Generation Facility Technical Description

Bidder Name _____

Project Name _____

Description:

This Form requests information regarding the proposed facility(ies) for purpose of evaluating the overall impact of the facility(ies) on the system and OGE cost of serving customers. If the Proposal consists of more than one generating unit with different operating characteristics, the Bidder should provide applicable information for each unit. If data is excluded, the evaluators may at their option elect to utilize generic characteristics consistent with the proposed capacity type or, if the information should be known by the Bidder, reject the bid as non-responsive. Some information requested may not be known by the Bidder at this time; Bidder is expected to respond to each question to the extent such information is known or can be reasonably obtained. For information not relevant due to the technology type of the facility, please mark as "NA."

1) Project / Facility Name: _____

2) Generation Technology:

Describe the number and type of proposed generator units:

_____

_____

Configuration of generation equipment, i.e., CTs, HRSGs, wind turbines, solar PV, etc.:

_____

_____

Generation equipment model numbers, vendors, manufacturers, (inclusive of solar panel and inverter technology) etc.:

_____

_____

3) Expected SPP Firm Capacity Rating (MW):

Description: Please indicate conditions for temperature, altitude, and power factor for which the data is supplied where applicable and capacity test data

Summer Max Capacity Rating	_____
Winter Max Capacity Rating	_____
Maximum operating level	_____
Minimum operating level	_____
Most efficient operating level	_____
Percent credit applied to determine electric load carrying capability at peak	_____

4) Expected Annual Forced Outage / Unplanned Maintenance Rate (%): _____

Description: This rate should include only forced outages and unplanned maintenance, not planned maintenance. Existing units should also attached 5 year historical GADs data. Attachment name should include the Bidder and Facility name and indicate "Form D Q4".

5) Expected Average Annual Maintenance Requirements Days / Year: _____

On-peak Months (May, June, July, August, September): _____

Off-peak Months: _____

(additionally, an annual operation and maintenance plan is required as per the RFP and should be provided in Form G.)

6) For non-intermittent facilities, state the target equivalent availability factor and the projected capacity factor. For intermittent resources, state the projected gross and net capacity factor. Describe performance guarantees for facility operation.

_____

_____

_____

_____

_____

_____

7) Describe any circumstances under which the Facility output will have to be curtailed on a predictable basis such as maintenance, steam host operation, etc.

_____

_____

8) Heat Rate

Where applicable, please provide average and incremental heat rates for the Facility, higher heating value for the primary fuel specified or anticipated fuel blend. Additionally, heat rate curves by season should be provided for all thermal resources.

	Average Heat Rate (BTU/kWh)	**Incremental Heat Rate (BTU/kWh)**

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Minimum Operating Level	_____	_____
50% of net capability	_____	_____
75% of net capability	_____	_____
100% of net capability	_____	_____

9) Is Proposed Plant AGC Controllable? Yes _____ No _____

a) Low AGC Point (lowest output than can be achieved while the unit is on AGC)

_____

b) High AGC Point (highest output than can be achieved while the unit is on AGC)

_____

10) Minimum On-line Time _____
Include the minimum time between the generator breaker closing and re-opening in hours

11) Minimum Downtime _____
Include the minimum time the generator needs to be off-line prior to restarting in hours

12) Start Time - (unit has been off-line for six hours) _____
Include the time it takes for the unit to start, close breaker and reach minimum load

13) Start Time - (unit has been off-line for eight hours) _____
Include the time it takes for the unit to start, close breaker and reach minimum load

14) Start Time - (unit has been off-line for 12 hours) _____
Include the time it takes for the unit to start, close breaker and reach minimum load

15) Start Time - (unit has been off-line for 3 days) _____

16) Start-up Limits (# of starts per day/week/month/year) _____

17) Start-up Fuel _____

18) Start-up Costs ($ per start) _____

19) AGC Ramp Rate _____
Include the rate at which the unit responds to frequency changes while on control (MW/minute)

20) Normal Ramp Rate _____
Include the rate at which the unit can increase output while on manual control (MW/minute)

21) Emergency Ramp Rate _____
Include the rate at which the unit can increase output only for emergency situations (MW/minute)

22) Ten-minute Start Capability Yes _____ No _____
If yes, achievable unit loading 10 minutes after synchronizing to system

23) Black Start Capability Yes _____ No _____

24) Provide reactive power capability curve *(include as Excel attachment or additional sheet within this file. Attachment name should include the Bidder and Facility name and indicate "Form D Q20.")*

25) Provide maximum reactive power productive and absortive capability.

26) Technical Data:

Generator MVA Base	_____
Generator Nominal Power factor	_____
Generator Terminal Voltage	_____
Direct Axis Synchronous Reactance Xd	_____
Direct Axis Transient Reactance X'd	_____
Direct Axis Sub-Transient Reactance X''d	_____
Generator Step-up Transformer MVA Base	_____
Generator Step-up Transformer Impedance (R+jX on transformer MVA Base)	_____
Generator Step-up Transformer Rating (MVA)	_____
Generator Step-up Transformer Low-side Voltage (kV)	_____
Generator Step-up Transformer High-side Voltage (kV)	_____
Generator Step-up Transformer Number of taps and step size	_____