer from the 34.5 kV Burbank substation to the gas turbine generator. The generator acts as a motor turning the gas turbine with its compressor. When the gas turbine generator reaches a speed of 850 rpm, and sufficient air has passed through the HRSG to purge it of residual gasses (approximately 18 minutes), the natural gas is injected and ignited to bring the speed up to 3600 rpm. The exhaust heat begins to create steam that is initially used to seal the steam turbine from air leaking along the shaft to facilitate creating a vacuum in the steam condenser that will allow steam to flow through the steam turbine. Once the vacuum is created steam will be emitted into the steam turbine and begin increasing the metal temperatures. When the steam turbine is sufficiently warm, the gas turbine will be synchronized to the electrical grid at 3600 rpm, and generate additional exhaust heat to create more steam to enable the steam turbine generator to also be synchronized to the electrical grid at 3600 rpm. Gas turbine generator load will be increased to minimum load (approximately 50% due to high emissions at lower loads). Power to run auxiliary equipment that was supplied through the reserve transformer will be switched to the auxiliary transformer that is fed by the gas turbine generator so that no outside source of power is required to support the MPP during normal operation. This process of using the steam from the HRSG to seal and warm the turbine is called “bootstrapping.” The time to perform this cold start requires approximately four hours. The process can be done in less time and with less stress on the equipment by using an outside source of auxiliary steam. Burbank’s Olive units will normally be able to provide this sealing and warming steam.

Warm and Hot Starts. A warm start requires approximately two hours and is required if the metal temperature in the steam turbine is between 400 and 700 °F. If the temperature is above 700 °F, a hot start can be done which requires approximately one hour from start initiation to base load. A cold start is normally needed if the unit has been shutdown over 72 hours. MPP has incorporated a stack damper that will keep the HRSG warmer and allow steam to be generated is less time and reduce stress on the HRSG. This damper and use of steam from the Olive units will also enable a longer time of shutdown before a warm start that is normally required if the unit is down for 48 hours. These hours of shutdown are not exact and the start up time is dependent on the temperatures of the equipment at the time a start is initiated.

Normal Operation. The minimum generation capability of the MPP is estimated to be 121 mw net, and for normal Energy scheduling purposes, a maximum of 242 mw net when the ambient temperature is 77F and relative humidity is 50%. This will vary due to actual performance determined by testing, requirements of the auxiliary loads, atmospheric conditions, and wear on the equipment. High ambient temperature tends to reduce the output of both the gas turbine and steam turbine. Low ambient temperatures tend to increase heat rate of the gas turbine because more heat (fuel) is required in the combustion process to maintain output. However, the cooler air is more dense allowing an increase in mass flow (therefore, more Energy) through the gas turbine and higher output albeit less efficiently. An evaporative cooler is provided to enable higher gas turbine output at high ambient temperature. Use of the evaporative cooler, which cools the inlet air to the gas turbine's compressor by evaporation of water, does decrease efficiency (raise heat rate) so is only employed when the unit is at normal maximum capability and the ambient temperature is limiting the output to less than needed. Evaporative cooling is not used when the ambient temperature is below 59F because of possibility of icing in the gas turbine inlet. The amount of steam the HRSG produces and the level of vacuum in the condenser determine the steam turbine output. Therefore, the steam turbine primarily follows the loading of the gas turbine. The vacuum in the condenser is a function of the amount of cooling from the cooling tower; usually a lower dry bulb temperature results in lower cooling water temperature and higher output of the steam turbine. Wear of the equipment will also cause the heat rate to increase and the output to slightly decrease over time. Major overhauls are performed to recapture lost efficiency to the extent feasible. Heat rate curves have been generated to approximate fuel requirements at various loads. However, the curves are based on discrete load points where optimum heat rates were calculated; in actual operation the heat rate does not follow a smooth curve. The gas turbine combustion system has five fuel nozzles for each combustion chamber. These are utilized in different numbers to control emissions as well as output. Actual heat rate will be higher than represented by the curves between the optimum load points as additional fuel nozzles are activated causing the heat rate to change in a non-linear fashion. Load changes in the normal operating range can occur at approximately 8% of output per minute by setting a new desired output by the operator. The attached performance curves demonstrate the characteristics described above.

Peaking Operation. Output can be increased by use of duct firing and power

augmentation. Duct firing occurs in the HRSG and can result in an additional steam turbine generator output of approximately 53 mw but also increases heat rate from its optimum due to less efficient fuel use because no additional Energy is used in the gas turbine. Duct firing is accomplished by nine burner elements located near the gas turbine end of the HRSG. There is a minimum duct-firing rate of 10% for flame stability. Increased firing of burners is in increments of 10% causing the steam turbine load to increase in steps, but total output can be adjusted by varying the gas turbine output to achieve the desired total output. Duct firing also increases particulate emissions and is limited to daily and yearly fuel use. Power augmentation is accomplished by injecting steam into the gas turbine that increases the mass flow and can increase its output by approximately 15 mw. Power augmentation also results in a higher heat rate (due to additional fuel required to evaporate the steam) and increased maintenance cost.

Shutdown. During a controlled shutdown the steam inlet valves to the steam turbine are closed and steam from HRSG is bypassed to the condenser and the fuel input to the gas turbine is reduced until the gas turbine generator output is zero. Fuel is shut off then the unit coasts to almost a stop when the turning gear is activated to slowly rotate the shaft to prevent a bow in the shaft due to uneven cooling. The time from minimum load on the gas turbine (approximately 50%) to shutting off the fuel is less than one hour. In an emergency, the fuel can be shut off causing the unit to trip.

Generation Station Economic Factors

This section will contain economic factors of the Generation Station, including but not limited to overall and incremental heat rates at various conditions, costs for start up and shut down and Participant Generation Entitlement Shares.

The economic factors will be used as general guidelines for reference, but are not guarantees of actual performance of the Generation Station in all situations.

The Operating Committee will recommend the economic factors and values to be included in this section to the Operating Agent. The Operating Agent may revise the factors and values from time to time as operating experience is gained from the Generation Station.