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RESOLUTION NO. 2023-1

A RESOLUTION OF THE BOARD OF PUBLIC UTILITIES OF THE CITY OF RIVERSIDE, CALIFORNIA (1) ADOPTING REVISED ELECTRIC FEES AND CHARGES SCHEDULE (APPENDIX A), ELECTRIC RULE 22, WATER FEES AND CHARGES SCHEDULE (APPENDIX A), WATER RULE 8, WATER RULE 10, WATER RULE 11, WATER RULE 13, WATER RULE 14, WATER RULE 16, WATER SCHEDULE WA-2, AND WATER SCHEDULE WA-5; (2) MAKING FINDINGS OF FACT; AND (3) RECOMMENDING CITY COUNCIL APPROVAL THEREOF

WHEREAS, the City of Riverside's ("City") Department of Public Utilities ("RPU") has submitted for action by the Board of Public Utilities ("Board") and the City Council, the proposed adoption and approval of revised Electric Fees and Charges Schedule (Appendix A), Electric Rule 22, Water Fees and Charges Schedule (Appendix A), Water Rule 8, Water Rule 10, Water Rule 11, Water Rule 13, Water Rule 14, Water Rule 16, Water Schedule WA-2, and Water Schedule WA-5; and

WHEREAS, on June 21, 2011, the City Council adopted Resolution No. 22228 to amend Electric Fees and Charges Schedule (Appendix A) and Water Fees and Charges Schedule (Appendix A) for charges imposed for a specific government service provided directly to the customer that is not provided to those not charged, and does not exceed the reasonable costs incurred by the City in the provisions of these services, or are charged imposed as a condition of property development; and

WHEREAS, the Water Fees and Charges Schedule (Appendix A) was updated on February 4, 2020, when the City Council adopted Resolution No. 23547 in response to Senate Bill 998 to prohibit low-income residential water service from being disconnected before a 48-hr disconnection notice, an amortized payment plan, and a reduced same day reconnection fee of \$50; and

WHEREAS, the Electric and Water Fees and Charges Schedules have not otherwise been updated since 2011; and

1 WHEREAS, in recent years, the Riverside area has experienced unprecedented inflation
2 resulting in many charges becoming insufficient to recover the City's costs for providing the
3 service; and

4 WHEREAS, in addition to inflation, the cost of providing services has increased, since
5 the last Electric and Water Fees and Charges update in 2011; and

6 WHEREAS, the City has engaged a consultant to perform a user fee study, but due to a
7 delay will resume following the adoption of the FY23/24 Amended Budget; and

8 WHEREAS, with the delay of the fee study and the last Electric and Water Fees and
9 Charges Schedule update more than ten years ago, RPU is currently undercharging for services
10 provided; and

11 WHEREAS, Staff desires to stem the loss of revenue with the adoption of a 7.5%
12 Consumer Price Index (CPI) increase for current fees; and

13 WHEREAS, to ensure that costs do not exceed the reasonable cost of service, RPU staff
14 is proposing fee adjustments between zero and 7.5% guided by the preliminary results of the
15 suspended fees and charges study; and

16 WHEREAS, the attached proposed fees and costs include a zero to 7.5 percent increase to
17 account for current inflation that is in line with the 7.5% Consumer Price Index (CPI) of the
18 Riverside-San Bernardino-Ontario region in November 2022 (12 month); and

19 WHEREAS, the Board is charged by Section 1202(e) of the City Charter to establish and
20 adopt the rates, rules, fees and charges for the Electric and Water Utility, subject to the approval
21 of the City Council; and

22 WHEREAS, the proposed fee revisions fall within the stated exceptions to the definition
23 of "tax" established by Proposition 26, because the fees and charges are imposed for a specific
24 government service provided directly to the payor that is not provided to those not charged and
25 which does not exceed the reasonable costs to the local government of providing the service and
26 are therefore not subject to the requirements of Article XIII C of the California Constitution; and
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1 WHEREAS, the Board intends to establish and adopt the revised Electric Fees and
2 Charges Schedule (Appendix A), Electric Rule 22, Water Fees and Charges Schedule (Appendix
3 A), Water Rule 8, Water Rule 10, Water Rule 11, Water Rule 13, Water Rule 14, Water Rule 16,
4 Water Schedule WA-2, and Water Schedule WA-5, in accordance with RPU staff
5 recommendations, subject to City Council approval after a duly noticed public hearing;

6 NOW, THEREFORE, BE IT RESOLVED, based upon the foregoing facts, the staff
7 report and other evidence submitted by RPU to the Board, by the Board of Public Utilities of the
8 City of Riverside, California, as follows:


9 Section 1. The foregoing recitals are true and correct and are adopted and incorporated
10 herein by reference as findings of fact of this Board.

11 Section 2: The proposed revised Electric Fees and Charges Schedule (Appendix A),
12 Electric Rule 22, Water Fees and Charges Schedule (Appendix A), Water Rule 8, Water Rule 10,
13 Water Rule 11, Water Rule 13, Water Rule 14, Water Rule 16, Water Schedule WA-2, and
14 Water Schedule WA-5, all attached hereto as Exhibit A, and incorporated herein by reference,
15 are hereby adopted and established pursuant to Section 1202(e) of the Charter of the City of
16 Riverside, California, and are recommended for approval by the City Council.

17 ADOPTED by the Board of Public Utilities of the City of Riverside, signed by its
18 Chairman and attested by its Secretary this 8th day of May 2023.

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22 Chairman of the Board of Public Utilities,
City of Riverside, California

23 Attest:

24 
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26 Secretary of the Board of Public Utilities
27 City of Riverside, California

1 I, Donesia Gause, Secretary of the Board of Public Utilities of the City of Riverside,
2 California, hereby certify that the foregoing Resolution was duly and regularly introduced and
3 adopted by the Board of Public Utilities of said City at its meeting held on the 8th day of May
4 2023, to wit:

5 Ayes: Chair Ocegüera and Board Members Crohn, Goldware, Heru,
6 Melendez, Montgomery, Siana, and Wohlgemuth

7 Noes: None

8 Absent: None

9 Abstain: None

10 IN WITNESS WHEREOF, I have hereunto set my hand this 31st day of May
11 2023.

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14 Secretary to the Board of Public Utilities
15 City of Riverside, California
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EXHIBIT A

ELECTRIC FEES AND CHARGES SCHEDULE (APPENDIX A), ELECTRIC RULE 22,
WATER FEES AND CHARGES SCHEDULE (APPENDIX A), WATER RULE 8, WATER
RULE 10, WATER RULE 11, WATER RULE 13, WATER RULE 14, WATER RULE 16,
WATER SCHEDULE WA-2, AND WATER SCHEDULE WA-5

APPENDIX A

ELECTRIC FEES AND CHARGES SCHEDULE

APPLICABILITY

Applicable to all classes of service provided in accordance with the Electric Rules and Regulations. Does not supersede any fees and charges listed in the rules which are not included on this schedule.

<u>RULE NUMBER</u>	<u>DESCRIPTION</u>	<u>FEE AMOUNT</u>
4	Minimum Deposit/Residential	\$100.00
4	Minimum Deposit/All other classes	Twice the estimated average bill or \$100.00 minimum
4	Minimum Deposit/Reconnection/ All Classes of Service	Three times the estimated average bill or \$100.00 minimum
4	Service Turn-on Charge (Same fee applies whether turning on one service or both)	\$21.50 next day \$37.50 same day \$53.75 after hours
4	Special Appointment Turn-on Charge added to applicable fee(Does not apply to the normal 4-hour window appointment)	\$10.75
5	Return Check Charge	In accordance with City of Riverside Ordinance
6	Meter Test/Second Request Within One Year Period	\$107.50 paid in advance (if error is found, fee will be refunded)

<u>RULE NUMBER</u>	<u>DESCRIPTION</u>	<u>FEE AMOUNT</u>
6	Re-Read/second request within six months	\$26.75 (if error is found fee will be refunded)
7	48-Hour Field Notification (Master Metered Accounts receive Multi-Unit notification)	\$21.50 plus \$1.00 for each additional notice per account
7	Fund Verification Fee	\$5.25
7	Trip charge for additional field visit (cut-off for non pay, etc.)	\$16.00
7	Service Reconnection Charge (Same fee applies whether reconnecting for CONP one service or both)	\$43.00 next day \$64.50 same day \$80.50 After Hours
7	Additional Fee will be added to Reconnect S.O. if Customer has self-restored	Add Time and Material to Reconnect Service Order Fee
7	Reconnection Charge/Additional – OH Service Terminated by electrical crew	\$322.50
7	Reconnection Charge/Additional – UG Service Terminated by electrical crew	\$430.00
7	Reconnection Charge/Additional – Service Drop Removed by electrical crew	\$483.75
7	Reconnection Charge/Additional – UG Service Cable removed by electrical crew	\$677.25
8	Temporary Overhead Electric Service	\$397.75
8	Temporary Overhead Electric Service/ Additional – Transformer Required	\$1,182.50
8	Temporary Underground Electric Service	\$1,010.50

<u>RULE NUMBER</u>	<u>DESCRIPTION</u>	<u>FEE AMOUNT</u>
8	Temporary Underground Electric Service/ Additional – Temporary Padmounted Transformer Required	Time & Material
8	Temporary Service Larger than 200 amps	Time & Material
10	Line Extensions for new or increased loads - Deposit	\$500.00 per lot
10	Line Extensions for new or increased loads	Time & Material
11	Design Deposit	
	Multi-family Residential (100 units or less)	\$2,687.50
	Multi-family Residential (101 units or more)	\$5,375.00
	Commercial (0 – 200A)	\$537.50
	Commercial and Industrial (400A – 800A)	\$1,075.00
	Commercial and Industrial (1000A – 3000A)	\$2,687.50
	Commercial and Industrial (4000A and above)	\$5,375.00
13	Appointment based meter reads	\$26.75
13	Monthly rental of Remote Metering to resolve access issue	\$2.50 per month
14	Temporary Turn On or Turn Off of Electric Service for Repair (normal working hours) first aggregate hour is free	\$102.00 per hour or fraction thereof
14	Temporary Turn On or Turn Off of Electric Service for Repair (after normal working hours) Minimum of \$139.75 for first hour	\$139.75 per hour or fraction thereof
15	Street Lighting – Unit of Benefit Charge - Residential Streets	\$3,416.25
15	Street Lighting – Unit of Benefit Charge - Arterial Streets	\$3,725.75

<u>RULE NUMBER</u>	<u>DESCRIPTION</u>	<u>FEE AMOUNT</u>
19	Cost to Investigate Energy Diversion	The higher of \$161.25 plus Material or Time and Material
22	Distributed Generation application and processing fee- Net Energy Metering- Initial Review	
	Residential	\$241.75
	Commercial- Flat and Demand	\$387.00
	Commercial- Time of Use (TOU)	\$929.75
22	Distributed Generation application and processing fee – Initial Review	\$860.00
22	Distributed Generation application and processing fee – Supplemental Review	\$645.00
22	Distributed Generation application and processing fee – Full System Study	Actual Cost

ELECTRIC RULE 22

DISTRIBUTED GENERATION FACILITIES INTERCONNECTION

A. APPLICABILITY

Applicability. This Rule describes the interconnection, operating and metering requirements for Generating Facilities to be connected to the Riverside Public Utilities (RPU) Distribution System. Subject to the requirements of this Rule, RPU will allow the interconnection of Generating Facilities with its Distribution System.

Definitions: Capitalized terms used in this Rule, and not otherwise defined, shall have the meaning ascribed to such terms in Section H. The definitions in this Rule shall only apply to this Rule and may not apply to RPU's other rate schedules.

B. GENERAL RULES, RIGHTS AND OBLIGATIONS

- 1. Authorization Required to Operate.** A Producer must comply with this Rule, execute an Interconnection Agreement with RPU, and receive RPU's express written permission to operate a Generating Facility in parallel with the Distribution System. RPU shall apply this Rule in a non-discriminatory manner and shall not unreasonably withhold its permission to interconnect an Electric Producer's Generating Facility.
- 2. Separate Arrangements Required for Other Services.** A Producer requiring other electric services from RPU including, but not limited to, Distribution Service during periods of curtailment or interruption of a Generating Facility, must enter into separate arrangements with RPU for such services, in accordance with RPU Board and City Council approved rate schedules.
- 3. Transmission Service Not Provided with Interconnection.** Interconnection with RPU's Distribution System under this Rule does not provide a Producer any rights to utilize RPU's Distribution System for the transmission or distribution, or wheeling of electric power, nor does it limit those rights.
- 4. Compliance with Laws, Rules, and Tariffs.** A Producer shall ascertain and comply with RPU rules, rate schedules, and regulations of RPU; applicable Federal Energy Regulatory Commission approved rules, tariffs, and regulations; and any local, state or federal law, statute or regulation which applies to the design, siting, construction, installation, operation, or any other aspect of the Producer's Generating Facility and Interconnection Facilities.

5. **Design Reviews and Inspections.** RPU shall have the right to review the design of a Producer's Generating Facility and Interconnection Facilities and to inspect a Producer's Generating and Interconnection Facilities prior to the commencement of Parallel Operation with RPU's Distribution System. RPU may require a Producer to make modifications as necessary to comply with the requirements of this Rule. RPU's review and authorization for Parallel Operation shall not be construed as confirming or endorsing the Producer's design or as warranting the Generating or Interconnection Facilities' safety, durability or reliability. RPU shall not, by reason of such review or lack of review, be responsible for the strength, adequacy, or capacity of such equipment.
6. **Right to Access.** A Producer's Generating Facility and Interconnection Facilities shall be reasonably accessible to RPU personnel as necessary for RPU to perform its duties and exercise its rights under its rate schedules and rules, and any Interconnection Agreement between RPU and the Producer.
7. **Confidentiality of Information.** Any information pertaining to Generating or Interconnection Facilities provided to RPU by a Producer shall be treated by RPU in a confidential manner. RPU shall not use information contained in the Application to propose discounted rates to the Customer unless authorized to do so by the Customer or the information is provided to RPU by the Customer through other means.
8. **Prudent Operation and Maintenance Required.** A Producer shall operate and maintain its Generating Facility and Interconnection Facilities in accordance with Prudent Electrical Practices and shall maintain compliance with this Rule.
9. **Curtailement or Disconnection.** RPU may limit the operation or disconnect or require the disconnection of a Producer's Generating Facility from RPU's Distribution System at any time, with or without notice, in the event of an Emergency, or to correct Unsafe Operating Conditions. However, RPU must provide written notice as soon as possible following such disconnect. RPU may also limit the operation or disconnect or require the disconnection of a Producer's Generating Facility from RPU's Distribution System upon the provision of reasonable written notice: 1) to allow for routine maintenance, repairs or modifications to RPU's Distribution System; 2) upon RPU's determination that a Producer's Generating Facility is not in compliance with this Rule; or, 3) upon termination of the Interconnection Agreement. Upon the Producer's written request RPU shall provide a written explanation of the reason for such curtailement or disconnection.

C. APPLICATION AND INTERCONNECTION PROCESS

1. Application Process

- a. **Applicant Initiates Contact with RPU.** Upon request, RPU will provide information and documents (such as sample agreements, the Application, technical information, listing of Certified Equipment, application fee information, applicable rate schedules and metering requirements) in response to a potential Applicant's inquiry. Unless otherwise agreed upon, all such information shall normally be sent to an Applicant within three (3) business days following receipt of the initial request from the Applicant. RPU will establish an individual representative as the single point of contact for an Applicant, but may allocate responsibilities among its staff to best coordinate the Interconnection of an Applicant's Generating Facility.
- b. **Applicant Completes and Files an Application.** All Applicants shall be required to complete and file an Application and supply any relevant additional information requested by RPU. The filing must include the completed Application and a fee for processing the application and performing the Initial Review to be completed by RPU pursuant to Section C.1.c. The application fee shall vary with the type of the proposed Generating Facility as follows:

Type of Service	Initial Review	Supplemental Review
<hr/>		
Net Energy Metering		
<i>(per Public Utilities Code Section 2827)</i>		
- Residential	\$241.88	None
- Commercial		
Flat & Demand	\$387.00	None
TOU	\$929.88	None
All others	\$860.00	\$645.00 (additional)

Fifty percent of the fees associated with the Initial Review will be returned to the Applicant if the Application is rejected by RPU or the Applicant retracts the Application.

The Applicant may propose and RPU may negotiate specific costs for processing non-standard applications such as multi-units, multi-sites, or

otherwise as conditions warrant. The costs for the Initial Review and the Supplemental Review contained in this Section, as well as the language provided in Sections C.1.c and C.1.d, do not apply under these circumstances.

Within ten (10) business days of receiving an Application, RPU shall normally acknowledge its receipt and state whether the Application has been completed adequately. If deficiencies are noted, RPU and Applicant shall cooperate in a timely manner to establish a satisfactory Application.

c. RPU Performs an Initial Review and Develops Preliminary Cost Estimates and Interconnection Requirements.

- (1) Upon receipt of a satisfactorily completed Application and any additional information necessary to evaluate the Interconnection of a Generating Facility, RPU shall perform an Initial Review using the process defined in Section I. The Initial Review determines if (a) the Generating Facility qualifies for Simplified Interconnection, (b) the Generating Facility can qualify for Interconnection subject to additional requirements, or (c) it will be necessary for RPU to perform an Interconnection Study to determine the Interconnection Requirements.
- (2) The RPU shall complete its Initial Review, absent any extraordinary circumstances, within 10 business days, upon determination that the Application is complete, if the Generating Facility qualifies for Simplified Interconnection. If the Initial Review determines that the proposed facility can be interconnected by means of a Simplified Interconnection, RPU will provide the Applicant with a written description of the requirements for interconnection and a draft Interconnection Agreement pursuant to Section C.1.e.
- (3) If the Generating Facility does not qualify for Simplified Interconnection as proposed, RPU will notify the Applicant and perform a Supplemental Review as described in Section I. The Supplemental Review will provide either (a) Interconnection Requirements beyond those for Simplified Interconnection, and a draft Interconnection Agreement, or (b) a cost estimate and schedule for an Interconnection Study. The Supplemental Review shall be completed, absent any extraordinary circumstances, within 20 business days upon determination that the Application is complete. Payment for the Supplemental Review shall be submitted to RPU within 10 calendar days after

the results of the Supplemental Review are provided to the Applicant.

- d. **When Required, Applicant and RPU Commit to Additional Interconnection Study Steps.** When an Initial Review reveals that the proposed facility cannot be interconnected to RPU's Distribution System by means of a Simplified Interconnection, or that significant RPU Interconnection Facilities or Distribution System improvements must be installed or made to RPU's Distribution System to accommodate the interconnection of an Applicant's Generating Facility, RPU and Applicant shall enter into an agreement that provides for RPU to perform additional studies, facility design, and engineering and to provide detailed cost estimates for fixed price or actual cost billing, to the Applicant at the Applicant's expense. The interconnection study agreement shall set forth RPU's schedule for completing such work and the estimated or fixed price costs of such studies and engineering. Upon completion of an Interconnection Study, RPU shall provide the Applicant with the specific requirements, costs and schedule for interconnecting the Generating Facility to accommodate execution of agreements pursuant to Section C.1.e.
- e. **Applicant and RPU Enter Into a Generation Interconnection Agreement and, Where Required, a Financing and Ownership Agreement for Interconnection Facilities or Electric System Modifications.** The RPU shall provide the Applicant with an executable version of the Generating Facility Interconnection Agreement, net energy metering agreement, or Power Purchase Agreement appropriate for the Applicant's Generating Facility and desired mode of operation. Where the Initial Review or Interconnection Study performed by RPU has determined that modifications or additions are required to be made to its Electric System, or that additional metering, monitoring, or protection devices will be necessary to accommodate an Applicant's Generating Facility, RPU may also provide the Applicant with other interconnection facilities financing and ownership agreements. These agreements shall set forth the Applicant's responsibilities, completion schedules, and estimated or fixed price costs for the required work.
- f. **Where Applicable, RPU or Producer Installs Required Interconnection Facilities or Modifies RPU's Distribution System.** After executing the applicable agreements, RPU or Producer will commence construction/installation of the modifications or metering and monitoring requirements identified in the agreements. The parties will use good faith efforts to meet the schedules and cost estimates.

- g. Producer Arranges for and Completes Commissioning Testing of Generating Facility and, Where Applicable, Producer Installed Interconnection Facilities.** The producer is responsible for testing new Generating Facilities and associated Interconnection Facilities, according to Section J.5 to ensure compliance with the safety and reliability provisions of this Rule, and RPU rules and regulations prior to being operated in parallel with RPU's Distribution System.
- h. RPU Authorizes Parallel Operation or Momentary Parallel Operation.** The Producer's Generating Facility shall be allowed to operate in Parallel Operation or Momentary Parallel Operation, as applicable, with RPU's Distribution System upon satisfactory compliance with the terms of all applicable agreements and express written permission. Compliance may include, but not be limited to, provision of any required documentation and satisfactorily completing any required inspections or tests as described herein or in the agreements formed between the Producer and RPU.
- i. RPU Reconciles Costs and Payments.** If the Producer selected a fixed price billing for the Interconnection Facilities or Distribution System modifications, no reconciliation will be necessary. If the Producer selected actual cost billing, a true-up will be required. RPU will reconcile its actual costs related to the Producer's facility against any advance payments made by the Producer for interconnection facilities or Distribution System modifications. The Producer will receive either a bill for any balance due or a reimbursement for overpayment as determined by RPU's reconciliation. The Producer shall be entitled to a reasonably detailed and understandable report detailing RPU's reconciliation process.

D. GENERATING FACILITY DESIGN AND OPERATING REQUIREMENTS

1. General Interconnection and Protection Requirements

- a. Protective Functions Required.** The Protective Functions for Generating Facilities operating in parallel with RPU's Distribution System shall include:

 - (1) Over and under voltage trip functions and over and under frequency trip functions;
 - (2) A means for disconnecting the Generating Facility from RPU's Distribution System when a protective function initiates a trip;
 - (3) An automatic means to prevent the Generating Facility from energizing a de-energized Distribution System circuit and to

prevent the Generating Facility from reconnecting with the Distribution System unless the Distribution System service voltage and frequency is of specified settings and is stable for at least 60 seconds;

- (4) A means to prevent the Generating Facility from contributing to the formation of an Unintended Island.

- b. **Momentary Paralleling Generating Facilities.** With RPU's approval, the transfer switch or system used to transfer the Producer's loads from RPU's Distribution System to Producer's Generating Facility may be used in lieu of the Protective Functions required for Parallel Operation.
- c. **Purpose of Protective Functions.** The Protective Functions and requirements of this Rule are designed to protect RPU's Distribution System and not the Generating Facility. A Producer shall be solely responsible for providing adequate protection for its Generating Facility and Interconnection Facilities. The Producer's protective equipment shall not impact the operation of other protective devices utilized on the Distribution System in a manner that would affect RPU's capability of providing reliable service to its Customers.
- d. **Suitable Equipment Required.** Circuit breakers or other interrupting devices located at the Point of Common Coupling must be Certified or "Listed" (as defined in Article 100, the Definitions Section of the National Electrical Code) as suitable for their intended application. This includes being capable of interrupting the maximum available fault current expected at their location. Producer's Generating Facility and Interconnection Facilities shall be designed so that the failure of any one device shall not potentially compromise the safety and reliability of RPU's Distribution System.
- e. **Visible Disconnect Required.** The Producer shall furnish and install a manual disconnect device that has a Visible Disconnect to isolate the Generating Facility from RPU's Distribution System. The device must be accessible to RPU personnel and be capable of being locked in the open position. Generating Facilities with Non-Islanding inverters totaling 1 kVA or less are exempt from this requirement.
- f. **Single-Phase Generators.** For single-phase Generators connected to a shared single-phase secondary system, the maximum Net Nameplate Rating of the Generating Facilities shall be 20 kVA. Generators applied on a center-tapped neutral 240-volt service must be installed such that no more than 6 kVA of imbalance in capacity exists between the two sides of the 240-volt service. For Dedicated Distribution Transformer services, the maximum Net Nameplate Rating

of a single-phase Generating Facility shall be the transformer nameplate rating.

- g. Drawings Required.** RPU, prior to Parallel Operation or Momentary Parallel Operation of the Generating Facility, shall approve the Producer's protection and control diagrams of the Generating Facility. Generating Facilities equipped with a protection and control scheme previously approved by RPU for system-wide application or with Certified Equipment only may satisfy this requirement by reference to previously approved drawings and diagrams.
- h. Generating Facility Conditions Not Identified.** In the event this Rule does not address the interconnection requirements for a particular Generating Facility, RPU and Producer may agree upon other requirements.

2. Prevention of Interference.

The Producer shall not operate equipment that superimposes upon RPU's Distribution System a voltage or current that interferes with RPU operations, service to RPU Customers, or RPU communication facilities. If such interference occurs, the Producer must diligently pursue and take corrective action at its own expense after being given notice and reasonable time to do so by RPU. If the Producer does not take timely corrective action, or continues to operate the equipment causing interference without restriction or limit, RPU may, without liability, disconnect the Producer's equipment from the Distribution System, in accordance with Section B.9 of this Rule.

To eliminate undesirable interference caused by operation of the Generating Facility, each Generating Facility shall meet the following criteria:

- a. Normal voltage operating range.** The voltage operating range limits for Generating Facilities shall be selected as a protection function that responds to abnormal Distribution System conditions and not as a voltage regulation function.

 - (1) Generating Facilities (11 kVA or less).** Generating Facilities with a Gross Nameplate Rating 11 kVA or less shall be capable of operating within the limits normally experienced on the Distribution System. The operating range shall be selected in a manner that minimizes nuisance tripping between 106 volts and 132 volts (88-110% of nominal voltage) on a 120-volt base. Generating Facilities shall cease to energize RPU circuits whenever the voltage at the Point of Common Coupling deviates from the allowable voltage operating range.

- (2) **Generating Facilities (Greater than 11 kVA).** RPU may have specific operating voltage ranges for Generating Facilities with Gross Nameplate Ratings greater than 11 kVA and may require adjustable operating voltage settings. In the absence of such requirements, the Generating Facility shall operate at a range between 88% and 110% of the applicable interconnection voltage.
- (3) **Voltage Disturbances.** System voltage assumes a nominal 120 V base. The Generator should sense abnormal voltage and respond accordingly. The following conditions should be met, with voltages in root mean square and measured at the Point of Common Coupling, as described in Table D-1.

Table D-1: Voltage Trip Setting

Voltage at Point of Common Coupling (Assuming 120V base)	Maximum Trip Setting (Assuming 60 cycles per Second)
Less than 60 Volts	10 Cycles
Greater than or equal to 60 Volts but less than 106 Volts	120 Cycles
Greater than or equal to 106 volts but less than or equal to 132 Volts	Normal Operation
Greater than 132 volts But less than or equal to 165 Volts	120 cycles (30 cycles for facilities greater than 11 kVA)
Greater than 165 Volts	6 cycles

****Maximum Trip time** refers to the time between the onset of the abnormal condition and the Generating Facility ceasing to energize the Distribution System. Protective Function sensing devices and circuits may remain connected to the Distribution System to allow sensing of electrical conditions for use by the "reconnect" feature. The purpose of the time delay is to allow Generating Facility to "ride through" short-term disturbances to avoid nuisance tripping. For Generating Facilities with a Gross Nameplate Rating of 11 kVA or less, the set points are to be non-user adjustable. For Generating Facilities with a Gross Nameplate Rating greater than 11 kVA, different voltage set points and trip times from those in Table D-1 may be negotiated with RPU.*

- b. Flicker.** Any voltage flicker at the Point of Common Coupling caused by the Generating Facility should not exceed the limits defined by the "Maximum Borderline of Irritation Curve" identified in IEEE 519 (IEEE Recommended Practices and Requirements for Harmonic Control in Electric Power Systems, IEEE STD 519-1992, Institute of Electrical and Electronic Engineers, Piscataway, NJ April 1992.) This requirement is

necessary to minimize the adverse voltage effects experienced by other customers on RPU's Distribution System. Induction Generators may be connected and brought up to synchronous speed (as an induction motor) provided these flicker limits are not exceeded.

- c. **Frequency.** RPU controls system frequency, and the Generating Facility shall operate in synchronism with the Distribution System. Generating Facilities with a Gross Nameplate Rating of 11 kVA or less shall have a fixed operating frequency range of 59.3-60.5 Hertz. The Generating Facility must cease to energize RPU's Distribution System in a maximum of ten cycles should Distribution System remain outside of the frequency limits. The purpose of the time delay is to allow the Generating Facility to ride through short-term disturbances to avoid nuisance tripping. RPU may require adjustable operating frequency settings for Generating Facilities with a Gross Nameplate Rating greater than 11 kVA.
- d. **Harmonics.** Harmonic distortion shall be in compliance with IEEE 519. Exception: The harmonic distortion of a Generating Facility located at a Customer's site shall be evaluated using the same criteria as for the loads at that site.
- e. **Direct Current Injection.** Generating Facilities should not inject Direct Current greater than 0.5% of rated output current into RPU's Distribution System.
- f. **Power Factor.** Each Generator in a Generating Facility shall be capable of operating at some point within a power factor range of 0.9 leading and 0.9 lagging. Operation outside this range is acceptable provided the reactive power of the Generating Facility is used to meet the reactive power needs of on-site loads or that reactive power is otherwise provided under tariff by RPU. The Producer shall notify RPU if it is using the Generating Facility for power factor correction.

3. Control, protection and safety equipment requirements

a. Technology Specific Requirements

- (1) **Three-phase Synchronous Generators.** For three-phase Generators, the circuit breakers shall be three-phase devices with electronic or electromechanical control. The Producer shall be responsible for properly synchronizing its Generating Facility with the Distribution System by means of either a manual or automatic synchronizing function. Automatic synchronizing is required for all synchronous generators, which have a Short Circuit Contribution Ratio (SCCR) exceeding 0.05. A Generating

Facility whose SCCR exceeds 0.05 shall be equipped with Protective Functions suitable for detecting loss of synchronism and rapidly disconnecting the Generating Facility from the Distribution System. Unless otherwise agreed to between the Producer and RPU, synchronous generators shall automatically regulate power factor, not voltage, while operating in parallel with the Distribution System. Power system stabilization functions are specifically not required for Generating Facilities under 10 MW Net Nameplate Rating. Synchronization means that at the time of connection, the frequency difference shall be less than 0.2 Hz, the voltage difference shall be less than 10%, and the phase angle difference shall be less than 10 degrees.

- (2) **Induction Generators.** Induction Generators do not require a synchronizing function. Starting or rapid load fluctuations on induction generators can adversely impact the Distribution System's voltage. Corrective step-switched capacitors or other techniques may be necessary and may cause undesirable ferroresonance. When these counter measures (e.g. additional capacitors) are installed on the Producer's side of the Point of Common Coupling, RPU must review these measures. Additional equipment may be required as determined in a Supplemental Review or an Interconnection Study.
- (3) **Inverter Systems.** Utility-interactive inverters do not require separate synchronizing equipment. Non-utility-interactive or "stand-alone" inverters shall not be used for parallel operation with the Distribution System.

b. Supplemental Generating Facility Requirements

- (1) **Unintended Islanding For Generating Facilities that fail the Export Screen (Section I.3.b.)** Generating Facilities must mitigate their potential contribution to an Unintended Island. This can be accomplished by one of the following options: (1) incorporating certified Non-Islanding control functions into the Protective Functions, or (2) verifying that local loads sufficiently exceed the Net Nameplate Rating of the Generating Facility, or (3) incorporating a transfer trip or an equivalent Protective Function.
- (2) **Fault Detection.** A Generating Facility with an SCCR exceeding 0.1 or that does not meet any one of the options for mitigating Unintended Islands in D.3.b.1 shall be equipped with Protective Functions designed to detect Distribution System faults, both line-to-line and line-to-ground, and promptly cease to energize

the Distribution System in the event of a fault. For a Generating Facility that cannot detect these faults within two seconds, a transfer trip or equivalent function may be required. Reclose-blocking of RPU's affected recloser(s) may also be required by RPU for generators that exceed 15% of the peak load on the Line Section.

E. INTERCONNECTION FACILITY OWNERSHIP AND FINANCING

1. Scope and Ownership of Interconnection Facilities

- a. Scope.** The interconnection of a Producer's Generating Facility with RPU's Distribution System is made through the use of Interconnection Facilities. Such interconnection may also require Distribution System improvements. The type, extent and costs of Interconnection Facilities and Distribution System Improvements shall be consistent with this Rule and determined through the Initial Review and Interconnection Study described in Section C.
- b. Ownership.** Interconnection Facilities installed on Producer's side of the Point of Common Coupling may be owned, operated and maintained by the Producer or RPU. Interconnection Facilities installed on RPU's side of the Point of Common Coupling and Distribution System improvements shall be owned operated and maintained by RPU.

2. Responsibility for Costs of Interconnecting a Generating Facility

- a. Study and Review Costs.** A Producer shall be responsible for the reasonably incurred costs of the reviews and studies conducted pursuant to Section C.1 of this Rule.
- b. Facility Costs.** A Producer shall be responsible for all costs associated with Interconnection Facilities owned by the Producer. The Producer shall also be responsible for any costs reasonably incurred by RPU in providing, operating, or maintaining Interconnection Facilities and Distribution System improvements required solely for the interconnection of the Producer's Generating Facility with RPU's Distribution System.
- c. Separation of Costs.** Should RPU combine the installation of Interconnection Facilities, or Distribution System Improvements with modifications or additions to RPU's Distribution System to serve other Customers or Producers, RPU shall not include the costs of such separate or incremental facilities in the amounts billed to the Producer

for the Interconnection Facilities or Distribution System Improvements required pursuant to this Rule.

3. **Installation and Financing of Distribution System Improvements**

- a. **Agreement Required.** Costs for Added Facilities shall be paid by the Producer pursuant to the provisions contained in the Generating Facility Interconnection Agreement. Where the type and extent of the Interconnection Facilities and Distribution System Improvements warrant additional detail, the detail shall be found in a separate agreement between the Producer and RPU, and RPU's applicable rate schedules and rules for Added Facilities.
- b. **Attachments and Modifications to Distribution System.** Except as provided for in Section E.3.c of this Rule, Interconnection Facilities connected directly to RPU's Distribution System and Distribution System Improvements shall be provided, installed, owned and maintained by RPU as Added Facilities.
- c. **Reservation of Unused Facilities.** When a Producer wishes to reserve RPU-owned Interconnection Facilities or Distribution System Improvements installed and financed as Added Facilities for the Producer, but idled by a change in the operation of the Producer's Generating Facility or otherwise, Producer may elect to abandon or reserve such facilities consistent with the terms of its agreement with RPU. If Producer elects to reserve idle Interconnection Facilities or Distribution System Improvements, RPU shall be entitled to continue to charge Producer for the costs related to the ongoing operation and maintenance of the Added Facilities.
- d. **Refund of Salvage Value.** When a Producer elects to abandon the Added Facilities for which it has either advanced the installed costs or constructed and transferred to RPU, the Producer shall, at a minimum, receive from RPU a credit for the net salvage value of the Added Facilities.

F. **METERING, MONITORING AND TELEMETRY**

1. **General Requirements.** All Generating Facilities shall be metered in accordance with this Section and shall meet all applicable standards of RPU's applicable rate schedules, rules, and published RPU manuals dealing with metering specifications. The requirements in this Section do not apply to metering of Generating Facilities operating under RPU's net metering tariff pursuant to California Public Utilities Code Section 2827.

2. **Metering by Third Parties.** The ownership, installation, operation, reading, and testing of metering for Generating Facilities shall be by RPU.
3. **Net Generation Metering.** For purposes of monitoring Generating Facility operation for determination of standby charges and applicable non-bypassable charges as defined in RPU's rate schedules, and for Distribution System planning and operations, consistent with Section B.4 of these Rules, RPU shall have the right to specify the type, and require the installation of, Net Generation Metering. RPU shall require the provision of generator output data to the extent reasonably necessary to provide information for the utility to administer its tariffs or to operate and plan its system. RPU shall only require Net Generating Metering to the extent that less intrusive and/or more cost effective options for providing the necessary generator output data are not available. In exercising its discretion to require Net Generation Metering, RPU shall consider all relevant factors, including but not limited to:
 - a. Data requirements in proportion to need for information;
 - b. Customer election to install equipment that adequately addresses RPU's operational requirements;
 - c. Accuracy and type of required metering consistent with purposes of collecting data;
 - d. Cost of metering relative to the need for and accuracy of the data;
 - e. The project size relative to the cost of the metering/monitoring;
 - f. Other means of obtaining the data (e.g. generator logs, proxy data, etc.);
 - g. Requirements under any power purchase agreement with the Customer.
4. **Point of Common Coupling Metering.** For purposes of assessing RPU charges for retail service, the Electricity Producer's Point of Common Coupling Metering shall be a bi-directional meter so that power deliveries to and from the Electricity Producer's site can be separately recorded. Alternately, the Electricity Producer may, at its sole option and cost, require RPU to install multi-metering equipment to separately record power deliveries to the Distribution System and retail purchases from RPU. Such Point of Common Coupling Metering shall be designed to prevent reverse registration.
5. **Telemetry.** If the nameplate rating of the Generating Facility is 1 MW or greater, Telemetry equipment at the Net Generator Metering location may be required at the Electricity Producer's (and Customer's) expense. If the Generating Facility is interconnected to a Distribution System operating at a voltage below 10 kV, then Telemetry equipment may be required on Generating Facilities 250 kW or greater. RPU shall only require Telemetry to the extent that less intrusive and more cost effective options for providing the necessary data in real time are not available.

6. **Location.** Where RPU-owned metering equipment is located on the Electricity Producer's (or Customer's) premises, Electricity Producer (and Customer) shall provide, at no expense to the RPU, a suitable location for all such metering equipment.
7. **Costs of metering.** The Electricity Producer (and Customer) will bear all costs of the metering required by this Rule, including the incremental costs of operating and maintaining the metering.

G. **DISPUTE RESOLUTION PROCESS**

Any disputes arising from this Rule shall be submitted in writing by the Producer or Customer to the Board of Public Utilities for resolution. Their decision shall be final.

H. **DEFINITIONS**

Active Anti-Islanding Scheme: A control scheme installed with the Generating Facility that senses and prevents the formation of an Unintended Island.

Applicant: The entity submitting an Application for Interconnection pursuant to this Rule.

Application: A standard RPU form submitted to RPU requesting Interconnection of a Generating Facility.

Certification Test: A test pursuant to this Rule that verifies conformance of certain equipment with RPU-approved performance standards in order to be classified as Certified Equipment. Certification Tests are performed by NRTLs.

Certification; Certified; Certificate: The documented results of a successful Certification Testing.

Certified Equipment: Equipment that has passed all required Certification Tests.

Commissioning Test: A test performed during the commissioning of all or part of a Generating Facility to achieve one or more of the following:

- Verify specific aspects of its performance;
- Calibrate its instrumentation;
- Establish instrument or Protective Function set-points.

Customer: The entity that receives or is entitled to receive Distribution Service through the Distribution System.

Dedicated Transformer; Dedicated Distribution Transformer: A transformer that provides electricity service to a single Customer. The Customer may or may not have a Generating Facility.

Distribution Service: All services required by, or provided to, a Customer pursuant to the approved rate schedules and rules of RPU.

Distribution System: All electrical wires, equipment, and other facilities owned or provided by RPU by which RPU provides Distribution Service to its Customers.

Emergency: An actual or imminent condition or situation, which jeopardizes the Distribution System integrity.

Field Testing: Testing performed in the field to determine whether equipment meets RPU's requirements for safe and reliable Interconnection.

Generating Facility: All Generators that are included in an Interconnection Agreement.

Generator: An individual electrical power plant (including required equipment, appurtenances, protective equipment and structures) that is capable of Distributed Generation. A Generator is part of a Generating Facility.

Gross Nameplate Rating: The total gross generating capacity of a Generator or Generating Facility as designated by the manufacturer of the Generator.

Host Load: Electrical power that is consumed by the Customer at the property on which the Generating Facility is located.

Initial Review: The review by RPU, following receipt of an Application, to determine the following:

- a) the Generating Facility qualifies for Simplified Interconnection; or
- b) the Generating Facility can be made to qualify for Interconnection with Supplemental Review determining any potential additional requirements; or
- c) if neither a nor b, provides the cost estimate and schedule for performing an Interconnection Study.

In-rush Current: The current determined by the In-rush Current Test.

Interconnection; (Interconnected): The physical connection of a Generating Facility in accordance with the requirements of this Rule so that Parallel Operation with the Distribution System can occur (has occurred).

Interconnection Agreement: An agreement between RPU and the Producer that gives certain rights and obligations to effect or end Interconnection. Customers with Generating Facilities qualifying under the Self-Generation Program do not require an Interconnection Agreement.

Interconnection Facilities: The electrical wires, switches and related equipment that are required in addition to the facilities required to provide electric Distribution Service to a Customer to allow Interconnection. Interconnection Facilities may be located on either side of the Point of Common Coupling as appropriate to their purpose and design. Interconnection Facilities may be integral to a Generating Facility or provided separately. Interconnection Facilities may be owned by either Producer or RPU.

Interconnection Study: A study to establish the requirements for Interconnection of a Generating Facility.

Island; Islanding: A condition on the Distribution System in which one or more Generating Facilities deliver power to Customers using a portion of the Distribution System that is electrically isolated from the remainder of the Distribution System.

Line Section: That portion of the Distribution System connected to a Customer bounded by automatic sectionalizing devices or the end of the distribution line.

Momentary Parallel Operation: The interconnection of a Generating Facility to the Distribution System for one second (60 cycles) or less.

Nationally Recognized Testing Laboratory (NRTL): A laboratory accredited to perform the certification testing requirements under this Rule.

Net Energy Metering: Metering for the receipt and delivery of electricity between the Producer and RPU pursuant Section 2827 of the Public Utilities Code. Over a given time frame (typically a month) the difference between these two values yields either net consumption or surplus. The meter registers are ratcheted to prevent reverse registration. If available, a single meter may be allowed to spin backward to yield the same effect as a directional, two meter (or register) arrangement.

Net Generation Metering: Metering of the net electrical power or energy output in kW or kWh, respectively, from a given Generating Facility. This may also be the measurement of the difference between the total electrical energy produced by a Generating Facility and the electrical energy consumed by the auxiliary equipment necessary to operate the Generating Facility. For a Generating Facility with no Host Load or no Public Utilities Code Section 218 Load, Metering that is located at the Point of Common Coupling. For a Generating Facility with Host Load or Section 218 Load, Metering that is located at the Generating Facility bus after the point of auxiliary load(s) and prior to serving Host Load or Section 218 Load.

Net Nameplate Rating: The Gross Nameplate Rating minus the consumption of electrical power of a Generator or Generating Facility as designated by the manufacturer(s) of the Generator(s).

Network Service: More than one electrical feeder providing Distribution Service at a Point of Common Coupling.

Non-Export; Non-Exporting: Designed to prevent the transfer of electrical energy from the Producer to RPU.

Non-Islanding: Designed to detect and disconnect from a stable Unintended Island with matched load and generation. Reliance solely on under/over voltage and frequency trip is not considered sufficient to qualify as Non-Islanding.

Parallel Operation: The simultaneous operation of a Generator with power delivered or received by RPU while Interconnected. For the purpose of this Rule, Parallel Operation includes only those generators that are interconnected with the Distribution System for more than one second (60 cycles).

Periodic Test: A test performed on part or all of a Generating Facility at pre-determined time or operational intervals to achieve one or more of the following:

- Verify specific aspects of its performance;
- Calibrate instrumentation;
- Verify and re-establish instrument or Protective Function set-points.

Point of Common Coupling Metering: Metering located at the Point of Common Coupling. This is the same Metering as Net Generation Metering for Generating Facilities with no Host Load or no Section 218 Load.

Point of Common Coupling (PCC): The transfer point for electricity between the electrical conductors of RPU and the electrical conductors of the Producer.

Point of Interconnection: The electrical transfer point between a Generator or a Generating Facility and the electrical system. This may or may not be coincident with the Point of Common Coupling.

Power Purchase Agreement (PPA): An arrangement for the sale of electricity by the Producer to RPU.

Producer: The entity that executes an Interconnection Agreement with RPU. The Producer may or may not own or operate the Generating Facility, but is responsible for the rights and obligations related to the Interconnection Agreement.

Production Test: A test performed on each device coming off the production line to verify certain aspects of its performance.

Protective Function(s): The equipment, hardware or software in a Generating Facility (whether discrete or integrated with other functions) whose purpose is to protect against Unsafe Operating Conditions.

Prudent Electrical Practices: Those practices, methods, and equipment, as changed from time to time, that are commonly used in prudent electrical engineering and operations to design and operate electric equipment lawfully and with safety, dependability, efficiency, and economy.

Scheduled Operation Date: The date specified in the Interconnection Agreement when the Generating Facility is, by the Producer's estimate, expected to begin operation pursuant to this Rule.

Secondary Network: A network supplied by several primary feeders suitably interlaced through the area in order to achieve acceptable loading of the transformers under emergency conditions and to provide a system of extremely high service reliability. Secondary networks usually operate at 600 V or lower.

Section 218 Load: Electrical power that is supplied in compliance with California Public Utilities Code Section 218. Public Utilities Code 218 defines an "Electric Corporation" and provides conditions under which a generator transaction would not classify a generating entity as an Electric Corporation. These conditions relate to "over-the-fence" sale of electricity from a generator without using the Distribution System.

Self-Generation Program: Applicable to all end-use Eligible Customer-Generators. An Eligible Customer Generator is a residential, commercial, industrial or agricultural Customer who uses a Renewable Electrical Generation Facility, or a combination of those facilities, with a capacity of not more than 5,000 kilowatts, that is located on the Customer's owned, leased, or rented premises, and is interconnected and operates in parallel with the Utility's distribution facilities, and is intended primarily to offset part or all of the Customer's own electrical requirements on the premises. Under this program maximum net export of the Generation Facility shall not exceed 1,000 kilowatts.

Simplified Interconnection: Interconnection conforming to the minimum requirements under these rules, as determined by Section I.

Short Circuit Contribution Ratio (SCCR): The ratio of the Generating Facility's short circuit contribution to RPU's short circuit contribution for a three-phase fault at the high voltage side of the distribution transformer connecting the Generating Facility to RPU's system.

Single Line Diagram; Single Line Drawing: A schematic drawing, showing the major electrical switchgear, protection devices, wires, generators, transformers and other devices, providing sufficient detail to communicate to a qualified engineer the essential design and safety of the system being considered.

Stabilization; Stability: The return to normalcy of the RPU Distribution System, following a disturbance. Stabilization is usually measured as a time period during which voltage and frequency are within acceptable ranges.

Starting Voltage Drop: The percentage voltage drop at a specified point resulting from In-rush Current. The Starting Voltage Drop can also be expressed in percentage on a particular base voltage, (e.g. 6 volts on a 120-volt base, yielding a 5% drop).

Supplemental Review: A process wherein RPU further reviews an Application that fails one or more of the Initial Review Process screens. The Supplemental Review may result in one of the following: a) Simplified Interconnection; b) approval of Interconnection with additional requirements; or c) cost and schedule for an Interconnection Study.

System Integrity: The condition under which a Distribution System is deemed safe and can reliably perform its intended functions in accordance with the safety and reliability rules of RPU.

Telemetry: The electrical or electronic transmittal of metering data in real-time to RPU.

Transfer Trip: A Protective Function that trips a Generating Facility remotely by means of an automated communications link controlled by RPU.

Type Test: A test performed on a sample of a particular model of a device to verify specific aspects of its design, construction and performance.

Unintended Island: The creation of an island, usually following a loss of a portion of the Distribution System, without the approval of RPU.

Unsafe Operating Conditions: Conditions that, if left uncorrected, could result in harm to personnel, damage to equipment, loss of System Integrity or operation outside pre-established parameters required by the Interconnection Agreement.

Visible Disconnect: An electrical switching device that can separate the Generating Facility from the Distribution System and is designed to allow visible verification that separation has been accomplished. This requirement can be met by opening the enclosure to observe the contact separation.

I. Initial Review Process for Applications to Interconnect a Generating Facility

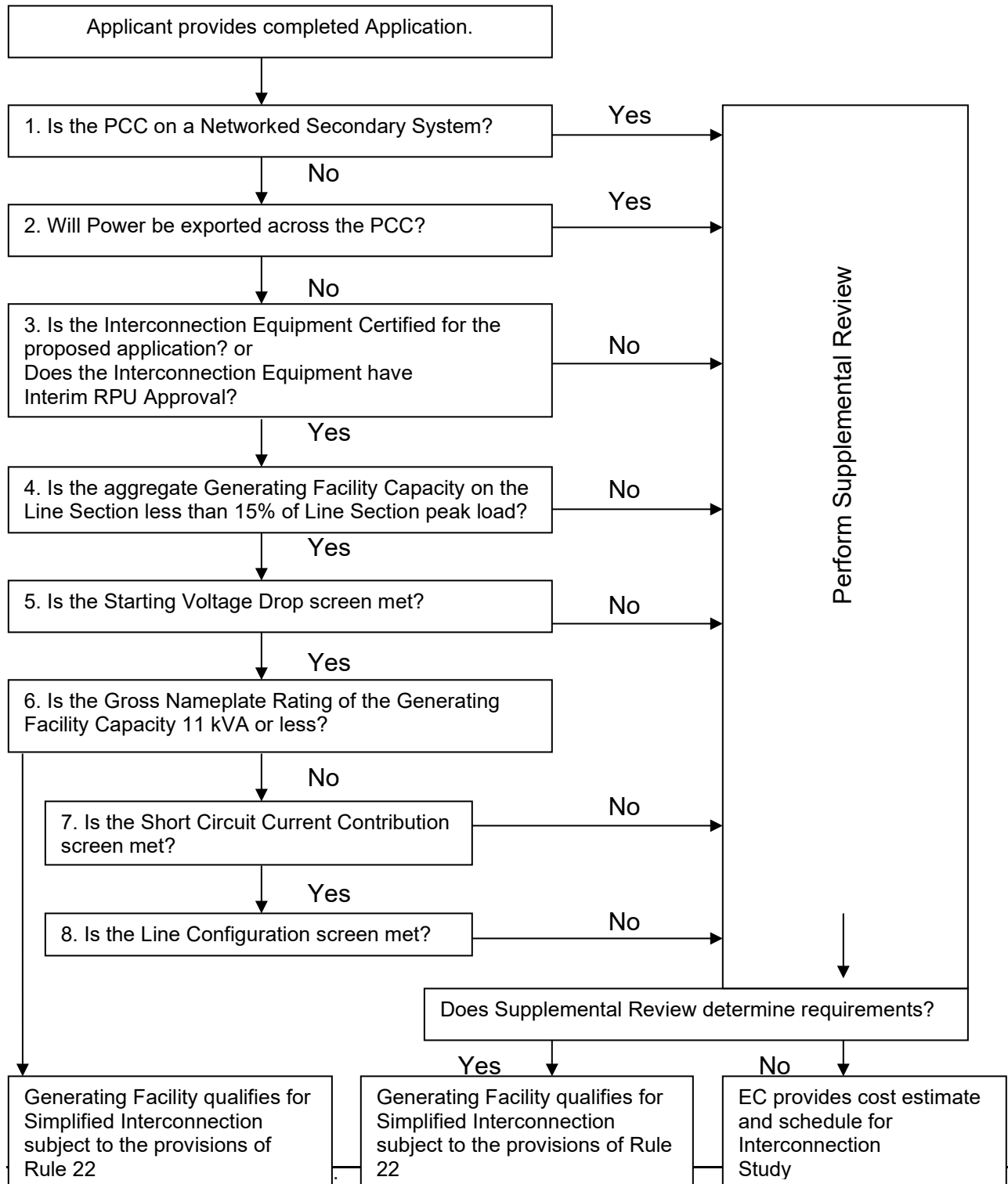
1. **Introduction.** This Initial Review Process was developed to create a path for selection and rapid approval for the Interconnection of those Generating Facilities that do not require an Interconnection Study. The Initial Review process includes a screening to determine if a supplemental review is required.

2. **Purpose.** The Initial Review determines:

- a. If a Generating Facility qualifies for Simplified Interconnection;
- b. If a Generating Facility can be made to qualify for Interconnection with Supplemental Review determining any potential additional requirements, or
- c. If an Interconnection Study is required, the cost estimate and schedule for performing the Interconnection Study.

NOTE: Failure to pass any screen of the Initial Review means only that further review or studies are required before the Generating Facility can be approved for interconnection with the RPU Distribution System. It does not mean that the Generating Facility cannot be interconnected.

Initial Review Process Flow Chart



3. Initial Review Process Details

a. Screen 1: Is the PCC on a Networked Secondary System?

- If No, continue to next screen
- If Yes, the Generating Facility does not qualify for Simplified Interconnection. Perform Supplemental Review.

Significance:

Special considerations must be given to the Generating Facilities proposed to be installed on networked secondary distribution systems because of the design and operational aspects of network protectors. There are no such considerations for radial distribution systems.

b. Screen 2: Will power be exported across the PCC?

- If Yes, the Generating Facility does not qualify for Simplified Interconnection. Perform Supplemental Review.
- If No, the Generating Facility must incorporate one of the following four options:

Option 1:

To ensure power is never exported, a reverse power Protective Function must be implemented at the PCC.

Default setting shall be 0.1% (export) of transformer rating, with a maximum 2.0 second time delay.

Option 2:

To ensure at least minimum import of power an under-power Protective Function must be implemented at the PCC.

Default setting shall be 5% (import) of the Generating Facility Gross Nameplate Rating, with maximum 2.0 second time delay.

Option 3:

To limit the incidental export of power, all of the following conditions must be met:

The aggregate capacity of the Generating Facility must be no more than 25% of the nominal ampere rating of the Customer's Service Equipment;

The total aggregate Generating Facility capacity must be no more than 50% of the service transformer rating. (This capacity requirement does not apply to Customers taking primary service without and intervening transformer);

The Generating Facility must be certified as Non-Islanding.

Option 4:

To ensure that the relative size (capacity) of the Generating Facility compared to facility load results in no export of power without the use of additional devices, the Generating Facility capacity must be no greater than 50% of the Customer's verifiable minimum load over the last 12 months.

Significance:

- (1) If it can be assured that the Generating Facility will not export power, RPU's Distribution System does not need to be studied for load-carrying capability or Generating Facility power flow effects on RPU voltage regulators as the

Generating Facility will simply be reducing Customer's load on RPU's Distribution System.

- (2) Permits use of reverse-power relaying at the PCC as positive anti-islanding protection.

c. Screen 3: Is the Interconnection Equipment Certified for the Application or does the Interconnection Equipment have Interim RPU Approval?

- If No, the Generating Facility does not qualify for Simplified Interconnection. Perform Supplemental Review.
- If Yes, continue to next screen.

Significance:

If the Generating Facility has been Certified or previously approved by RPU, RPU does not need to repeat its review and/or test of the Generating Facility's Protective Functions scheme. Site Commissioning Testing may still be required to ensure that the system is connected properly and that the protective functions are working properly.

Certification indicates the following criteria have been tested and verified:

- Basic protective function requirements.
- Harmonic distortion limits.
- Synchronizing requirements.
- Power factor regulation requirements.
- Non-Islanding requirements
- If used, reverse power function requirement.
- If used, under-power function requirement.

d. Screen 4: Is the aggregate Generating Facility capacity on the Line Section less than 15% of Line Section Peak Load?

- If Yes, continue to next screen.
- If No, Generating Facility does not qualify for Simplified Interconnection. Perform Supplemental Review to determine cumulative impact on Line Section.

Significance:

Low penetration of Generating Facility installations will have a minimal impact on Distribution System and load operation and power restoration.

The operating requirements for a high penetration of Generating Facilities may be different since the impact on RPU's Distribution System operation will no longer be minimal, therefore requiring additional study or controls.

e. Screen 5: Is the Starting Voltage Drop Within Acceptable Limits?

- If Yes, continue to next screen
- If No, the Generating Facility does not qualify for Simplified Interconnection. Perform Supplemental Review to determine cumulative impact on Line Section.

NOTICE: This screen only applies to Generating Facilities that start by motoring the Generator.

RPU has two options in determining whether Starting Voltage Drop could be a problem; which option to use is at RPU's discretion.

Option 1:

RPU may determine that the Generating Facility's starting Inrush Current is equal to or less than the continuous ampere rating of the Customer's service equipment.

Option 2:

RPU may determine the impedances of the service distribution transformer (if present) and secondary conductors to Customer's service equipment and perform a voltage drop calculation. Alternatively, RPU may use tables or nomographs to determine the voltage drop. Voltage drops caused by starting a Generating Unit as a motor must be less than 2.5% for primary interconnection and 5% for secondary interconnection.

Significance:

- (1) This screen addresses potential voltage fluctuation problems for generators that start by motoring.
- (2) When starting, a Generating Facility should have minimal impact on the service voltage or other RPU Customers.
- (3) Passing this screen does not relieve the Producer from ensuring that its Generating Facility complies with the flicker requirements of this Rule, Section D.

f. Screen 6: Is the Gross Nameplate Rating of the Generating Facility 11 kVA or less?

- If Yes, the Generating Facility qualifies for Simplified Interconnection. Skip remaining screens.
- If No, continue to next screen

Significance:

The Generating Facility has minimal impact on fault current levels and any potential line overvoltages from loss of system neutral grounding.

g. Screen 7: Is Short Circuit Current Contribution Within Acceptable Limits?

- If No, the Generating Facility does not qualify for Simplified Interconnection. Perform Supplemental Review.
- If Yes, continue to next screen.

Short Circuit Current Contribution Screen:

The Short Circuit Current Contribution Screen consists of two criteria; both of which must be met when applicable:

- (1) At primary side (high side) of the Dedicated Distribution Transformer, the sum of the Short Circuit Contribution Ratios (SCCR) of all Generating Facilities on the Distribution System circuit may not exceed 0.1.
- (2) At secondary (low side) of a shared distribution transformer, the short circuit contribution of the proposed Generating Facility must be less than or equal to 2.5% of the interrupting rating of the Producer's Service Equipment.

Significance:

No significant Generating Facility impact on:

- (1) Distribution System's short circuit duty
- (2) Distribution System fault detection sensitivity
- (3) Distribution System relay coordination
- (4) Distribution System fuse-saving schemes

If the Generating Facility passes this screen it can be expected that it will have no significant impact on RPU's Distribution System's short circuit duty, fault detection sensitivity, relay coordination or fuse-saving schemes.

h. Screen 8: Is the Line Configuration Acceptable for Simplified Interconnection?

- If No, then the Generating Facility does not qualify for Simplified Interconnection. Perform Supplemental Review.
- If Yes, the Generating Facility qualifies for Simplified Interconnection.

Line Configuration Screen:

Identify primary distribution line configuration that will serve the proposed Generating Facility. Based on the type of Interconnection to be used for the Generating Facility, determine from the following table if the proposed Generating Facility passes the screen.

Primary Distribution Line Type	Type of Interconnection to Primary Distribution Line	Result/Criteria
Three-phase, three wire	Any	Pass screen
Three-phase, four wire	Single-phase, line-to-neutral	Pass screen
Three-phase, four wire (For any line that has such a section OR mixed 3 wire & 4 wire)	All others	To pass, aggregate Generating Facility Capacity must be less than or equal to 10% of Line Section Peak Load.

Significance:

If the primary distribution circuit serving the Generating Facility is of a three-wire type, or if the Generating Facility's Interconnection transformer is single-phase and connected in a line-to-neutral configuration, then there is no concern about overvoltages to RPU's or other Customer's equipment caused by loss of system neutral grounding during the operating time of anti-islanding protection.

J. Testing and Certification Criteria

1. Introduction

This Section describes the test procedures and requirements for equipment used for the Interconnection of a Generating Facility to RPU's Distribution System. Included are Type Testing, Production Testing, Commissioning Testing, and Periodic Testing. The procedures listed rely heavily on those described in applicable Underwriters Laboratory (UL), Institute of Electrical and Electronic Engineers (IEEE), and International Electrotechnical Commission (IEC) documents – most notably UL 1741 and IEEE 929 – as well as the testing described in the New York State Public Service Commission's Interconnection requirements¹. These procedures and requirements were developed prior to the completion of IEEE P1547.

1 “New York State Standardized Interconnection Requirements, Application Process, Contract & Application Forms For New Distributed Generators, 300 Kilovolt - Amperes or Less, Connected In Parallel with Radial Distribution Lines”, November 9, 2000.

Standard for Distributed Resources Interconnected with Electric Power Systems, and should be revisited once that standard is published. The tests described here, together with the technical requirements in Section D of this Rule, are intended to provide assurance that the Generating Facility's equipment will not adversely affect RPU's Distribution System and that a Generating Facility will cease providing power to RPU's Distribution System under abnormal conditions. The tests were developed assuming a low level of Generating Facility penetration. At high levels of Generating Facility penetration, other requirements and corresponding test procedures may need to be defined.

This test specification also provides a means of certifying equipment. Once a Generating Unit or device has been Certified per this Certification Process, it may be considered to be suitable for use as part of a Generating Facility interconnected with RPU's Distribution System. Subject to the exceptions described in this Section, RPU will not require a Producer to repeat the design review or test the Protective Functions of equipment that has been Certified. It should be noted the Certification process is intended to facilitate Generating Facility interconnections. Certification is not a prerequisite to interconnect a Generating Facility. The use of non-certified equipment may be acceptable subject to testing and approval by RPU as discussed below.

2. Certification Criteria

Equipment tested and approved (e.g. listed) by a NRTL as having met both the Type Testing and Production Testing requirements is considered to be Certified Equipment for purposes of Interconnection with RPU's Distribution System. Certification may apply to either a pre-packaged system or an assembly of components that address the necessary functions. Type Testing may be done in the factory/test lab or in the field. At the discretion of the testing laboratory, field-certification may apply only to the particular installation tested. In such cases, some or all of the tests may need to be repeated at other installations.

The use of Certified Equipment is not a requirement for interconnection. However, the use of Certified Equipment will simplify the interconnection approval process by reducing Commissioning and additional test requirements. For non-certified equipment, some or all of the tests described in this document may be required by RPU for each Generating Facility. The manufacturer or a laboratory acceptable to RPU may perform these tests. Test results for non-certified equipment must be submitted to RPU as part of the application process for RPU's review and approval under the Supplemental Review. Approval by RPU for equipment used in a particular application does

not guarantee RPU approval for use in other applications or by other California electric utilities.

When equipment is Certified by a NRTL, the NRTL shall provide to the manufacturer, at a minimum, a Certificate with the following information for each device:

a. Administrative:

- (1) Effective date of certification or applicable serial number (range or first in series), other proof that certification is current
- (2) Equipment model number (s)
- (3) Software version, if applicable
- (4) Test procedures specified (including date or revision number)
- (5) Laboratory accreditation (by whom and to what standard)

b. Technical (As appropriate)

- (1) Device rating (kW, kVA, V, A, etc.)
- (2) Maximum available fault current, A
- (3) In-rush current, A
- (4) Trip points, if factory set (trip value and timing)
- (5) Trip point and timing ranges for adjustable settings
- (6) Nominal power factor or range if adjustable
- (7) If the device/system is certified for non-export and the method used (reverse power or under power)
- (8) If the device/system is certified non-islanding

It is the responsibility of the equipment manufacturer to ensure that certification information is made publicly available by the manufacturer, the testing laboratory, or by a third party. A sample certification information form is provided in Appendix K.

3. Type Testing

Type testing provides a basis for determining that equipment is designed appropriately and meets the specifications for being designated as Certified Equipment under this Rule. The requirements described in this section cover only issues related to Interconnection and are not intended to address device safety or other issues outside the needs of the relationship between RPU and the Producer operating a Generating Facility.

The following table defines the test requirements by technology. Test References that are preceded by “UL 1741” refer to the section numbers of the document that describe the test requirements.² While UL 1741 was written specifically for photovoltaic inverters, the requirements are readily adapted to inverter-based Generating Facilities, synchronous machines, induction machines, as well as single/multi-function controllers and protection relays. Until a standardized test procedure is specified, RPU or NRTL shall adapt the procedures referenced in the following table as appropriate and necessary for a machine’s performance and its control and protection system functions.

Type Tests and Requirements for Interconnection Equipment Certification

Type Test	Reference ¹	Inverter	Synchronous Machine	Induction Machine
Utility Interaction	UL 1741 – 39	X	X	X
DC Isolation	UL 1741 – 40.1	X	---	---
Simulated PV Array (Input) Requirements	UL 1741 – 41.2	X	---	---
Dielectric Voltage Withstand	UL 1741 – 44	X	X	X
Power Factor	UL 1741 – 45.2.2	X	X	X
Harmonic Distortion	UL 1741 – 45.4	X	X	X
DC Injection	UL 1741 – 45.5	X	---	---
Utility Voltage and Frequency Variation	UL 1741 – 46.2	X	X	X
Reset Delay	UL 1741 – 46.2.3	X	X	X
Loss of Control Circuit	UL 1741 – 46.4	X	X	X
Short Circuit	UL 1741 – 47.3	X	X	X
Load Transfer	UL 1741 – 47.7	X	X	X
Surge Withstand	J.3.a	X	X	X
Anti Islanding	J.3.b	(2)	(2)	(2)
Non-Export	J.3.c	(3)	(3)	(3)
In-Rush Current	J.3.d	(4)	(4)	(4)
Synchronization	J.3.e	(5)	X	---

Notes: X = Required; - = Not required

Table Notes:

- (1) Reference refers to section number in either UL 1741 or this Rule. References within UL1741 to “photovoltaics” or “inverter” may have to be interrupted by the testing laboratory to appropriately apply the tests to other technologies.
- (2) Required only if Non-Islanding designation is desired.
- (3) Required only if Non-Export designation is desired.
- (4) Required for devices that use RPU power to motor to speed.
- (5) Required for all synchronous machines as well as inverters that operate as voltage sources when connected to RPU.

² UL 1741, *Inverters, Converters and Charge Controllers for use in Independent Power Systems*, Revised January 2001

a. Anti-Islanding Test

Devices that are tested to and pass the Anti-Islanding test procedure described in UL 1741 Section 46.3 will be considered Non-Islanding for the purposes of these interconnection requirements. This test is required only for devices for which a certified Non-Islanding designation is desired.

b. Non-Export Test

Devices that pass the Non-Export test procedure described in Section J.7.a. will be considered Non-Exporting for the purposes of these interconnection requirements. This test is required only for devices for which a certified Non-Export designation is desired.

c. In-rush Current Test

Will be tested using the procedure defined in Section J.7.b. to determine the maximum current drawn during this startup process. The resulting in-rush current is used to estimate the starting voltage drop.

d. Surge Withstand Capability Test

Interconnection equipment shall be tested for surge withstand capability (SWC), both oscillatory and fast transient, in accordance with the test procedure defined in IEEE/ANSI C62.45 using the peak values defined in IEEE/ANSI C62.41 Tables 1 and 2 for location category B3. An acceptable result occurs even if the device is damaged by the surge, but is unable to operate or energize RPU's Distribution System. If the device remains operable after being subject to the surge conditions, previous type tests related to RPU protection and power quality will need to be repeated to ensure the unit will still pass those tests following the surge test.

e. Synchronization Test

This test verifies that the unit synchronizes within the specified voltage/frequency/phase angle requirements. It is applied to synchronous generators and inverters capable of operating as voltage-sources while connected to RPU. This test is not necessary for induction generators or current- source inverters.

The test will start with only one of the three parameters --voltage difference between Generating Facility and RPU Distribution System, frequency difference, or phase angle--outside of the synchronization specification. Initiate the synchronization routine and verify that the Generating Facility is brought within specification prior to synchronization. Repeat the test five times for each of the three parameters.

For manual synchronization with synch check or manual control with auto synchronization, the test must verify that paralleling does not occur until the parameters are brought within specifications.

4. Production Testing

As a minimum, the Utility Voltage and Frequency Variation Test procedure described in UL1741 under Manufacturing and Production Tests, Section 68 shall be performed as part of routine production (100 percent) on all equipment used to interconnect Generating Facilities to RPU's Distribution System. This testing may be performed in the factory or as part of a Commissioning Test (Section J.5).

5. Commissioning Testing

Commissioning Testing, where required, will be performed on-site to verify protective settings and functionality. Upon initial Parallel Operation of a Generating Facility, or any time interface hardware or software is changed that may affect the functions listed below, a Commissioning Test must be performed. An individual qualified in testing protective equipment (professional engineer, factory-certified technician, or licensed electrician with experience in testing protective equipment) must perform commissioning testing in accordance with the manufacture's recommended test procedure to prove the settings and requirements of this Rule.

The RPU has the right to witness Commissioning Tests as described below, or to require written certification by the installer describing which tests were performed and their results.

Functions to be tested during commissioning, particularly with respect to non-certified equipment, may consist of the following:

- a. Over-and under-voltage
- b. Over- and under-frequency
- c. Anti-Islanding (if applicable)
- d. Non-Export (if applicable)
- e. Inability to energize dead line
- f. Time delay restart after utility source is stable
- g. Utility system fault detection (if used)
- h. Synchronizing controls (if applicable)
- i. Other interconnection protective functions that may be required as part of the Interconnection Agreement

Other checks and tests that may need to be performed include:

- a. Verifying final protective settings
- b. Trip test
- c. In-service test

a. Certified Equipment

Generating Facilities qualifying for Simplified Interconnection incorporate Certified Equipment that have, at a minimum, passed the Type Tests and Production Tests described in this document, are judged to have little or no potential impact on RPU's Distribution System. For such Generating Facilities, it is necessary to perform only the following test:

1. Protection settings that have been changed after factory testing will require field verification. Tests will be performed using injected secondary voltages and currents, applied waveforms, a test connection using a generator to simulate abnormal utility voltage or frequency, or varying the set points to show that the device trips at the measured (actual) utility voltage or frequency.
2. Non-Islanding function, if included, will be checked by opening a load break disconnect switch to verify the interconnection equipment ceases to energize the line and does not re-energize for the required time delay after the switch is closed.
3. Non-Export function, if included, will be checked using secondary injection techniques. This function may also be tested by adjusting the Generating Facility output and local loads to verify that the applicable non-export criteria (i.e., reverse power or under power) are met.

The Supplemental Review or an Interconnection Study may impose additional components or additional testing.

b. Non-Certified Equipment

Non-certified equipment shall be subjected to the appropriate tests described in Type Testing (Section J.3.) as well as those described in Certified Equipment (Section J.5.a.). With RPU approval, these tests may be performed in the factory, in the field as part of commissioning, or a combination of both. RPU, at its discretion, may also approve a reduced set of tests for a particular application or, for example, if it determines it has sufficient experience with the equipment.

c. Verification of Settings

If the testing is part of the commissioning process, then, at the completion of such testing, the Producer shall confirm all devices are set to RPU-approved settings. This step shall be documented in the Commissioning Test Certification.

d. Trip Test

Interconnection protective devices (e.g. reverse power relay) that have not previously been tested as part of the interconnection system with their associated interrupting devices (e.g. contactor or circuit breaker) shall be trip tested during commissioning. The trip test shall be adequate to prove that the associated interrupting devices open when the protective devices operate.

Interlocking circuits between protective devices or between interrupting devices shall be similarly tested unless they are part of a system that has been tested and approved during manufacture.

e. In-service Test

Interconnection protective devices that have not previously been tested as part of the interconnection system with their associated instrument transformers or that are wired in the field shall be given an in-service test during commissioning. This test will verify proper wiring, polarity, CT/PT ratios, and proper operation of the measuring circuits. The in-service test shall be made with the power system energized and carrying a known level of current. A measurement shall be made of the magnitude and phase angle of each ac voltage and current connected to the protective device and the results compared to expected values.

For protective devices with built-in metering functions that indicate current and voltage magnitudes and phase angles, or magnitudes of current, voltage, and real and reactive power, the metered values may be used for in-service testing. Otherwise, portable ammeters, voltmeters, and phase-angle meters shall be used.

6. Periodic Testing

Periodic Testing of Interconnection-related Protective Functions shall be performed as specified by the manufacturer, or at least every four years. All periodic tests prescribed by the manufacturer shall be performed. The Producer shall maintain periodic test reports or a log for inspection by RPU. Periodic Testing conforming to RPU test intervals for the particular line section may be specified by RPU under special circumstances, such as high fire hazard areas.

A system that depends upon a battery for trip power shall be checked and logged once per month for proper voltage. Once every four years, the battery must be either replaced or a discharge test performed.

7. Detailed Type Test Procedures and Requirements

This section describes the additional Type Test procedures necessary to qualify a device as Certified, for use on the RPU Distribution System. These

Type Tests are not contained in Underwriters Laboratories UL 1741 Standard *Inverters, Converters and Controllers for Use in Independent Power Systems*, or other referenced standards.

a. Non-Export Test Procedure

The non-export test is intended to verify the operation of relays, controllers and inverters designed to limit the export of power and certify the equipment as meeting the requirements of Screen 2, Options 1 and 2, of the Initial Review Process. Tests are provided for discrete relay packages and for controllers and inverters that include the intended function.

(1) Reverse Power Relay Test

This version of the Non-Export test procedure is intended for stand-alone reverse power and under power relay packages provided to meet the requirements of Options 1 and 2 of the Non-Export Screen. It should be understood that in the reverse power application, the relay will provide a trip output with power in the export (toward RPU system) direction.

Step 1: Power Flow Test at Minimum, Midpoint and Maximum Pickup Level Settings

Determine the appropriate secondary pickup current for the desired export power flow of 0.5 secondary watts (the agreed-upon minimum pickup setting assumes 5 Amp and 120V CT/PT secondary). Apply nominal voltage with minimum current setting at 0 degrees in the trip direction. Increase the current to pick up level. Observe the relay's (LCD or computer display) indication of power values. Note the indicated power level at which the relay trips. The power indication should be within 2 percent of the expected power. For relays with adjustable settings, repeat this test at the midpoint, and maximum settings.

Repeat at phase angles of 90, 180, and 270 degrees and verify that the relay does NOT operate (measured watts will be zero or negative).

Step 2: Leading Power Factor Test

Apply rated voltage with a minimum pickup current setting (calculated value for system application) and apply a leading power factor load current in the non-trip direction (current lagging voltage by 135 degrees). Increase the current to relay rated current and verify that the relay does NOT operate. For relays with adjustable settings, this test should be repeated at the minimum, midpoint, and maximum settings.

Step 3: Minimum Power Factor Test

At nominal voltage and with the minimum pickup (or ranges) determined in Step 1, adjust the current phase angle to 84 or 276 degrees. Increase the current level to pickup (about 10 times higher than at 0 degrees) and verify that the relay operates. Repeat for angles 90, 180, and 270 degrees and verify that the relay does NOT operate.

Step 4: Negative Sequence Voltage Test

Using the pickup settings determined in Step 1, apply rated relay voltage and current at 180 degrees from tripping direction, to simulate normal load conditions (for 3-phase relays, use I_a at 180, I_b at 60 and I_c and 300 degrees). Remove Phase-1 voltage and observe that the relay does not operate.

Repeat for phase-2 and 3.

Step 5: Load Current Test

Using the pickup settings determined in Step 1, apply rated voltage and current at 180 degrees from the tripping direction, to simulate normal load conditions (use I_a at 180, I_b at 300 and I_c at 60 degrees). Observe that the relay does NOT operate.

Step 6: Unbalanced Fault Test

Using the pickup settings determined in Step 1, apply rated voltage and 2 times rated current, to simulate an unbalanced fault in the non-trip direction (use V_a at 0 degrees, V_b and V_c at 180 degrees, I_a at 180 degrees, I_b at 0 degrees and I_c at 180 degrees). Observe that the relay, especially single phase, does not misoperate.

Step 7: Time Delay Settings Test

Apply Step 1 settings and set time delay to minimum setting. Adjust the current source to the appropriate level to determine operating time, and compare against calculated values. Verify that the timer stops when the relay trips. Repeat at midpoint and maximum delay settings.

Step 8: Dielectric Test

Perform the test described in IEC 414 using 2 kV RMS for 1 minute.

Step 9: Surge Withstand

Perform the surge withstand test described in IEEE C37.90.1.1989 or the surge withstand test described in Section J.3.g.

(2) Under Power Relay Test

In the underpower application, the relay will provide a trip output when import power (toward the Producer) drops below the specified power level.

Note: For an underpower relay, pickup is defined as the highest power level at which the relay indicates that the power is *less* than the set setting.

Step 1: Power Flow Test at Minimum, Midpoint and Maximum Pickup Level Settings

Determine the appropriate secondary pickup current for the desired power flow pickup level of 5% of peak load (the agreed-upon minimum pickup setting). Apply rated voltage and current setting at 0 degrees in the direction of normal load current. Decrease the current to pickup level. Observe the relay's (LCD or computer display) indication of power values. Note the indicated power level at which the relay trips. The power indication should be within 2 percent of the expected power. For relays with adjustable settings, repeat the test at the midpoint, and maximum settings.

Repeat at phase angles of 90, 180, and 270 degrees and verify that the relay operates (measured watts will be zero or negative).

Step 2: Leading Power Factor Test

Using the pickup current setting determined in step 1, apply rated voltage and rated leading power factor load current in the normal load direction (current leading voltage by 45 degrees). Decrease the current to 145% of the pickup level determined in Step 1 and verify that the relay does NOT operate. For relays with adjustable settings, repeat the test at the minimum, midpoint, and maximum settings.

Step 3: Minimum Power Factor Test

At nominal voltage and with the minimum pickup (or ranges) determined in Step 1, adjust the current phase angle to 84 or 276 degrees. Decrease the current level to pickup (about 10% of the value at 0 degrees) and verify that the relay operates. Repeat for angles 90, 180 and 270 degrees and verify that the relay operates for any current less than rated current.

Step 4: Negative Sequence Voltage Test

Using the pickup settings determined in Step 1, apply rated relay voltage and 25% of rated current in the normal load direction, to stimulate light load conditions. Remove Phase-A voltage and

observe that the relay does not operate, repeat for phase-B and C.

Step 5: Unbalanced Fault Test

Using the pickup settings determined in Step 1, apply rated voltage and 2 times rated current, to stimulate an unbalanced fault in the normal load direction (use V_a at 0 degrees, V_b and V_c at 180 degrees, I_a at 0 degrees, I_b at 180 degrees, and I_c at 0 degrees). Observe that the relay, especially single phase, operates properly.

Step 6: Time Delay Settings Test

Apply Step 1 settings and set time delay to minimum setting. Adjust the current source to the appropriate level to determine operating time, and compare against calculated values. Verify that the timer stops when the relay trips. Repeat at midpoint and maximum delay settings.

Step 7: Dielectric Test

Perform the test described in IEC 414 using 2 kV RMS for 1 minute.

Step 8: Surge withstand

Perform the surge withstand test described in IEEE C37.90.1.1989 or the surge withstand test described in Section J.3.g.

(3) Functional Test for Inverters and Controllers

Inverters and controllers designed to provide reverse or under power functions shall be tested to certify the intended operation of this function. Two methods are provided.

Method 1: If the controller utilizes external current/voltage measurement to determine the reverse or underpower condition, then the controller shall be functionally tested by application of appropriate secondary currents and potentials as described in the Reverse Power Relay Test, Section J.7.a.(1) of this Rule.

Method 2: If external secondary current or potential signals are not used, then unit-specific tests must be conducted to verify that power cannot be exported across the PCC for a period exceeding two seconds. These tests may be factory tests, if the measurement and control points are part of a single unit, or may be provided for in the field.

b. In-Rush Current Test

This test will determine the maximum in-rush current drawn by the unit.

(1) Locked-Rotor Method

Use the test procedure defined in NEMA MG-1 (manufacturer's data is acceptable if available).

(2) Start-up Method

Install and setup the Generating Facility equipment as specified by the manufacturer. Using a calibrated oscilloscope or data acquisition equipment with appropriate speed and accuracy, measure the current draw at the Point of Interconnection as the Generating Facility starts up and parallels with RPU's Distribution System. Startup shall follow the normal, manufacturer-specified procedure.

Sufficient time and current resolution and accuracy shall be used to capture the maximum current draw within five percent. In-rush current is defined as the maximum current draw from RPU's Distribution System during the startup process, using a 10-cycle moving average. During the test, the utility source, real or simulated, must be capable of maintaining voltage within +/- five percent of rated at the connection to the unit under test. Repeat this test five times. Report the highest 10-cycle current as the in-rush current.

A graphical representation of the time-current characteristic along with the certified in-rush current must be included in the test report and made available to RPU.

Appendix 1
Utility Interconnection Equipment Certification Form

Utility Interconnection Equipment Certification

The information on this form is provided to indicate the compliance of the generation equipment listed below with the utility interconnection certification requirements defined in this Rule.

Certifying Laboratory *The information on this form is provided by the following Nationally Recognized Test Laboratory:*

Laboratory: _____

Contact Name: _____ Phone: _____ E-mail: _____

Address: _____

City: _____ State: _____ Zip: _____

Accredited by: _____ Date: _____

Accredited to (test standards)¹: _____

Equipment Specification *The information on this form applies to the following equipment:*

Equipment Manufacturer: _____

Address: _____

City: _____ State: _____ Zip: _____

Model Number(s): _____

Software Version(s): _____

Effective ²: _____

Device Description ³: _____

Test results ⁴

Mark the box next to each requirement that has been met and each test that has been performed and successfully passed. Provide an explanation of any exceptions or omissions on a separate sheet. List additional test documents used on separate sheet.

UL 1741: (Section number listed)

☐-39 ☐-40.1 ☐-41.2 ☐-44 ☐-45.2.2 ☐-45.4 ☐-45.5
☐-46.2 ☐-46.2.3 ☐-46.4 ☐-47.3 ☐-47.7 *Optional* ☐-46.3

☐ - IEEE/ANSI C62.45/C62.41 (location Category B3)

California Rule 21: ☐-J.3.e Non-export ☐-J.3.f. In-Rush Current ☐-J.3.h. Synchronization

Device Rating⁵: _____

Maximum available fault current, A _____

In-rush current⁶, A _____

Trip settings⁷:

		Setting 1	Setting 2	Setting 3	Setting 4	Setting 5	Factory Settings ⁸
Fast Over Voltage	Setting						
	Measured						
Fast Over Voltage	Setting						
	Measured						
Fast Over Voltage	Setting						
	Measured						
Fast Over Voltage	Setting						
	Measured						
Fast Over Voltage	Setting						
	Measured						
Fast Over Voltage	Setting						
	Measured						

Nominal Power Factor (Range, if adjustable)

Non Islanding: Yes ___ No ___ Maximum trip time: _____

Non Export: Yes ___ No ___ Method: _____

Adopted by Board of Public Utilities:
Approved by City Council:
Effective Date:

Board Resolution No.
Council Resolution No.

Other 8:

NOTES

-
- 1 Accreditation must apply to tests standards listed herein
 - 2 Note here the date of certification, applicable serial number (range or first in series), or other information that indicates which units the certification applies to.
 - 3 List appropriate functions, capabilities, applications, limitations, etc. Use additional sheets as necessary.
 - 4 List all test documents (i.e. UL 1741, IEEE C62.45) and specific procedures (i.e. UL 1741 Sec 39.1 – 39.5, etc.) used to evaluate device's suitability for utility interconnection.
 - 5 kW, kVA, V, A, etc. as appropriate
 - 6 For devices that use grid power to motor to speed
 - 7 Trip value (Voltage in volts or frequency in Hz) and timing (in cycles). Devices with adjustable settings shall provide test results over the range of settings. For each test setting provide the setting values in the upper box and measured results in the lower box. List device ranges, if adjustable.
 - 8 Provide any additional information that may be useful in evaluating these results such as test configurations, device settings used to meet requirements, etc. Use additional sheets if necessary.

APPENDIX A

WATER FEES AND CHARGES SCHEDULE

APPLICABILITY

Applicable to all classes of service as provided in accordance with the Water Rules and Regulations. Does not supersede any fees and charges listed in the rules which are not included on this schedule.

<u>RULE NUMBER</u>	<u>DESCRIPTION</u>	<u>FEE AMOUNT</u>
4	Minimum Deposit/Residential (Initial Service)	\$40.00
4	Minimum Deposit/All other classes	Twice the estimated average bill or \$40.00 minimum
4	Minimum Deposit/Reconnection/All Classes of Service	Three times the estimated average monthly water bill or \$40.00 minimum
4	Service Turn-on Charge (Same fee applies whether turning on one service or both)	\$21.50 Next day \$37.50 Same day \$53.75 After hours
4	Special Appointment Turn-On Charge added to applicable fee (Does not apply to the normal 4-hour window)	\$10.75
5	Return Check Charge	In accordance with City of Riverside Ordinance
6	Meter Test/Second Request Within One Year Period	\$107.50 Paid in advance – if error is found, fee will be refunded
6	Re-Read/second request within six months	\$26.75 (If error is found, fee will be waived)

<u>RULE NUMBER</u>	<u>DESCRIPTION</u>	<u>FEE AMOUNT</u>
7	Fund Verification Fee	\$5.25
7	48-Hour Field Notification (Master Metered accounts receive Multi-Unit notification)	\$21.50 plus \$1.00 per each additional notice per account
7	Trip charge for additional field visit (Cut-off, non-pay, etc).	\$16.00
7	Service Reconnection Charge (Same fee applies whether reconnecting for CONP one service or both)	\$43.00 next day \$64.50 same day \$79.25 after hours
7	Additional Fee will be added to Reconnect S.O. if Customer has self-restored	Time and Material will be added to applicable Service Order Fee
7	Reconnection Charge/Additional-Meter Removed	\$86.00 plus material
8	Temporary Water Service	Time and Material
8	Temporary Water Service-Fire Hydrant Water Meter	
	- Processing Fee	\$ 43.00 per meter
	- Deposit	\$2,000.00 per meter
8	Set, Move or Relocation of Temporary Fire Hydrant Water Meter	Time and Material
8	Failure to Return Meter to Meter Shop for Reading per month	Schedule WA-2.B.3.
8	Annual testing of City Department Water Meters	\$10.75 per meter
8	Removal of Fire Hydrant Operating Nut	\$32.25

<u>RULE NUMBER</u>	<u>DESCRIPTION</u>	<u>FEE AMOUNT</u>
8	Rental of Backflow Prevention Assembly Per Assembly	
	- Processing Fee	\$ 40.00
	- Deposit	\$1,000.00
	Daily Rental Charge-Two-Inch Backflow Preventer	\$5.00 per calendar day
8	Set or move Backflow Prevention Assembly from location to location	Time and material
10	Covenant & Agreement Charge – Preparation Charge	\$1,075.00
10	Backup Facility Capacity Charges	
	¾ inch	\$ 2,250.00
	1 inch	\$ 5,060.00
	1 ½ inch	\$ 9,560.00
	2 inch	\$ 14,400.00
	3 inch	\$ 25,300.00
	4 inch	\$ 39,380.00
	6 inch	\$ 73,130.00
	8 inch	\$108,000.00
	10 inch	\$135,000.00
10	Elevation Fee (Per Acre or Portion Thereof)	
	Norminal Zone Designation	
	Gravity	\$ 0.0
	925	\$ 0.0
	1037	\$ 340.00
	1080	\$ 420.00
	1100	\$ 600.00
	1160	\$ 780.00
	1200	\$1,000.00
	1300	\$1,380.00
	1400	\$1,720.00
	1600	\$2,480.00
	1680	\$2,730.00
	1750	\$3,090.00

<u>RULE NUMBER</u>	<u>DESCRIPTION</u>	<u>FEE AMOUNT</u>
10	Distribution System Fee (per lineal foot)	\$49.00
10	Plan Check Fee	Time and Materials with Deposit
10	Sungold Agreement Elevation Fee – 1100-feet and higher (per acre)	\$40.00
<u>INSPECTION FEES</u>		
10	Inspection Fees (per lineal foot of pipeline)	\$247.25 plus \$1.00 per lineal foot of pipeline
10	Fire Hydrant (for each)	\$86.00
10	1 inch Service (for each)	\$ 18.25
	2 inch Service (for each)	\$ 53.75
	4 inch Service or larger (for each)	\$494.50
10	Initial Pressure Test (for each)	\$215.00
10	Pressure Test (for each after Initial) (re-test)	\$155.75
10	Extended Construction	\$1.00 per lineal foot
10	Additional Inspection Visits	\$72.00 per hour
10	For each wet tap witnessed by Water Utility inspectors	\$215.00
10	Water Service Connections for Individual Premises of 4" or larger, Cash Refundable Bond (per Connection) to guarantee final completion by private contractor	\$500.00

<u>RULE NUMBER</u>	<u>DESCRIPTION</u>	<u>FEE AMOUNT</u>
10	Water Meter Charges	
	¾ inch Meter	\$ 81.50
	1 inch Meter	\$ 94.50
	1 ½ inch Meter	\$218.00
	2 inch Meter	\$264.25
	3 inch Meter or Larger	At Estimated Cost of Installation
10	Water Main Oversizing Reimbursement	
	8-inch Standard – 12-inch Oversized	\$16.00 per lineal foot
	12-inch Standard – 16-inch Oversized	\$24.00 per lineal foot
11	Bacteriological Testing for Water Meters	\$215.00
	2-Inch and Larger Flushing Testing Charge	
11	Request for larger meter upon lateral replacement	
	5/8-inch to ¾-inch	\$20.00
	¾-inch to 1-inch	\$16.00
	(in addition to any applicable Backup Facility Capacity Charges)	
11	Request for larger meter. No lateral replacement (in addition to any other applicable charges)	\$34.25
11	Relocation of fire hydrants	Time and Material
11	Repair of Water Facilities	Time and Material Plus \$53.75
11	Water Service Connection Charges	
	¾ inch meter	\$1,402.75
	1 inch meter	\$1,419.00
	1½ inch meter	\$2,423.00
	2 inch meter	\$2,466.00
	3 inch meter	At estimated cost of installation

<u>RULE NUMBER</u>	<u>DESCRIPTION</u>	<u>FEE AMOUNT</u>
11	Fire Service Connection above-ground (2 inch and larger)	At estimated cost of installation
13	Test/Repair of Backflow Prevention Assembly	\$537.50 plus parts
14	Turn-On and Turn-Off of Water Service for Repair by Customer	
	<u>Monday through Friday</u>	
	6:00 pm to 10:00 pm	\$48.25
	10:00 pm to 7:30 am	\$91.25
	<u>Weekends and Holidays</u>	
	3:30 pm to 7:30 pm	\$48.25
	7:30 pm to 7:30 am	\$91.25
16	Gage Canal Company (Contracts Only)	\$107.50
19	Cost to investigate Water Diversion	The higher of \$53.75 plus material or time and materials
20	Appointment based meter reads	\$26.75
20	Monthly rental of Remote Metering to resolve access issues	\$2.50

WATER RULE 8

TEMPORARY WATER SERVICE

A. APPLICABILITY OF RULE

Temporary water service shall be provided for:

1. Fairs, circuses, bazaars, temporary restaurants and other establishments not of a permanent nature.
2. Interim Water Service (commercial agricultural uses)
3. Construction purposes.

B. USES AND APPLICATIONS

1. Temporary Water Service

Temporary water service normally shall be furnished subject to a charge which shall cover the actual costs of installing and removing the required connections, including overhead and administration expenses. Customer and consumption charges shall be at the applicable tariff in effect.

2. Temporary Service – Fire Hydrant Water Meters

- a. Water may be withdrawn from appropriately marked fire hydrants through a fire hydrant water meter rented from the Water Utility upon payment of the following fees:
 - (1) Processing Fee: \$43.00 for each meter
 - (2) Deposit: \$2,000.00 for each meter
 - (3) The Water Utility reserves the right to remove a Customer from the use of a fire hydrant if the use is causing disturbance to the water system.
- b. Rental and consumption charges shall be in accordance with:
 - (1) Rate Schedule WA-2 (unless otherwise approved by the Director) or,
 - (2) Rate Schedule WA-6 – Other City Departments (only permanently assigned fire hydrant water meters).

- c. Customers may pick up fire hydrant water meters at water meter shop and move meters from one location to another in accordance with Water Utility standards. However, if Water Utility personnel are requested to set, move or relocate fire hydrant water meters, or if Customer does not follow Water Utility standards and procedures, a charge of actual cost of labor, equipment, materials and overhead will be billed to Customer for each set or move made.
 - d. Fire hydrant water meters shall be returned to the water meter shop on any workday between the 15th and the 20th of each month to be read for billing purposes and to be checked over by meter shop personnel. Meters picked up between the 15th and the last day of the month need not be returned during the current month. In addition to all other charges, an estimated monthly charge (per Schedule WA-2.B.3) shall be made to cover cost of billing each month for each meter not returned for reading and checking.
 - e. All water taken from the water system must be through a Water Utility approved fire hydrant water meter.
 - f. Return of a deposit is subject to the payment for water used at the applicable rate, and the return of the fire hydrant water meter in satisfactory condition. A deduction from the deposit shall be made to cover the cost of necessary repairs to, or replacement of the meter, and for other fees and charges.
 - g. Fire hydrant water meters used by other City departments shall be scheduled annually for testing by water meter shop personnel at a charge of ten dollars and seventy-five cents (\$10.75) per meter plus cost of necessary repairs.
3. No person shall remove or interfere with any fire hydrant operating nut. A thirty-two dollars and twenty-five cents (\$32.25) charge shall be billed or subtracted from deposit, if the operating nut is removed from the fire hydrant, in addition to any other sanction which might be available to the City.

4. **Temporary Service – Backflow Prevention Assemblies**

All water withdrawn from fire hydrants, for purposes other than fire fighting, shall be in strict compliance with Rule No. 13, "Cross-Connections and Pollution of Supply". Withdrawal of water shall be through an approved backflow prevention assembly which is acceptable to the Director except where it has been determined by the Director that the pollution hazard does not exist.

a. **Fees and Charges**

Backflow prevention assemblies may be rented from the Water Utility and obtained at the Water Utility tool room for the following fees and charges:

- (1) Processing Fee: \$40.00 for each assembly.
- (2) Deposit: \$1,000.00 for each assembly
- (3) Rent Charge:

Two-inch backflow preventer: \$5:00 per calendar day

A stand mounted reduced pressure principle assembly will be supplied with a short length of fire hydrant hose to connect between the fire hydrant and the assembly.

- b. Customers may pick up backflow prevention assemblies at the water tool room and set or move assemblies from location to location. However, if Water Utility personnel are requested to set, move or relocate a backflow prevention assembly, or if Customer does not follow Water Utility standards or procedures, a charge of actual cost of labor, equipment, materials and overhead will be billed to Customer for each set or move made.
- c. Upon inspection and approval by Backflow Program Administrator, customer-owned backflow assemblies may be utilized.

5. **Fire Hydrants**

Fire hydrants are provided for the primary use of the Fire Department in extinguishing fires.

- a. If the Water Utility grants permission to other persons or organizations to withdraw water from fire hydrants, the Applicant acknowledges his demand is secondary to the needs of the Fire Department.
- b. No permanent attachment or rigid connections are permitted on any fire hydrant. The Water Utility may require a double outlet fitting with independent valves between the fire hydrant and Applicant's connection.
- c. no water, except for fire fighting, shall be taken from any fire hydrant so designated by the Water Utility.

- d. The cost of repairing damage to a fire hydrant and related equipment, or to the water system due to water hammer, or to careless or improper use of a fire hydrant or equipment, shall be paid by the Person or organization whose name appears on permit or meter application, at the election of the Water Utility.

C. INTERIM WATER SERVICE

1. Interim water service for parcels that will be under interim or temporary commercial agricultural use.
2. Water service shall be for commercial agricultural purposes only, including annual and/or seasonal crops.
3. Interim water service will be provided to a property or premise for a maximum two-year period.
4. Applicant/Owner shall pay applicable Water Service Connection and Meter Charge, and water service removal charges (cut and plug).
5. Applicant/Owner shall execute a recordable agreement approved by the City Attorney regarding the Interim Water Service (Interim Service Agreement) and pay a one thousand dollar (\$1,000.00) processing fee prior to any service being provided.
6. Consumption charges will be levied in accordance with the appropriate published tariff.
7. Water Utility will defer Backup Facility Capacity Charge, Elevation Fee, and Distribution System Fee for the duration of the term of the Interim Water Service agreement. Upon termination of the Interim Water Service agreement, all such fees shall immediately become due and payable.
8. City shall have all Interim Water Service agreements recorded through the County of Riverside Recorder's office.
9. Interim Water Service provisions shall not apply to wholesale nursery operations.

WATER RULE 10

WATER SYSTEM AND FEE REQUIREMENTS

A. GENERAL

1. Applicability of Rule

- a. Water system installations shall be made in accordance with the provisions of this Rule.
- b. See Rule No. 8, "Temporary Water Service," for provisions applicable to installations for temporary services.
- c. Water service fees and charges will be determined in accordance with the provisions of this Rule and Rule No. 11.

2. Design and Construction of Water Facilities

- a. All design and construction shall be in accordance with the Water Utility's standard plans and specifications.
- b. Water facilities within private developments shall only be accepted for maintenance by the Water Utility if authorized by the Director. Developers may request that water facilities within their private developments be accepted for maintenance by the Water Utility, subject to the following:
 - (1) Easements (30 feet minimum width) shall be provided to the City for water mains and access across the entire width of private streets and with adequate additional easements provided for water system appurtenances (water meters, fire hydrants, etc.);
 - (2) Standard concrete six-inch (6") curbs and gutters shall be constructed within development; and,
 - (3) Compliance with any special requirements of the Water Utility.
- c. Specific methods to meet adequate fire flow requirements specified by the Fire Department or other agencies exercising jurisdiction over the facilities will be determined by the Director.

3. Ownership of Water Facilities

Water distribution system installations, however provided, shall become property of and under control of the Water Utility.

B. WATER SERVICE FEES AND CHARGES

1. General

- a. Water service fees and charges shall generally include:

Backup Facility Capacity Charge
Elevation Fee
Distribution System Fee
Water Service and Meter Connection Charges
Special Conditions

- b. The legal description, plot plan and/or field check for a parcel to be provided water service shall be used to establish the Backup Facility Capacity Charge, Elevation Fee, Distribution System Fee and possible special conditions.
- c. When a property with an existing water service is divided, water service fees and charges for the parcel which the existing Water Service Connection will continue to serve, shall be considered paid, except that, at the Director's discretion water fees and charges may be levied if a water main replacement is required. All other parcels shall pay the applicable charges.
- d. When a property use changes, and a new building permit and/or a new Water Service Connection is applied for, previously paid Backup Facility Capacity Charges, based on water meter size, shall be considered as a credit toward any higher Backup Facility Capacity Charge. Under no circumstances will there be a refund of previously paid Backup Facility Capacity Charges.
- e. When a property use changes, and a new building permit and/or new water Service Connection is applied for, and a previously undersized water main has been replaced fronting the developer's/ owner's property, the developer/owner shall pay the Distribution System Fee, less any frontage distance previously paid. Fees collected will be reimbursed to developers/owners who replaced water mains as provided under terms of any applicable Water Utility reimbursement agreement previously executed by the City.

- f. If water use of a parcel is extended beyond the paid area of that parcel being serviced by an existing water meter, all water fees and charges covering the extended area shall be charges and collected by the Water Utility.
- g. If the boundaries of a parcel, which has a Water Service Connection, are adjusted so as to encompass an area which does not have a Water Service Connection, all water fees and charges applicable to the addition shall be collected by the Water Utility. Payment must be made prior to finalization of the lot line adjustment.
- h. All applicable water fees and charges shall be paid prior to the issuance of building permits, approval of final subdivision maps or parcel maps, or approval of any Water Service Connection requests.
- i. In Residential Zones, all applicable parcel map recordation water fees and charges will not be collected when a parcel is to remain undeveloped and is capable of further subdivision into two (2) or more parcels. The Backup Facility Capacity Charges, Elevation Fees, Distribution System Fees, and Service Connection Charges for these undeveloped parcels shall be charged when water service is requested in accordance with Rule No. 10 B.1.h.
- j. If a Covenant and Agreement is requested from the Water Utility by the developer/owner to satisfy a water service requirement, and said request is approved by the Director, a processing fee of one thousand dollars (\$1,000.00) will be paid by the developer/owner to cover administrative costs in conjunction with the preparation and approval of the Covenant and Agreement.
- k. A Covenant and Agreement shall be required to be executed by the developer/owner of residential development within the "Arlington Greenbelt Area" when partial fees and charges are paid to the Utility. The developer/owner paying partial fees and charges shall be given credit against subsequent fees and charges applicable when and if parcel is legally subdivided, or further developed in the future.

2. Backup Facility Capacity Charges

- a. Backup Facility Capacity Charges shall apply to all Water Service Connections provided by the Water Utility, except as specified in Special Provisions section of this Rule.
- b. Backup Facility Capacity Charge shall be paid prior to the issuance of a building permit, approval of a final subdivision map or parcel map or in conjunction with a Water Service Connection request.

- c. When a larger Water Service Connection is requested by Applicant, the Backup Facility Capacity Charge for the existing Water Service Connection will be credited toward the new Backup Facility Capacity Charge in effect at the time the larger connection is requested. No refund shall be made if a reduction in size is requested.

3. Elevation Fee

Elevation fee shall apply to all Water Service Connections supplied from Water Utility pressure zones above the Gravity Pressure Zone, except as specified in Special Provisions section of this Rule.

4. Distribution System Fee

- a. Distribution System Fee shall apply to all water service areas of the Water Utility, except as specified in Special Provisions section of this Rule. If the Applicant has constructed or is making arrangements to construct water mains at his expense adjoining the subject property, then no Distribution System Fee shall be collected for the frontage adjoining said water mains.
- b. Distribution System Fee shall be computed by multiplying the applicable charge per foot by the actual distance which the parcel abuts all adjacent public streets or City public easements.
- c. The Distribution System Fee for the following corner parcels shall be applied using one-half the entire parcel frontage for the following:

- (1) Existing individual corner lots zoned R-1 for single family dwelling which cannot be subdivided.

However, corner lots created by new subdivision are excluded from the one-half frontage provision and the Distribution System Fee shall be applied using the entire frontage.

- (2) Corner lots in areas zoned for single family dwellings with the requirement of minimum five (5) acre parcels;

However, if a corner parcel is proposed to be subdivided, the Distribution System Fee shall be applied using one-half the entire frontage for only the corner lot resulting from the subdivision process. The Distribution System Fee for the other parcel or parcels of the subdivision shall be based on full frontage.

- d. When a development or use requires a water supply greater than that which can be supplied by an eight-inch (8") water main for Residential Zones or twelve-inch (12") water main for Commercial/Industrial Zones, the cost of the oversized pipe required shall be paid for by the developer/owner as determined by the Director.
- e. The Distribution System Fee will be considered satisfied for an existing developed or partially developed parcel, which has existing domestic water service from the Water Utility, when such parcel is proposed to be further developed and the developer/owner requests a larger or an additional Water Service Connection. This is subject to the parcel remaining as one undivided parcel. An exception to the Distribution System Fee being considered satisfied is when the property use changes, in which event Section B.1.e. of this Rule shall apply.

C. SCHEDULE OF WATER SERVICE FEES AND CHARGES

1. Water Service Fees and Charges

a. Backup Facility Capacity Charge

For Each Water Metered Service Connection

3/4-inch meter	\$ 2,250
1-inch	\$ 5,060
1-1/2-inch	\$ 9,560
2-inch	\$ 14,400
3-inch	\$ 25,300
4-inch	\$ 39,380
6-inch	\$ 73,130
8-inch	\$ 108,000
10-inch	\$ 135,000

In the event a larger water meter is needed for any type of service for fire protection purposes resulting in a size larger than needed for normal uses, the charge will be based on the size needed for normal uses. In the event an existing water meter service connection is planned to be utilized for an expanded development, additional charges shall be required based on the difference between existing size of service and service size needed for expanded normal water uses. Applicant shall submit calculations from a validly licensed architect or engineer.

The Backup Facility Capacity Charge shall be paid prior to the issuance of a building permit, approval of a final subdivision map or parcel map or in conjunction with a Water Service Connection request. Backup Facility Capacity Charge shall not apply to Fire Service Connections.

b. Elevation Fee

The Elevation Fee is based on booster pumping to higher elevation pressure zones. If the cost of water facilities required to serve a development substantially exceeds the average cost of water facilities recoverable by application of the Elevation Fee, the Director shall determine appropriate charges with the developer/owner for approval by the Board.

For pressure zones not identified in this Rule, the Director shall establish the Elevation Fee.

Elevation Fee Schedule

<u>Pressure Zone</u>	<u>Elevation Fee (Per Acre or Portion Thereof)</u>	<u>Nominal Zone Designation</u>
001, 002, 071, 072	\$ -	Gravity
073	\$ -	925
501, 561	\$ 340	1037
164	\$ 420	1080
101, 102, 103, 151	\$ 600	1100
162, 163, 201	\$ 780	1160
211, 212, 213, 221, 251	\$ 1,000	1200
311, 331	\$ 1,380	1300
412, 413, 421, 422, 423, 441, 442, 451, 452, 461	\$ 1,720	1400
611, 613, 621, 631, 641	\$ 2,480	1600
632, 642	\$ 2,730	1680
721, 741	\$ 3,090	1750

c. Distribution System Fee

Distribution System Fee shall be \$49.00 per foot of parcel or lot frontage and in accordance with Section B.4. of this Rule.

d. Water Service and Meter Connection Charges
(See Rule No. 11)

2. Installation of On-Site and/or Off-Site Water Facilities By Developer/Owner – (See Section D of this Rule)

- a. Applicant shall make a deposit for engineering plan checking and review services upon first plan submittal with the Water Utility to cover the actual cost of staff time and materials to review submitted plans. Upon determination that the deposit amount is inadequate to cover the actual costs for plan checking services, Applicant shall make additional deposits as necessary with the Water Utility. Further plan checking services shall be suspended until additional deposit is made. Upon acceptance of the constructed water facilities by the Water Utility, the Water Utility will refund any remaining deposit balance.
- b. The inspection fees shall be as follows and shall be paid prior to scheduling a preconstruction meeting.
 - (1) \$247.25 plus \$1.08 per lineal foot of pipeline.
 - (2) \$86.00 for each fire hydrant.
 - (3) \$18.28 for each 1-inch service.
 - (4) \$53.75 for each 2-inch service.
 - (5) \$494.50 for each 4-inch or larger service.
 - (6) \$215.00 for each initial pressure test.
 - (7) \$155.88 for each subsequent pressure test (re-test).
 - (8) Normal construction allows for inspection as needed during a period of thirty (30) calendar days for each 2,000 lineal feet of pipeline or fraction thereof, as measured in time from the start of construction to the start of pressure testing. Construction which is not completed within the time for “normal construction” shall be considered “extended construction” and an additional fee of \$1.08 per lineal foot of pipeline shall be paid for the additional period of time computed at the rate of thirty (30) calendar days for each 2,000 lineal feet of pipeline or fraction thereof.
 - (9) Normal construction allows for two (2) inspection visits after completion of Water Utility tie-ins. Additional inspection visits required or requested will be charged to the developer/owner at the rate of seventy-two dollars and three cents (\$72.03) per hour during normal working hours.

- (10) \$215.00 for each wet tap witnessed by Water Utility inspectors.
- (11) Water Service Connection(s) For Individual Premises of four-inch (4") or larger, a \$500.00 Cash Refundable Bond (per connection) to guarantee final completion by private pipeline contractor of required four-inch (4") or larger Water Service Connection(s) and/or Fire Protection Service(s). Bond will be refunded to developer/owner upon final completion and acceptance of connection(s) by the Water Utility.

c. **Backup Facility Capacity Charge, Elevation Fee and Distribution System Fee.**

- (1) Backup Facility Capacity Charge shall be levied where applicable. (See Section C.1.a. of this Rule)
- (2) Elevation Fee shall be levied where applicable. (See Section C.1.b. of this Rule)
- (3) Distribution System Fee shall be charged on public streets and City public easements abutting the development. (See Section C.1.c. of this Rule).

d. **Water Main Connection Charge**

The developer/owner shall pay the water main connection charges as determined by the Director. Consideration shall be given to size, location and difficulty of each connection. Water main connection charges shall be valid for a period of six (6) months from the date they are determined. Thereafter, the Director will re-estimate the charges and the developer/owner shall pay the difference.

e. **Water Meter Charge**

- (1) The Applicant shall pay the water meter installation charges (meter only) as follows:

3/4-inch meter	\$ 81.70
1-inch	\$ 94.60
1 1/2-inch	\$ 218.23
2-inch	\$ 264.45
3-inch and larger	At Estimated Cost of Installation

D. INSTALLATION OF ON-SITE WATER FACILITIES

1. Applicability

- a. The developer/owner shall have the responsibility for the installation of on-site water facilities within the boundaries of subdivisions, shopping centers, industrial parks or lots as shown on the record map.
- b. Water fees and charges related to the installation of on-site water facilities shall be paid prior to commencement of work. Work shall commence within six (6) months of payment of all water fees and charges or the water fees and charges which are in effect when work is commenced shall apply. (See Section B. of this Rule).
- c. Water facilities, which become the property of the Water Utility, shall generally be located within the public right-of-way. Water facilities will only be permitted within easements at the discretion of the Director.

2. Installation of On-Site Water Facilities by Developer/Owner

a. Developer's/Owner's Responsibilities

The developer/owner shall have the responsibility for engineering, constructing, sanitizing and testing of the pipelines, appurtenances, service laterals and installation of water meter vaults, in accordance with the Water Utility's standard plans and specifications and are subject to Water Utility inspection and acceptance. The developer/owner shall pay to the Water Utility the established charges as set forth in Section C.2. of this Rule.

- (1) Complete engineering shall be by a civil engineer registered in the State of California and shall include submission of a full set of detailed improvement plans to the Water Utility along with a plan check fee.
- (2) After all changes, modifications and additions requested by the Water Utility have been made on the water plans, and they have been approved, developer/owner shall supply a complete set of original plans to the Water Utility. Said original plans shall become the property of the Water Utility.

- (3) The developer/owner shall have the required installation performed by a licensed contractor, and shall furnish a cash deposit or faithful performance bond in an amount equal to 125% of the Water Utility's estimated cost of installation. Cash deposit or bondable estimated installation costs shall be based upon the estimated construction cost of the water system and applicable fees and charges.
- (4) All laboratory analyses required in connection with chlorination and sanitizing the newly-installed systems shall be performed by a State of California laboratory licensed and certified to perform such tests. All charges in connection therewith shall be borne by the developer/owner with test results forwarded to the Water Utility.
- (5) All Water Utility fees and charges must be paid prior to commencing construction of water facilities.

b. City Provided Services

The City shall provide services including engineering plan review, inspection, setting of water meters and water system connections to the existing water mains.

- (1) The submitted water plans will be examined for conformance with the Water Utility's standard specifications and other requirements. Errors and omissions, if any, will be indicated on the plans and they will be returned to the engineer for correction.
- (2) Water Utility personnel or their agent will inspect water facilities installed by the developer's/owner's contractor to ensure compliance with the water plans and specifications.
- (3) Water Utility forces will schedule and set all water meters upon filing of the appropriate water service application form and payment of water fees by the Applicant.

c. Reimbursement for Pipe Oversizing

- (1) If at the Water Utility's request, the developer/owner is required to install a pipeline of a larger diameter than normally necessary for the development, the developer/owner shall be reimbursed for the extra cost in accordance with Section D.2 c.(5) of this Rule.

- (2) Payments for pipe oversizing will be made upon acceptance of the installed pipeline.
- (3) Under no circumstances will reimbursements be made for eight-inch (8") or smaller pipelines in single family Residential Zones or twelve-inch (12") or smaller in all other zones.
- (4) Sizing of water facilities will include consideration of Fire Department requirements.
- (5) Water Main Oversizing Reimbursement:
 - 8-inch Standard – 12 inch Oversized - \$17.20 per lineal foot
 - 12-inch Standard – 16-inch Oversized - \$25.80 per lineal foot

d. **Acceptance and Release**

- (1) The security given for faithful performance of the work, whether cash or bond, may be released, in part, upon final completion and acceptance of the water facilities by the Water Utility; except that an amount equal to ten percent (10%) of the surety bond, but not less than \$1,000 will be withheld to cover the costs of possible maintenance, repair and replacements. Final release shall be made one (1) year after acceptance of the water system.
- (2) If the developer/owner fails to complete all of the specified improvements in accordance with the approved water plans and specifications within the twelve (12) months after commencing said work, the Director may order such work performed by the Water Utility forces, and may utilize the cash deposit, if furnished, or call upon the surety company for funds to cover reimbursement.

E. INSTALLATION OF OFF-SITE WATER FACILITIES (WATER MAIN EXTENSIONS AND REPLACEMENTS)

1. General

- a. Developers/owners shall be responsible for the off-site water main extensions and replacements necessary to reach and front their properties/developments from existing Water Utility facilities having adequate capacity.

Replacement of water mains shall be required when existing water mains are undersized/inadequate to supply domestic and/or fire flows to/for proposed developments.

- b. The Director reserves the right to have off-site water facilities installed by Water Utility forces at the expense of developer/owner-based upon actual cost of water main installation.
- c. The Director is authorized to execute water main reimbursement agreements on behalf of the Water Utility for water main installations paid for or constructed by developers/owners. The purpose of these agreements is to provide partial or full reimbursement to developers/owners who pay for or install off-site water facilities.
- d. The water main reimbursement agreements shall contain brief descriptions of the properties to be served with water, the length and location of water mains, as well as the total estimated costs in accordance with Section C.1.c. of this Rule. These agreements shall remain in effect for a maximum of twenty (20) years, after which no further reimbursements will be made.

Water main reimbursement agreements shall be executed for a value over five hundred dollars (\$500.00). Reimbursements shall be computed in accordance with Section C.1.c. of this Rule. Reimbursement payments for water main extensions shall not exceed total estimated costs as provided in the Water Main Reimbursement Agreement.

2. Water Main Extensions (Installation by Water Utility Forces)

- a. If water main extensions are installed by Water Utility forces, developers/owners shall pay to the Water Utility the actual cost of water main extensions including appropriate construction, engineering and administration charges.
- b. Engineering and installation shall not commence until the Water Utility has actually received payment for the estimated cost of work. Work shall commence within six (6) months after receipt of total estimated cash payment. If commencement of work is delayed for more than six (6) months by circumstances outside of the control of the Water Utility, developers/owners may be required to pay additional estimated costs.
- c. Developers/owners will receive either a partial refund or an invoice to cover the actual costs of water main extensions after all final costs are known.

3. Water Main Extensions (Installation by Developers/Owners)

Developer's/owner's appropriately licensed contractors are subject to the Water Utility's approval prior to scheduling the construction of water main extensions. All fees and charges shall be paid prior to commencement of work. Requirements shall conform to those established in Section D.2. of this Rule.

4. Water Main Relocations

Developers/owners shall be responsible for relocating existing water main(s) which would not be located within paved roadways of streets or would have pipe cover of either less than three feet (3') or more than ten feet (10') as a result of a developer's/owner's improvements. Relocations shall be in accordance with Water Utility requirements and at developer's/owner's expense.

F. Special Provisions

1. General

- a. Special Provisions have been enacted for development within the following areas and shall take precedence over General Provisions of this Rule
 - Arlington Heights Greenbelt Area for Prop. "R" & "C"
 - Sungold Agreement Areas
 - 1911 Act Areas
 - Temporary/Remote Water Service
 - Infill Parcels
- b. With Water Utility approval, Special Provisions may apply to allow temporary/remote (off-site location) Water Service Connections not fronting the property being served.
- c. Special Provisions shall only apply to the above listed areas as outlined herein. General Provisions of this Rule shall apply to all other areas.
- d. All other provisions of the Water Rules shall apply to the above-listed areas except as modified in these Special Provisions.

2. Arlington Heights Greenbelt

- a. The Arlington Heights Greenbelt is the area within the City Limits generally located southeasterly of Victoria Avenue, westerly of Washington Street and northeasterly of La Sierra Avenue. The exact boundaries are shown on map located in the City of Riverside Planning Department.
- b. The Distribution System Fee for development within the "Arlington Heights Greenbelt Area" shall be computed using the actual distance of street frontage of the area to be developed, including landscape area, or a minimum of 150 feet, whichever is greater.
- c. Elevation Fee for residential development within the "Arlington Heights Greenbelt Area" shall be computed using actual area to be developed including landscape areas, or a minimum of one (1) acre, whichever is greater.
- d. Water service will be subject to all other water installation and fee requirements applicable under the General Provisions of this Rule.

3. Sungold Agreement

The Sungold Agreement covers certain properties located in the easterly portion of the City of Riverside Water Service Area as shown on map located in the Water Engineering Division of the City of Riverside Public Utilities Department.

Special Provisions are as follows:

- a. No Distribution System Fee for properties fronting public street water mains, 12-inch diameter or smaller, and having adequate capacity to provide required water flows thereto.
- b. Elevation Fee is \$40.00 per acre for elevations 1100-feet and higher. No Elevation Fee for elevations less than 1100-feet.
- c. Required water main replacements, extensions and costs along with the other applicable Water Fees, not listed above, will be subject to the general installation and fee provisions of this Rule.

4. 1911 Acts

a. Whitegate Improvement District

1. The Whitegate 1911 Act Improvement District covers the Overlook Parkway area served by Whitegate No. 1 and No. 2 Reservoirs, as shown on map located in the Water Engineering Division of the City of Riverside Public Utilities Department.
2. The Elevation Fee is not applicable in this area. Water service will be subject to all other water installation and fee requirements applicable under the General Provisions of this Rule.

b. Mt. Vernon Water Improvement District

1. The Mt. Vernon 1911 Act Water Improvement District covers the Mt. Vernon Avenue area located northerly of Mt. Vernon Booster, as shown on map located in the Water Engineering Division of the City of Riverside Public Utilities Department.
2. The Distribution System Fee is not applicable for existing parcels only. Water Service will be subject to all other water installation and fee requirements under the General Provisions of this Rule. Special Provisions do not apply to subdivided parcels and all requirements will be applicable under the General Provisions of this Rule.

5. Temporary/Remote Water Service – Temporary Off-Site Location

Upon approval of the Water Utility, water may be provided through a temporary/remote service connection from the nearest existing main of adequate size, subject to fulfillment of the following conditions:

- a. Applicant shall pay all applicable fees and charges including Backup Facility Capacity Charge, Elevation Fee, Distribution System Fee, Water Service Connection and Meter Charge.
- b. Applicant shall secure any public and/or easements deemed necessary by Department to facilitate temporary/remote water service.
- c. Applicant shall execute a recordable agreement, approved by the City Attorney, regarding the temporary/remote water service.
- d. City shall have all temporary remote service agreement recorded through the County of Riverside Recorder's Office.

6. Infill

Those single family residential parcels identified and defined in the Residential Infill Strategy, when and as adopted by the City Council.

Special Provisions are as follows:

- a. Distribution System Fee shall be considered paid.
- b. Elevation Fee shall be considered paid.

WATER RULE 11

WATER SERVICE CONNECTIONS, WATER METERS AND RELATED APARATUS

A. GENERAL

1. Water Service Connections shall front the individual lots or parcels they serve and shall be constructed within the public right-of-way, or within Water Utility approved easements as determined by the Director.
 - a. More than one Water Service Connection per parcel/lot shall require the advance approval of the Water Utility and may require the installation of an Approved Backflow Prevention Assembly.
 - b. When the water meter and water meter vault cannot reasonably be located in the public right-of-way, they shall be located on the Customer's Premises adjacent to the crossing of the service laterals with the property line, or such other location as may be agreed upon by the Customer and the Director.
 - c. No rent or other charge shall be levied against the Water Utility for Water Service Connections which must be located on the Customer's property.
 - d. New Water Service Connections and fire hydrant connections will **not** be allowed from transmission mains larger than twelve-inches (12") in diameter.
2. The Water Utility shall own and maintain all Water Service Connections up to and through the rear water meter union whether located on private property or in the public right-of-way.
3. The Customer shall, at his own expense and risk, furnish, install and maintain all apparatus and appliances which are required to receive, control, regulate, and utilize the pressure and flow of water as furnished by the Water Utility. The Water Utility shall not be liable for any loss or damage caused by the improper installation, maintenance or malfunction of such apparatus. The Water Utility shall not be responsible for damage or inconvenience occasioned by the misuse of water after it has left the water meter, nor for any damage caused by the turning on and off of water service by Water Utility forces.
4. The Water Utility shall not be liable for any damage to the Customer's plumbing caused by tree roots or any other natural causes.

5. As defined in the current applicable Uniform Plumbing Code, as adopted by the City, Section 608.2, when static water pressure inside a building is in excess of eighty (80) pounds per square inch, an approved type pressure regulator and pressure relief valve shall be installed and properly maintained by Applicant so that the water pressure is reduced to eighty (80) pounds per square inch or less.
6. The Customer shall compensate the Water Utility for any and all damage to Water Service Connections under the Water Utility's ownership, which is caused by carelessness or neglect of the Customer.
7. It shall be the Customer's or property owner's responsibility to maintain free and clear access for the Water Utility's representatives to all water meters, water meter vaults, backflow prevention assemblies, fire hydrants and other water facilities supplying his Premises. Refer to Standard CWD 631 and CWD 632.
8. Inasmuch as ownership of all Water Service Connections as described in Section A.2, above, is vested in the Water Utility, only authorized representatives and employees of the Water Utility are permitted to connect or disconnect the service lateral to the water main, or turn the service on or off at the water meter. Tampering with the service lateral or water meter in any way by unauthorized persons is a violation of these Rules and may result in a penalty and/or the discontinuance of water service.
9. Whenever the owner or his representative has ordered a Water Service Connection removed, abandoned, or disconnected at the water main, said owner shall sign a release waiving all rights and interest in the Water Service Connection. Re-establishment of service to the Premises shall be evaluated, and charged as a new Water Service Connection with Backup Facility Capacity Charge, Distribution System Fee, and Evaluation Fee considered paid.

B. WATER SERVICE CONNECTIONS FOR INDIVIDUAL PREMISES

1. Upon payment of the applicable fees and charges and completion of the appropriate application forms, the Water Utility shall furnish, install and maintain the service lateral, water meter and water meter vault.
 - a. Applicant shall pay the Water Service Connection charges as specified in Section G.1.b. of this Rule, and shall also pay Backup Facility Capacity Charge, Distribution System Fee and Evaluation Fee as set forth in Rule No. 10, Section C.1.
2. Applicants for individual Off-Site Water Service Connections four-inch (4") or larger have the option of having the Water Utility forces or a City of

Riverside approved, responsible, licensed contractor install the required connection(s).

- a. If Water Utility forces install said connections, the Applicant shall pay to the Water Utility the established charges as set forth in Rule No. 10, and Section G.1.b. of this Rule.
- b. If a private contractor is selected, said installation shall be in accordance with the Water Utility's standard plans and specifications and subject to Water Utility inspection and acceptance. The Applicant shall deposit with the Water Utility the established charges as set forth in Rule No. 10.C.2. (Backup Facility Capacity Charge, Distribution System Fee, Elevation Fee, inspections fees and water meter charges).
- c. If a private contractor is selected, Applicant will be required to submit to the Water Utility the following:
 - (1) Street opening permit;
 - (2) Liability Insurance; and,
 - (3) An executed Hold Harmless agreement approved by the City's Legal Department.

3. **Bacteriological Testing for Water Meters Two-Inch (2") or Larger and Fire Protection Services**

Customer piping served by a water meter two-inch (2") or larger and Fire Protection Services will not be tested until a twenty-four (24) hour period between the final flushing and the taking of bacteriological samples is completed. Following this period, the Contractor shall have qualified laboratory approved by the Water Utility perform bacteriological tests. Samples shall be taken in the field and transported to the laboratory by a laboratory technician or by a representative of an approved testing firm. A minimum of one (1) successful bacteriological test per 500 feet of water main will be required. All samples must be absent for total coliform and E. coli/fecal bacteria and have a heterotrophic plate count of less than 200.

All laboratory testing shall be at the Contractor's expense. One copy of the test results shall be mailed directly to the Water Utility from the laboratory.

A flushing testing charge will be collected in advance for each installation requiring bacteriological testing. The fee will be two hundred fifteen dollars (\$215.00), each and every time flushing testing is required. The flushing

testing charge will allow maximum flushing time of ninety (90) minutes.

Upon successful completion of bacteriological testing, the sanitary condition of Customer's piping will be accepted and the water meter and/or Fire Protection Service will be released for Customer Service and use.

C. WATER SERVICE CONNECTIONS IN SUBDIVISIONS (TRACT MAPS), PARCEL MAPS, RECORDS OF SURVEY, SHOPPING CENTERS, MOBILE HOME PARKS AND INDUSTRIAL DEVELOPMENTS

1. Water Service Connections within the development shall be installed in conjunction with the other On-Site water facilities under the provisions of Rule No. 10. Water meter charges as specified in Rule No. 10, shall apply.
2. Work shall commence within six (6) months of payment of all water fees and charges or the fees and charges which are in effect when work is commenced shall apply. All fees and charges which are applicable shall be paid prior to commencement of installation.

D. RELOCATION AND REPLACEMENT OF WATER SERVICES LATERALS

1. Water relocation or moving of water service laterals shall be performed by Water Utility forces at the Customer's expense. The charges shall be estimated by the Water Utility. Maximum lateral relocation shall be five feet (5').
 - a. The charges to relocate Water Service Connections over one-inch (1") shall be at actual cost of relocation.
 - b. If at the Customer's request the water service lateral must be extended or shortened, it will be done at Customer's expense.
2. Water service laterals which are or become defective without fault on the part of the Customer shall be replaced at the Water Utility expense. When a defective water service lateral is scheduled for replacement, the Customer may obtain a larger size meter by paying the difference between the water meter charges as set forth below in addition to any applicable Backup Facility Capacity Charges:

Existing Meter

Larger Meter

3/4-inch Meter

1-inch Meter = \$16.13

Other combinations not covered shall be charged at the difference in the Water Utility's costs for labor and materials.

3. When a Customer requests a water meter size increase with no change to the water service lateral, the difference in water meter costs plus thirty-four dollars and forty cents (\$34.40) will be charged in addition to any other applicable fees.
4. Charges for relocating fire hydrants and Fire Protection Services shall be levied when such relocation is for convenience of the Customer or is necessitated by improvements initiated by him. These charges shall include costs for labor, materials, and overhead expenses. The charge for replacing a Fire Protection Service shall be the charge for a new service, but with Elevation Fee and Distribution System Fee considered paid.

E. REPAIR OF WATER FACILITIES

The cost of repairing water facilities damaged by persons other than Water Utility personnel shall be at actual labor, material, equipment and field overhead costs plus fifty-three dollars and seventy-five cents (\$53.75) for the cost of general Water Utility overhead and processing for each incident. This charge may be waived at the Water Utility's discretion.

F. FIRE PROTECTION SERVICE - USAGE

1. Private fire protection system services shall be used only for the discharge of water to extinguish fires, and shall be equipped with a backflow device detector assembly and bypass meter. It shall be unlawful to install any taps, hose bibs or other outlets for the use of water for any other purpose. The taking of water from a private fire system for any unauthorized use shall constitute cause for the discontinuance of the water supply at that service, or the installation at the Customer's expense of a fully-metered Water Service Connection with enforcement of the applicable water rates to such water meter.

2. Backflow Prevention

The Fire Protection Service to a Premise shall be subject to the same backflow prevention regulations and requirements as the Domestic Water Service to that property.

G. SCHEDULE OF WATER SERVICE CONNECTION CHARGES

1. Domestic Water Service Connection Charges

- a. Domestic Water Service Connection Charges shall be levied unless installed by property owner.
- b. The charges to be collected by the Water Utility for new Domestic Water Service Connections installed by Water Utility forces, are as set forth below including the water meter and water meter vaults, and are in addition to the charges and conditions noted in Rule No. 10. Backflow prevention assemblies, where required, are the responsibility of the Customer, and are not installed by the Water Utility.

Water Service Connection Charges

Connection Charge

Size of Water Meter (Service Lateral, Water Meter, Vault)

3/4-inch meter	\$1,402.88
1-inch	\$1,419.00
1-1/2-inch	\$2,423.05
2-inch	\$2,466.05
3-inch and larger	At Estimated Cost of Installation

- c. When ten (10) or more Water Service Connections are installed in a subdivision or shopping center, the Applicant may elect to have jumpers installed (in place of the water meter) for no more than one hundred twenty (120) days from the date of installation. This type of service is to provide construction water only. The monthly charge for this type of service is shown in Water Rate Schedule WA-2 – Flat Rate – Temporary Service.

2. Fire Protection Service Connection Charges

- a. Fire Protection Service connection charges shall be levied where applicable.
- b. The charges to be collected by the Water Utility for Fire Protection Service shall be as set forth below and said charge is in addition to the charges and conditions noted in Rule No. 10.

(1) **Fire Protection Service Connection Requiring Backflow Protection**

The Water Utility determines the Degree Of Hazard associated with the Fire Protection Service connection. When Backflow Protection is necessary, the following installation will be applicable:

Fire Protection Service Connection Above-Ground: The Water Utility installation shall generally include tapping the water main, laying a service lateral, and installing an above ground riser and flange.

All piping, valves, regulators and attachments on the Applicant's side of the riser flange shall be the Applicant's responsibility to install and maintain.

An approved double check detector assembly (DCDA) or an approved reduced pressure principle detector assembly (RPDA) shall be furnished and installed by Applicant. The location of this assembly must be approved by the Water Utility's Backflow Program Administrator. The assembly is the property of the Customer and it is the Customer's responsibility to test and maintain the unit. The detector meter on the bypass piping of the detector assembly becomes the property and maintenance responsibility of the Water Utility. This water meter shall be protected by a steel enclosure with a hinged meter reading lid. The steel enclosure shall be approved in advance by the Water Utility prior to fabrication. Also this water meter shall be primed and painted as approved by the Water Utility.

Size of Service

2-inch and larger

Connection Charge

At Estimated Cost of Installation

- (2) If the required Distribution System Fee and Elevation Fee have not been paid with a Domestic Water Service connection, then these fees as outlined in Rule No. 10.C.1.b. & c. shall be assessed and paid with the Fire Protection Service connection payment.

H. TEMPORARY WATER SERVICE CONNECTIONS FOR AGRICULTURAL USES

1. Temporary Water Service Connections as determined by the Director may be provided for parcels of land that are to be under agricultural uses.
2. The Distribution System Fee may be deferred with the Director's approval until such time as parcels are developed with permanent structures or facilities.
3. Backup Facility Capacity Charge and Elevation Fee may be deferred, with Director's approval, for a maximum period of two (2) years. After the two (2) year period, the Backup Facility Capacity Charge and the Elevation Fee shall be immediately paid by the Applicant, or paid in four (4) equal annual payments.
4. In the event the above Fees and Charges are deferred, the Applicant shall execute a standard recordable agreement approved by the City Attorney.

WATER RULE 13
CROSS-CONNECTIONS
AND
POLLUTION OF SUPPLY

A. AUTHORITIES AND RESPONSIBILITIES

1. It is the responsibility of the Water Utility to protect the public water supply system from contamination due to potential or actual unprotected Cross-Connections. The achievement of a Cross-Connection control program accomplishes this goal as required by State regulations. This Rule adopts by reference Title 17, incorporating Sections 7583 through 7605 of the California Code of Regulations entitled "Regulations Relating to Cross-Connections" herein. Dual water systems (auxiliary water) shall be considered as a recycled water system.
2. Under the direction of the Public Utilities Director, the Program Specialist is recognized as responsible for applying and enforcing the Water Utility Cross-Connection Control Program.
3. Unprotected Cross-Connections with the Water Utility's Potable Water supply are prohibited. The Water Utility Program Specialist shall conduct necessary surveys of the Customer's water uses to elevate the potential Degree Of Hazards to the Potable Water supply. It shall be the Customer's responsibility to comply with the Water Utility's Backflow Protection requirements as a condition of receiving or continuing to receive water service. Whenever the Program Specialist decides Backflow Protection is necessary, an appropriate Approved Backflow Prevention Assembly shall be provided, installed and maintained at the expense of the Customer. The type of Service Protection shall be suitable to prevent backflow for the actual or potential Degree Of Hazard that exists on the Customer's Premises. All Potable Water service connections entering the Premises, buildings, or structures shall be protected. A water service used exclusively for fire protection shall be evaluated separately.
4. The Water Utility will maintain a list of Approved Backflow Prevention Assemblies. The type of Backflow Protection (listed in increasing level of protection) that may be installed includes: a double check valve assembly (DC), a reduced pressure principle assembly (RP), and as air-gap separation (AG). The Customer may select a higher level of protection than required by the Water Utility.

B. SURVEYS AND NOTIFICATION

1. New Service Connection: The Water Utility shall review all requests for permanent and temporary services to decide if Backflow Protection is needed. Plans must be submitted to the Utility upon request for review of potential unprotected Cross-Connection hazards as a condition of service from a new Service Connection. If it is decided that a backflow prevention assembly is necessary to protect the Water Utility's Potable Water system, the required assembly must be installed and tested before service will be established.
2. Existing Service Connection: The Water Utility may require an on-premise inspection or re-inspection survey to evaluate the Cross-Connection hazards of any Premises to which it serves water. The Water Utility will request an inspection appointment with each affected Customer. Any Customer who cannot or will not allow an on-premise inspection of the water piping system shall be required to install the Approved Backflow Prevention Assembly the Water Utility considers necessary.
 - a. The Water Utility will notify the Customer of the survey inspection findings, listing any required corrective actions. A period of thirty (30) days will be given to complete all corrective actions requested, including installation of an Approved Backflow Prevention Assembly. A thirty (30) day extension may be granted in situations having extenuating circumstances.
 - b. A second notice will be sent to each Customer who does not take the required corrective action prescribed in the first notice. The second notice will give the Customer an additional two (2) week period to complete the required action. If no action is taken within the two (2) week period, the Water Utility may suspend water service to the effected Customer until the required corrective actions are completed.

C. TEST AND INSPECTION

1. A Customer may obtain a list of currently Approved Backflow Prevention Assemblies from the Water Utility. The Approved Backflow Prevention Assembly shall be installed in a manner as prescribed in Section 7603, Title 17. The location of the assembly shall be above grade as close as practical to the Water Service Connection. The Water Utility's Backflow Program Administrator must approve the location of a backflow prevention assembly installed for Service Protection.

2. An annual testing notice and a list of certified backflow prevention assembly testers will be sent to notify the water Customer when an assembly needs to be tested. It shall contain a date when the testing must be completed and results submitted to the Water Utility.
3. No assembly shall be placed into service unless it is functioning as required. Testing of backflow assemblies shall only be conducted by competent backflow prevention assembly testers certified by the Director of Public Health, County of Riverside, as specified in Riverside County Ordinance 525 and approved by the Director. Testing and maintenance costs are the responsibility of the water Customer. The Approved Backflow Prevention Assembly must be tested immediately after installation, relocation or repair and at least annually after that. More frequent testing than once a year may be required if considered necessary by the Water Utility. The Water Utility will provide an initial no-cost testing where Backflow Protection is installed at a site for service protection.
4. The water Customer will receive a written notice of any requirement to test the backflow prevention assembly from the Water Utility.
 - a. The Water Utility will notify each affected water Customer approximately two (2) weeks before the scheduled testing month for the backflow prevention assembly installed on their Service Connection. The written notice will include a list of available commercial testers and Test Report Form to be completed by the certified tester. This notice will give the water Customer one (1) month to have the assembly tested and submit the Report Form to the Water Utility showing the satisfactory testing results of the assembly have been completed. The Testing and Maintenance Report of backflow prevention assembly will be submitted to the Water Utility within fifteen (15) days from the completion of the work. Whenever a test shows a malfunction, the assembly shall be repaired within fifteen (15) days of observed failure and shall be retested.
 - b. A second notice, including a list of certified assembly testers, shall be sent to each Customer not having their backflow prevention assembly tested within the time limit prescribed in the first notice. The second notice will give the Customer an additional two (2) week period to complete the testing. If testing has not been completed, within the two (2) week period, the Water Utility will arrange for the testing and any needed repair to the assembly and bill the Customer of record in the amount of five hundred thirty-seven dollars fifty cents (\$537.50) plus parts to repair assembly. This charge will be billed to Customer on City's utility billing.

5. Approval must be obtained from the Water Utility before a backflow prevention assembly is removed, relocated or replaced.
 - a. **Removal:** The use of an assembly may be discontinued and the assembly removed from service upon presentation of sufficient evidence to the Water Utility to verify that a hazard no longer exists and is not likely to be created in the future.
 - b. **Repair:** An assembly may be removed for repair provided another Approved Backflow Prevention Assembly is temporarily installed or the water use is discontinued until the repairing of the unit is completed. A retesting of the unit will be required following the assembly relocation.
 - c. **Relocation:** Relocation of an Approved Backflow Prevention Assembly is acceptable with prior approval of the Water Utility. The new location will satisfy all installation requirements. A retesting of the unit will be required following the assembly relocation.
 - d. **Replacement:** An assembly may be removed and replaced provided the Customer use is discontinued until the replacement assembly is installed. All replacement assemblies must be approved by the Water Utility and be appropriate for the Degree Of Hazard involved.

D. WATER SERVICE TERMINATION

1. To insure the health and safety of all customers of the domestic system, the procedure for terminating water service shall be initiated when the Water Utility encounters Customers that represent a clear and immediate hazard to the Potable Water supply that cannot be immediately eliminated. Conditions or water uses that create a basis for water service termination shall include, but not limited to, the following items:
 - a. Refusal or unnecessary delay in installing, testing, repairing or replacing a required Approved Backflow Prevention Assembly.

Termination Procedure: The Water Utility will terminate service after two (2) written notices have been sent specifying needed corrective action and the period for compliance. If no action is taken within the allowed time, the water service may be terminated.
 - b. Direct or Indirect Connection between the Potable Water system and a sewer line.

Termination Procedure: Reasonable effort will be made to advise the Customer of the intent to terminate the water service. The water service will be turned off and the service valve locked. The service will remain inactive until correction of the violations has been approved by the Water Utility.

- c. Unprotected Direct or Indirect Connection between the Potable Water system and a system or equipment containing contaminants or an Auxiliary Water System.

Termination Procedure: The same as Rule No. 13 D.1.b. above.

- d. A situation that presents an immediate health hazard to the public water system.

Termination Procedure: The same as Rule No. 13 D.1.b. above.

WATER RULE 14

TURN-ON AND TURN-OFF OF WATER SERVICE FOR REPAIR BY CUSTOMER

Customer requests to the Water Utility for turn-off or turn-on of water service for the purpose of making repairs, or changes to their plumbing at times other than normal working hours, will be billed a minimum service call charge as follows:

Monday through Friday.....Charge

6:00 p.m. to 10:00 p.m.\$48.38
10:00 p.m. to 7:30 p.m.\$91.38

Weekends and Holidays.....Charge

3:30 p.m. to 7:30 p.m.\$48.38
7:30 p.m. to 7:30 a.m.\$91.38

The service call charge may be waived if the turn-off or turn-on is necessitated by an emergency over which the Customer has no control. The Water Utility will have the sole discretion of determining the validity of such an emergency.

WATER RULE 16
CONVEYANCE OF WATER RIGHTS
AND
WATER STOCK

A. WATER RIGHTS AND STOCK TO CITY

Applicable to all parcels of land with a gross acreage of less than 2-1/2 acres and having received irrigation water from a mutual water company except for Gage Canal Company.

All lands under a gross acreage of less than 2-1/2 acres of land shall forfeit all water rights or water stock which are appurtenant to the property and convey same to the City as a condition of receiving domestic water. The water rights or water stock will be donated to the City unless previous contractual agreements are on record with the City.

B. STOCK AND CONTRACT TRANSFERS

Whenever a water stock certificate or water contract must be changed or reissued by the City, a one hundred seven dollars fifty cents (\$107.50) processing fee will be charged for the following water companies:

Gage Canal Company (Contracts Only)

C. GAGE CANAL COMPANY WATER ENTITLEMENTS

Subject to conditions outlined in various City and Gage Canal Company Agreements, such as "Agreement for Operation of Gage Canal Facilities", the "By-Laws of the Gage Canal Company", and the "Stipulation for Judgment in Eminent Domain and Final Order of Condemnation", the following procedures shall be utilized when either contracting or transferring water entitlements:

Transfer of Shares or Contracts to new owner of existing property to which the shares are appurtenant for continued agricultural use. This action is defined in Section #8 of the "Agreement for Sale of Gage Canal Company Shares" (Sales Agreement) and does not require City consent. Does not impact existing City water supplies.

Turning in Shares to City without a request for “Contract for Delivery of Irrigation Water” (Contract). This is the completion of the original Sales Agreement and final payment of \$175 is made by the City. The City receives the shares and the water and the water entitlement represented by the shares for domestic use.

Conversion of Shares to Contract for Delivery of Irrigation Water to other lands within the Gage Canal service area. The original shareholder with shares excess to their needs offers, through the Gage Canal Company, to make these shares available. Other property owners, by virtue of Sales Agreement Item #7, within the service area contract with the City for the water entitlement represented by the shares. The City receives the Gage shares but **not** the water entitlement. City approval is required per Section 4 of the “Agreement for Operation of Gage Canal Facilities”. This approval is required but must be given.

The following types of transfers or contracts which would subtract from existing Water Utility domestic water supply will not be approved.

Request for Water Contracts for land on which the Gage water shares have been sold or transferred to the City. These contracts would be based on shares that have been turned into the City, the final \$175 payment has been made and the terms of the Sales Agreement are complete. This type of transaction would **not** receive City approval.

Request for Water Contracts for Additional Water added to existing shares up to a maximum of three (3) shares per acre (Negotiating Report Section D.2.h.). These contracts would be based on shares that have been turned in to the City and terms of the Sales Agreement are complete or the City has purchased shares outright. This type of transaction would **not** receive City approval.

Shares turned into City for which no Sales Agreement was signed. These shares do not have a commitment for a Contract. The City has agreed to purchase all shares of this type for \$225 per share. Shareholders may transfer water entitlement from one parcel of land to another belonging to them (Negotiating Report Section D.4.h). City will **not** approve transfer of water entitlement to land **not** owned by shareholder.

Transfer of Contract for Delivery of irrigation water from one parcel of land to another parcel of land. The City will **not** allow the transfer as the Contract is appurtenant to the described parcel.

**SCHEDULE WA-2
FLAT RATE - TEMPORARY SERVICE**

APPLICABILITY:

Applicable to special conditions of temporary service including construction water for subdivisions or tracts with ten (10) or more lots, fire hydrant meter use and bulk permit delivery.

TERRITORY:

City of Riverside and contiguous area.

RATES:

- A. **Temporary Service** (120 days maximum) for subdivisions or tracts with ten (10) or more lots. (Per Rule No.11) Payable with map or water plan.

<u>Service Size</u>	<u>Per Jumper</u>
3/4-inch and 1-inch	\$101.48

- B. **Temporary Service with a Fire Hydrant Meter.**

1. Rental of meter shall be per each calendar day or portion of day out of shop. If the rental period is between 26 day and 34 days inclusive, the rental of meter shall be according to the table below.

	Per Meter, Per Calendar Day Effective July 1,				
Rental Fee	2018	2019	2020	2021	2022
Daily Rental Fee	\$10.88	\$11.56	\$12.28	\$13.04	\$13.90
Fee (26 days – 34 days)	\$326.35	\$346.56	\$368.33	\$391.00	\$416.87

2. All water consumed shall be charged at quantity rates per 100 cubic feet listed below.

Quantity Rates		Per 100 Cubic Feet Effective July 1,				
		2018	2019	2020	2021	2022
	All Usage per CCF	\$2.39	\$2.39	\$2.39	\$2.39	\$2.39

3. A sixty dollar and ten cent (\$60.10) charge shall be made to cover the cost of estimating billing each month for each meter, unless the Director waives such fee at Director's sole discretion.
4. Customers may, at the sole discretion of the Director, purchase and register an acceptable fire hydrant meter with the Utilities Water Meter Shop. The daily rental fee as specified in Section B.1 of this rate tariff shall be waived for these meters.

SPECIAL CONDITIONS

1. **Water Conservation Surcharge**

The rates and charges above are subject to a surcharge (Water Conservation Surcharge) as adopted via City Council Resolution No. 22675 on April 22, 2014 and such surcharge as in effect from time to time. The Water Conservation Surcharge will be applied to the Customer's total water usage charge including without limitation the quantity rates, customer and minimum charge for the applicable billing period.

2. Applicable Rate Schedule

a. Applicable Rate Schedule

For Customers applying for service at an existing service address, the Utility will assign a water rate schedule based on the characteristics of the service address. The Utility will presume that any water rate previously assigned to that service address is the appropriate schedule, unless the Customer requests a review for another applicable rate schedule, rate, or optional provision. In certain situations when a Customer does not qualify for a water rate previously assigned to that service address, the Utility will assign the applicable rate to the Customer. The Utility assumes no responsibility for advising the Customer of lower optional rates under existing schedules available as a result of the Customer's changes to the characteristics of the service address.

b. Change of Rate Schedule

A change to the applicable rate schedule may be made if the Utility determines that the Customer no longer qualifies for the assigned rate schedule. The change will become effective for service rendered after the next regular meter reading following verification and approval by the Utility of such eligibility. Any change in rate schedules pursuant to this section shall be made prospectively only.

3. Water General Fund Transfer

The Water General Fund Transfer is a component of every customer's water bill, and is a transfer of up to 11.5% of revenues from the Water Fund to the City's General Fund. On June 4, 2013, the voters of the City of Riverside approved the Water General Fund Transfer as a general tax, pursuant to Article 13.C of the California Constitution.

ENERGY COST ADJUSTMENT FOR PUMPING WATER:

The Quantity Rates shall be subject to an energy cost adjustment relating to increases and decreases in the cost of electric power for pumping water. This energy cost adjustment shall apply to each one hundred cubic feet (CCF) of sales to which Quantity Rates apply.

Determination of the adjustment factor shall be made at the beginning of each quarter, with the initial adjustment beginning February 1, 1983.

The energy cost adjustment shall be calculated by dividing the CCF of metered water sold in each quarter into the total dollar amount of fuel cost adjustments plus any base rate increases imposed by power suppliers for pumping water during that quarter:

- A. Fuel cost adjustment charges by Southern California Edison Company.
- B. Fuel cost surcharge charges by City of Riverside.
- C. Base rate increase charges by Southern California Edison Company.*
- D. Base rate increase charges by City of Riverside.*

$$\frac{\$ (A+B+C+D)}{\text{CCF (Metered Sales)}} = \$.0000 \text{ per CCF}$$

The resultant shall be the energy cost adjustment factor for pumping water and shall be expressed in terms of cents per CCF carried out to the nearest \$0.0001. This factor shall be divided by 0.885 to allow for the 11.5% of gross revenue payable to the City General Fund. The resultant shall then become the energy cost adjustment to be multiplied by all CCF increments reported in billings to Customers. The resultant amount in each case, expressed to the nearest \$0.01, shall constitute the adjustment to be added to the Customer's bill.

*(Over base rates in effect February 1, 1983)

SCHEDULE WA-5

FIRE PROTECTION SERVICES AND FIRE HYDRANTS

FIRE PROTECTION SERVICE

APPLICABILITY:

Applicable to all Fire Protection Services within the service area of the Utility with a detector assembly installed below grade. Services shall be maintained by the Utility. Cost of maintenance, repair and replacement of the below ground detector assembly shall be paid by the Customer receiving benefit from fire protection service. This schedule is not applicable to Fire Protection Services installed with an above ground detector assembly. Above ground detector assemblies shall be maintained by the Customer and cost of maintenance, repair, replacement and testing of the above ground detector assembly shall be the responsibility of the Customer.

TERRITORY:

City of Riverside and contiguous area.

RATES:

Size of Service	Monthly Charge <u>Inside City</u>	Monthly Charge <u>Outside City</u>
4-inch	\$53.00	\$79.50
6-inch	79.25	119.00
8-inch	106.00	159.00
10-inch	132.50	198.50
12-inch	159.00	238.50

FIRE HYDRANT AVAILABILITY

APPLICABILITY:

Applicable to all Utility fire hydrants outside the service area of the City of Riverside Fire Department. Fire hydrants shall be maintained by the Utility and cost of maintenance repair and replacement of fire hydrants shall be paid by the fire districts providing fire protection service or by the Customer receiving benefit of fire hydrant availability.

TERRITORY:

Contiguous area to City of Riverside.

RATES:

<u>Fire Districts</u>	<u>Monthly Charge</u>
Inside Corona City Limits	\$10.71 per fire hydrant
Riverside County Area	1.36 per water service

SPECIAL CONDITIONS

1. Water Conservation Surcharge

The rates and charges above are subject to a surcharge (Water Conservation Surcharge) as adopted via City Council Resolution No. 22675 on April 22, 2014 and such surcharge as in effect from time to time. The Water Conservation Surcharge will be applied to the Customer's total water usage charge including without limitation the quantity rates, customer and minimum charge for the applicable billing period.

2. Applicable Rate Schedule

a. Applicable Rate Schedule

For Customers applying for service at an existing service address, the Utility will assign a water rate schedule based on the characteristics of the service address. The Utility will presume that any water rate previously assigned to that service address is the appropriate schedule, unless the Customer requests a review for another applicable rate schedule, rate, or optional provision. In certain situations when a Customer does not qualify for a water rate previously assigned to that service address, the Utility will assign the applicable rate to the Customer. The Utility assumes no responsibility for advising the Customer of lower optional rates under existing schedules available as a result of the Customer's changes to the characteristics of the service address.

b. Change of Rate Schedule

A change to the applicable rate schedule may be made if the Utility determines that the Customer no longer qualifies for the assigned rate schedule. The change will become effective for service rendered after the next regular meter reading following verification and approval by the Utility of such eligibility. Any change in rate schedules pursuant to this section shall be made prospectively only.

3. Water General Fund Transfer

The Water General Fund Transfer is a component of every customer's water bill, and is a transfer of up to 11.5% of revenues from the Water Fund to the City's General Fund. On June 4, 2013, the voters of the City of Riverside approved the Water General Fund Transfer as a general tax, pursuant to Article 13.C of the California Constitution.