## Appendix M: GENERATION INTERCONNECTION DATA SHEET

1. PROJECT NAME: ________________________________
   STREET ADDRESS: ________________________________
   CITY: ________________________________ STATE: ________ ZIP CODE: ________
   PROJECT NUMBER: ________________________________
   PHONE: ( ____ ) _____ - ________

2. CONTRACTUAL NAME: _______________________________________________________________
   STREET ADDRESS: ________________________________
   CITY: ________________________________ STATE: ________ ZIP CODE: ________
   PHONE: ( ____ ) _____ - ________

3. DEVELOPER NAME: ________________________________
   STREET ADDRESS: ________________________________
   CITY: ________________________________ STATE: ________ ZIP CODE: ________
   PHONE: ( ____ ) _____ - ________

4. SITE OWNER NAME: ________________________________
   STREET ADDRESS: ________________________________
   CITY: ________________________________ STATE: ________ ZIP CODE: ________
   PHONE: ( ____ ) _____ - ________

5. TYPE OF PROJECT:
   - Cogeneration
   - Hydro
   - Steam Turbine
   - Small Power Producer
   - Photovoltaic
   - Wind
   - Biomass
   - Recip. Engine
   - Gas Turbine
   - Other: ________________

6. TYPE OF CONTRACT BEING CONSIDERED:
   - S.O.1
   - S.O.3
   - Surplus Energy Output
   - No Sale With Parallel Agreement
   - Small Power Output kW
   - Will Negotiate For kW of Contract Capacity

7. WILL THERE BE REDUCED GENERATOR OUTPUT? _______ YES ________ NO
   IF YES, _______ kW FROM _____ TO _______

8. EXISTING PG&E PREMISES AND ACCOUNT NUMBERS INTERCONNECTED:
   PREMISES: ________________________________
   ACCOUNT: _______ - _______ - _______
   ________________________________
   ________________________________
   ________________________________
   ________________________________
10. MAXIMUM GENERATOR POWER DELIVERED TO PG&E AT INTERCONNECTION POINT:
   a. Generator rated output: Rated Output kW + ____________
   b. Less generator auxiliary load: Auxiliaries kW - ____________
   c. Maximum power delivered to PG&E: Max Delivered kW = ____________
   d. Load to be served when generator is OFF: Load kW ____________
   e. Existing load being displaced by this generator: kW ____________

11. THE ANTICIPATED OPERATION DATE: ________________________________________________

12. DO YOU PLAN ANY OTHER POWER GENERATION AT THIS SITE? _____ YES _____ NO

13. GENERATOR
   a. Size: kW: ______ KVA: ______ Power Factor (%): _______
   b. Type: Induction: _____ Synchronous: _____ D.C. with Inverter: _______
       Synchronizing: Auto _____ Manual _____ Relay Supervision: Yes _____ No _____
   c. Voltage: Output ________ Interconnection ________
   d. Phase: 1ϕ __________ 3ϕ __________
   e. Connection: Delta ________ Grounded WYE ________ Ungrounded ______
   * f. Inertia Constant: _______________ lb-ft² (when available)

14. PROVIDE PROPOSED GENERATOR OPERATING SCHEDULE (Total kWhrs):

<table>
<thead>
<tr>
<th>Month</th>
<th>kWhrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>_____</td>
</tr>
<tr>
<td>February</td>
<td>_____</td>
</tr>
<tr>
<td>March</td>
<td>_____</td>
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<tr>
<td>April</td>
<td>_____</td>
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<td>May</td>
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<td>September</td>
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<td>October</td>
<td>_____</td>
</tr>
<tr>
<td>November</td>
<td>_____</td>
</tr>
<tr>
<td>December</td>
<td>_____</td>
</tr>
</tbody>
</table>

PROVIDE PROPOSED AVERAGE PRODUCTION kWhrs AS REQUESTED:

Daily: __________ kWh Monthly: __________ kWh Yearly: __________ kWh

Schedule Maintenance Shutdown:

15. ELECTRIC METERING IS TO BE: Primary __________ Secondary __________
    Voltage _____ Pole Top _____ Switchboard _____ Customer Owned Sup. _____

16. GAS REQUIREMENTS:
    Volume: _____ MCFH Pressure: _________ PSIG
    Operations: Daily Hours: _________ Days Per Week: _________
    Scheduled Shutdowns: _______________________________________

17. GENERATOR VOLTAGE REGULATION RANGE: _______________________________________
    GENERATOR POWER FACTOR REGULATION RANGE: _________________________

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GENERATOR SHORT CIRCUIT DATA

(Final transformer and generator data must be based on actual test results for the particular transformer and generator. Typical values, calculated values or type testing are acceptable only if guaranteed in writing by manufacturer to be within +/- 3% accuracy):

<table>
<thead>
<tr>
<th>Type</th>
<th>(Xd) %</th>
<th>@ MVA</th>
<th>(T'd) SEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synchronous</td>
<td>______</td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>Transient</td>
<td>______</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtransient</td>
<td>______</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative Sequence</td>
<td>(X_2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zero Sequence</td>
<td>(X_0)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

18. OUTPUT: If the generator output is greater than 40kW (individually or as an aggregate group), ground protection will be required. If grounding will be required, please indicate type of ground detection below:

- _______ WYE GROUNDED/Delta GROUND BANK WITH OVERCURRENT RELAY
- *WYE GROUNDED/BROKEN DELTA: Ground Bank with Low Pick-up Overvoltage Relay
- _______ CURRENT TRANSFORMER WITH OVERCURRENT RELAY: In Neutral of Dedicated Transformer
- *POTENTIAL TRANSFORMER WITH VOLTAGE RELAY: In Neutral of Dedicated Transformer
- _______ * Preferred
- _______ OTHER: ________________________________________________________________

19. WHO WILL SUPPLY TRANSFORMER: Customer: _____ PG&E: _______

IF CUSTOMER SUPPLIED:
Primary Voltage: _____ Size: _________ KVA
Secondary Voltage: _____ Z _____ % Impedance

Available Taps: ___________________________________________________________________

Transformer Fuse: Type: __________ Size _________

20. WHAT TRANSFORMER CONNECTION IS DESIRED:

<table>
<thead>
<tr>
<th>Delta</th>
<th>Grounded Wye</th>
<th>Ungrounded Wye</th>
</tr>
</thead>
<tbody>
<tr>
<td>PG&amp;E Side</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>Generator Side</td>
<td>______</td>
<td>______</td>
</tr>
</tbody>
</table>
21. PROVIDE: Two original prints and one reproducible copy (no larger than 36” x 24”) of the following:
   a. SITE DRAWING to scale, showing generator location and point of interconnection with PG&E.
   b. SINGLE LINE DIAGRAM, showing switches/disconnects of the proposed interconnection, including the required protection devices and breakers.
   c. THREE LINE DIAGRAM, showing the proposed CTs and PTs as they are connected to the relays and meters.
   d. DESCRIPTION of operation and elementary drawings, showing the synchronization (if appropriate), sand tripping of breakers by the required relays are desirable. (If not provided, they may be requested after approval of the single and three line diagrams.)

22. BREAKER(s) EQUIPPED WITH:
   Undervoltage Release: _______  Capacitor Trip: _______  D.C. Trip: _______
   *(Not acceptable for use)

23. DO YOU WISH RECLOSE BLOCKING FOR INDUCTION GENERATORS? Yes   No
   We test automatically. Sufficient capacitance may be on the line now, or in the future, and your generator may self-excite unexpectedly.

24. PROVIDE a list of relays, switches and revenue meters (if customer provided), disconnects, etc., specified to meet PG&E requirements.
   Please include the following information:
   a. Manufacturer’s name and model number, with each device listed.
   b. Range of available settings.
   c. Proposed settings.
   d. Ratio of associated current and potential transformers. If multi-ratio, state the available ratios and which one is proposed.


** 26. For generation greater than 1000 kW provide the following:
   a. Substation grounding drawings showing all ground connections.
   b. A list of the amount and location of the shunt capacitor compensation that will be provided (induction generators only).

NOTE:
Generation customers are required to pay all costs to connect their projects to the PG&E system. Final estimated costs will have an accuracy of +10%. Unless otherwise requested, PG&E’s study will include reinforcements, modifications, and additions to PG&E’s electrical and/or gas system. It will not include on-site transformers, switchgear, or any other project substation facilities owned by the developer. PG&E’s requirements are summarized in greater detail in Electric Rule 21.

Completed By: _____________________________            Date: __________________

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