



414 Nicollet Mall
Minneapolis, Minnesota 55401-1993

**PUBLIC DOCUMENT
TRADE SECRET DATA HAS BEEN EXCISED**

April 15, 2013

Dr. Burl W. Haar
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, Minnesota 55101

RE: Petition to the Minnesota Public Utilities Commission
Seeking Approval for a Competitive Resource Acquisition
Proposal and for a Certificate of Need
Docket No. E002/CN-12-1240

Dear Dr. Haar:

Northern States Power Company, doing business as Xcel Energy, submits to the Minnesota Public Utilities Commission this Trade Secret version of Appendix C containing Non-Public operational and cost information pertaining to its proposal in the above-referenced docket to construct three 215 MW combustion turbine generators with in-service dates between 2017 – 2019.

The operational and cost information in Appendix C is designated as Trade Secret pursuant to Minnesota Statute § 13.37, subd. 1(b). The information derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use. This information was compiled as a result of significant investment of time and effort, is unique to Xcel Energy, and would be of economic value if disclosed to others who would otherwise not have access to it.

The Trade Secret version of Appendix C is being served by mail on the Office of the Attorney General and the Department of Commerce subject to the protections from disclosure contained in the Minnesota Government Data Practices Act and the Commission's Revised Procedures for Handling Trade Secret and Privileged Data (September 1, 1999). The Trade Secret version of Appendix C will also be provided to

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those non-government parties who become eligible to review its Non-Public contents pursuant to a non-disclosure agreement with Xcel Energy or a protective order issued in this docket.

Please contact me at james.r.alders@xcelenergy.com or (612) 330-6742 if you have any questions regarding this filing.

Sincerely,

/s/

JAMES R. ALDERS
STRATEGY CONSULTANT
REGULATORY AFFAIRS

Enclosures

c: Service Lists

Appendix C
Project Operational and Cost Data

Table C1a
 Black Dog Unit 6
 Project Generating Capability

Summer Conditions (95°F, 30% Relative Humidity)			
Capability		Net Heat Rate (Btu/kWh) (HHV)	Efficiency (%) (HHV)
% of Base	MW		
<i>[TRADE SECRET DATA BEGINS...]</i>			
100 (Full Load)*			
<i>...TRADE SECRET DATA ENDS]</i>			
Winter Conditions (-5°F, 60% Relative Humidity)			
Capability		Net Heat Rate (Btu/kWh) (HHV)	Efficiency (%) (HHV)
% of Base	MW		
<i>[TRADE SECRET DATA BEGINS...]</i>			
100 (Full Load)*			
<i>...TRADE SECRET DATA ENDS]</i>			
Reference Temperature Conditions (59°F, 60% Relative Humidity)			
Capability		Net Heat Rate (Btu/kWh) (HHV)	Efficiency (%) (HHV)
% of Base	MW		
<i>[TRADE SECRET DATA BEGINS...]</i>			
50			
60			
70			
80			
90			
100 (Full Load)*			
*The facility will typically run up to its best efficiency load point.			
<i>...TRADE SECRET DATA ENDS]</i>			

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Table C1b
Red River Valley
Project Generating Capability (Applies to Each Unit – 1 and 2)

Summer Conditions (88°F, 42% Relative Humidity)			
Capability		Net Heat Rate (Btu/kWh) (HHV)	Efficiency (%) (HHV)
% of Base	MW		
<i>[TRADE SECRET DATA BEGINS...]</i>			
100 (Full Load)*			
<i>...TRADE SECRET DATA ENDS]</i>			
Winter Conditions (-5°F, 100% Relative Humidity)			
Capability		Net Heat Rate (Btu/kWh) (HHV)	Efficiency (%) (HHV)
% of Base	MW		
<i>[TRADE SECRET DATA BEGINS...]</i>			
100 (Full Load)*			
<i>...TRADE SECRET DATA ENDS]</i>			
Reference Temperature Conditions (41°F, 70% Relative Humidity)			
Capability		Net Heat Rate (Btu/kWh) (HHV)	Efficiency (%) (HHV)
% of Base	MW		
<i>[TRADE SECRET DATA BEGINS...]</i>			
50			
60			
70			
80			
90			
100 (Full Load)*			
*The facility will typically run up to its best efficiency load point.			
<i>...TRADE SECRET DATA ENDS]</i>			

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Table C2a
Project Fuel Requirements – Black Dog Unit 6

Rule Reference	Description	Project Data, per Unit
		<i>[TRADE SECRET DATA BEGINS...</i>
7849.0320, C(1)	Fuel (Natural Gas) Source	
7849.0320, C(2)	Fuel Requirement <ul style="list-style-type: none"> •summer, peak (95F) •winter, peak (-5F) •reference temperature, base load (59F) •Annual consumption (59F) 	
7849.0320, C(3)	Heat Input (HHV) <ul style="list-style-type: none"> •summer, peak (95F) •winter, peak (-5F) •reference temperature, base load (59F) 	
7849.0320, C(4)	Fuel (natural gas) Heat Value	
7849.0320, C(5)	Fuel Content: <ul style="list-style-type: none"> Sulfur Ash Moisture Content 	
		<i>...TRADE SECRET DATA ENDS]</i>

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Table C2b – North Dakota
Project Fuel Requirements, per Unit

Rule Reference	Description	Project Data, per Unit
		<i>[TRADE SECRET DATA BEGINS...</i>
7849.0320, C(1)	Fuel (Natural Gas) Source	
7849.0320, C(2)	Fuel Requirement <ul style="list-style-type: none"> •summer, peak (88F) •winter, peak (-5F) •reference temperature, base load (41F) •Annual consumption (41F) 	
7849.0320, C(3)	Heat Input (HHV) <ul style="list-style-type: none"> •summer, peak (88F) •winter, peak (-5F) •reference temperature, base load (41F) 	
7849.0320, C(4)	Fuel (natural gas) Heat Value	
7849.0320, C(5)	Fuel Content (Gas): <ul style="list-style-type: none"> Sulfur Ash Moisture Content 	
		<i>... TRADE SECRET DATA ENDS]</i>

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**Table C3a
Project Cost Summary – Black Dog**

Item	Black Dog Unit 6		
Unit	6	6 (Option 1)	6 (Option 2)
In-Service Date	March 2017	March 2018	March 2019
<i>[TRADE SECRET DATA BEGINS...</i>			
Project Base Capacity Cost			
Base Summer Capacity Costs in \$/kW			
Transmission Cost			
Gas Cost			
Base Total Cost in \$/kWh			
Annual Revenue Requirement in \$/kWh (In-Service Year)			
Fuel Costs in \$/kWh (In-Service Year)			
Variable O&M Costs in \$/kWh ((In-Service Year)			
Estimated Effect on Rates \$/kWh (MN & Total System)			
Sunk Costs if Canceled			
Estimated number of construction jobs			
Estimated amount of construction payroll to economy			
Estimated number of operations jobs			
<i>...TRADE SECRET DATA ENDS]</i>			

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**Table C3b
Project Cost Summary – North Dakota**

Item	North Dakota Units 1 and 2	
Unit	1	2
In-Service Date	March 2018	February 2019
	<i>[TRADE SECRET DATA BEGINS...</i>	
Project Base Capacity Cost		
Base Summer Capacity Costs in \$/kW		
Transmission Cost		
Gas Cost		
Base Total Cost in \$/kWh		
Annual Revenue Requirement in \$/kWh (In-Service Year)		
Fuel Costs in \$/kWh (In-Service Year)		
Variable O&M Costs in \$/kWh ((In-Service Year)		
Estimated Effect on Rates \$/kWh (MN & Total System)		
Sunk Costs if Canceled		
Estimated number of construction jobs		
Estimated amount of construction payroll to economy		
Estimated number of operations jobs		
	<i>...TRADE SECRET DATA ENDS]</i>	

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**Table C4a
Black Dog Unit 6**

Rule Reference	Description	Project Data
7849.0250, A(1)	Nominal Generating Capability of each Unit	about 214 MW
7849.0250, A(2)	Operating Cycle	Simple Cycle
7849.0250, A(2)	Expected Average Annual Capacity Factor	4 to 10 percent
7849.0250, C(2)	Service Life	35 Years
7849.0250, C(3)	Estimated Average Annual Availability	> 95 percent
7849.0320, A	Estimated Land Requirements	0 acres (inside existing structure)
7849.0320, E (1)	Estimated Maximum Groundwater Pumping Rate for each Unit Surface Water Appropriation	50 GPM peak, 34 GPM daily average during Summer operation for evaporative cooling 0 cfs for Project, 633 cfs for Site
7849.0320, E (2)	Estimated Annual Project Groundwater Appropriation (assuming RO purification process) for existing Units 2 and 5	1.2 million gallons/year or 3.7 acre-feet/year (X% of site appropriation)
7849.0320, E (3)	Annual Project Surface Water Consumption Unit 6	215,100 acre-feet (50% of site appropriation) for existing Units 2 and 5 0

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Table C4b
Red River Valley Units 1 and 2

Rule Reference	Description	Project Data
7849.0250, A(1)	Nominal Generating Capability of each Unit	about 214 MW
7849.0250, A(2)	Operating Cycle	Simple Cycle
7849.0250, A(2)	Expected Annual Capacity Factor	4 to 10 percent
7849.0250, C(2)	Service Life	35 Years
7849.0250, C(3)	Estimated Average Annual Availability	> 95 percent
7849.0320, A	Estimated Land Requirements	< 35 acres on site of approximately 160 acres
7849.0320, E (1)	Estimated Maximum Groundwater Pumping Rate for each Unit Surface Water Appropriation	50 GPM peak, 34 GPM daily average during Summer operation for evaporative cooling 0 cfs for Project, 633 cfs for Site
7849.0320, E (2)	Estimated Annual Project Groundwater Appropriation (assuming RO purification process)	1.2 million gallons/year or 3.7 acre-feet/year 0 if water is brought in by truck
7849.0320, E (3)	Annual Project Surface Water Consumption Unit 1 Unit 2	 0 0

Strategist Assumptions Documentation - Unit Performance & Cost Estimate

PROJECT: Black Dog Unit 6 CT (2017) PREPARED BY: Greg Ford/Elizabeth Karels
4/8/2013

PROJECT/UNIT DESCRIPTION AND SOURCE DOCUMENTATION:
[TRADE SECRET DATA BEGINS...]

...TRADE SECRET ENDS]

IN-SERVICE DATE: 3/1/2017 In-service: Strategist will assume in-service at the 1st of the month.
 RETIREMENT DATE: 12/31/2051 Retirement: Strategist will assume retirement on the last day of the month.

NET CAPACITY :

		Summer	Average	Winter
Ambient Conditions Assumptions		95F	59 F	-5 F
[TRADE SECRET DATA BEGINS...]				
Minimum Capacity	(50%)			
Load Point 2	(60%)			
Load Point 3	(70%)			
Load Point 4	(80%)			
Load Point 5	(90%)			
Maximum Capacity	(100%)			
...TRADE SECRET DATA ENDS]				

Minimum Capacity: For a combined cycle unit it should be the minimum generation in combined cycle configuration. Not CT only using bypass stacks.
Maximum Capacity: Should be the maximum net generation without duct firing.
Maximum With Ducts:
Emergency Capacity: Strategist will not dispatch a unit at this level, but the unit will be accredited this capacity for loads and resource calculations. This input is commonly used for coal plants with "gas topping".

HEAT RATE:

		Average
[TRADE SECRET DATA BEGINS...]		
Minimum Capacity	(50%)	
Load Point 2	(60%)	
Load Point 3	(70%)	
Load Point 4	(80%)	
Load Point 5	(90%)	
Maximum Capacity	(100%)	
Maximum With Ducts		
...TRADE SECRET DATA ENDS]		

Heat Rate: Strategist can only model a single heat rate curve per unit. For peakers a summer heat rate profile is appropriate. For intermediate and baseload plants the average conditions are appropriate.
Load Points: Please provide as many as available.

VARIABLE O&M: [TRADE SECRET DATA BEGINS...] Variable O&M: Typically chemicals and water only. Strategist will use an inflation rate, based on non-labor rates to escalate this value.

Ramp Rate: [TRADE SECRET DATA BEGINS...] Ramp Rate: Strategist will use this input to calculate the units contribution to spinning reserve.
 Start Time: [TRADE SECRET DATA BEGINS...] Start Time: This input used to determine quick start ability of unit.

FIXED O&M: 2013 dollars, \$thousands

2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
[TRADE SECRET DATA BEGINS...]									
...TRADE SECRET DATA ENDS]									

Fixed O&M: This cost should primarily be annual labor expenses. Strategist will use an inflation rate, based on labor rates to escalate this value.

MAINTENANCE SCHEDULE Weeks / Year

2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
[TRADE SECRET DATA BEGINS...]									
...TRADE SECRET DATA ENDS]									

FORCED OUTAGE RATE: [TRADE SECRET DATA BEGINS...] Maintenance Schedule: This yearly profile should reflect periodic major outages.
 Forced Outage Rate: A simple % that reflects the probability of unplanned outages.

INITIAL CAPITAL COSTS: [TRADE SECRET DATA BEGINS...] Initial Capital: Capital costs should include everything "inside the fence". Transmission costs should include interconnection but not other grid upgrades (these will be provided by Transmission). Gas costs should include interconnection but not additional pipeline upgrades that will be paid by either Xcel's gas operations or another gas company.

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
[TRADE SECRET DATA BEGINS...]									
...TRADE SECRET DATA ENDS]									

Capital Notes: estimate in nominal dollars to COD in March 2017

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
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ON-GOING CAPITAL COST:

*2013 dollars, \$thousands,
or % of initial capital*

On-Going Capital Notes: 2013 Dollars; escalation should be applied at approved Corporate rates

[TRADE SECRET DATA BEGINS...]

...TRADE SECRET DATA ENDS]

On-Going Capital: Annual capital expenditures for regular maintenance and overhauls.

		Average Emission Rates lbs/mmBtu	
Emissions Data :		[TRADE SECRET DATA BEGINS...]	
lbs/mmBtu	SOx		Emissions Data: Data should reflect average emission rates stated in lbs/mmBtu using the units primary fuel. If lbs/mmbtu is not available Strategist does have the ability to model emissions as lbs/MWh. Based on full load data
	NOx		
	CO2		
	HG		
	PM_10		
	CO		
	VOC		
	Pb		
		...TRADE SECRET DATA ENDS]	

		Average Water Consumption gallons/MWh	
Water Usage		[TRADE SECRET DATA BEGINS...]	
gallons/MWh	Water Consumption		Water Consumption: Data should reflect average water consumption per MWh. SOx, NOx, CO2, and Hg inputs are mandatory for all OpCos
		...TRADE SECRET DATA ENDS]	

Strategist Assumptions Documentation - Transmission Project/Grid Upgrades

PROJECT: Black Dog Unit 6 CT (2017) PREPARED BY: Greg Ford/Elizabeth Karels
4/8/2013

PROJECT DESCRIPTION AND SOURCE DOCUMENTATION:
[TRADE SECRET DATA BEGINS...]

...TRADE SECRET ENDS]

PROJECT INFORMATION

IN-SERVICE: 3/1/2017 In-service: Strategist will assume in-service at the 1st of the month.

Summer Average Winter

NET CAPACITY : [TRADE SECRET DATA BEGINS...]

Maximum Capacity					Maximum Capacity: Should be the maximum net generation without duct firing. Maximum With Ducts: Maximum with duct firing Emergency Capacity: This input is commonly used for coal plants with "gas topping".
Maximum With Ducts					
Emergency Capacity					

...TRADE SECRET DATA ENDS]

EXPECTED CAPACITY FACTOR [TRADE SECRET DATA BEGINS...] Expected Capacity Factor: Based on Strategist simulations.

INITIAL CAPITAL COSTS: [TRADE SECRET DATA BEGINS...]

...TRADE SECRET DATA ENDS]

\$thousands

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	[TRADE SECRET DATA BEGINS...]									

...TRADE SECRET DATA ENDS]

Capital Notes: Nominal Dollars

Grid Upgrade Costs: The capital costs for additional grid upgrades needed to support the incremental generation of this project.

ON-GOING ANNUAL EXPENSES: [TRADE SECRET DATA BEGINS...]

2013 dollars, \$thousands, or % of initial capital

On-Going Expenses Notes:

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	[TRADE SECRET DATA BEGINS...]									

...TRADE SECRET DATA ENDS]

On-Going Costs: Annual cost for maintenance of proposed transmission infrastructure.

Strategist Assumptions Documentation - Gas Supply

PROJECT: Black Dog Unit 6 CT (2017)	PREPARED BY: Richard Derryberry 2/5/2013
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PROJECT DESCRIPTION AND SOURCE DOCUMENTATION:
 [TRADE SECRET DATA BEGINS...]
 ...TRADE SECRET ENDS]

PROJECT INFORMATION: *if additional project data is needed please contact Resource Planning Analytics*

IN-SERVICE: **In-service:** Strategist will assume in-service at the 1st of the month.
 Summer Average Winter

NET CAPACITY : [TRADE SECRET DATA BEGINS...]

Maximum Capacity					
Maximum With Ducts					

 ...TRADE SECRET DATA ENDS]

Maximum Capacity: Should be the maximum net generation without duct firing.
Maximum With Ducts: Maximum with duct firing

Average [TRADE SECRET DATA BEGINS...]
 HEAT RATE:

Maximum Capacity		
Maximum With Ducts		

 ...TRADE SECRET DATA ENDS]

Expected Heat Rate: This value multiplied by the maximum capacity equals the peak fuel consumption (mmbtu/hour)

EXPECTED CAPACITY FACTOR [TRADE SECRET DATA BEGINS...]
 Expected Capacity Factor: Based on Strategist simulations.
 ...TRADE SECRET DATA ENDS]

ANNUAL FIXED FUEL CHARGE 2013 dollars, \$thousands

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
	[TRADE SECRET DATA BEGINS...]									
Fixed Charge Notes:										

...TRADE SECRET DATA ENDS]

Annual Fixed Charge: Annual cost that do not vary by volume of gas burned in a given year.

VOLUMETRIC CHARGE: 2013 dollars, \$/mmbtu

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Supply Point	NNG	NNG	NNG	NNG	NNG	NNG	NNG	NNG	NNG	NNG
	[TRADE SECRET DATA BEGINS...]									
Fuel %										
Variable - \$/Dth										
Variable - \$/Dth										

...TRADE SECRET DATA ENDS]

Volumetric Charge: The cost to deliver fuel to the unit from a priced distribution hub (Ventura, CGI, Henry, etc). Please be sure to note the hub used in calculating this value.

Strategist Assumptions Documentation - Capital Asset Accounting

PROJECT: Black Dog Unit 6 CT (2017) PREPARED BY: Elizabeth Karels
3/6/2013

PROJECT INFORMATION

IN-SERVICE: 3/1/2017 In-service: Strategist will assume in-service at the 1st of the month.

UNIT TYPE: Combustion Turbine
 Summer Average Winter
[TRADE SECRET DATA BEGINS...]

NET CAPACITY : Maximum Capacity ...TRADE SECRET DATA BEGINS...
[TRADE SECRET DATA BEGINS...] ...TRADE SECRET DATA ENDS]

EXPECTED CAPACITY FACTOR [TRADE SECRET DATA BEGINS...] Expected Capacity Factor: Based on Strategist simulations.
...TRADE SECRET DATA ENDS]

NEW UNIT CAPITAL COSTS \$thousands,

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	[TRADE SECRET DATA BEGINS...]									
	...TRADE SECRET DATA ENDS]									

Capital Notes:

Initial Capital: Capital costs should include everything "inside the fence".

ON-GOING CAPITAL COSTS 2013 dollars, \$thousands, or % of initial capital

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
	[TRADE SECRET DATA BEGINS...]									
	...TRADE SECRET DATA ENDS]									

On-Going Capital Notes:

On-Going Capital: Annual capital expenditures for regular maintenance and overhauls.

TRANSMISSION CAPITAL COSTS: 2013 dollars, \$thousands, or % of initial capital

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	[TRADE SECRET DATA BEGINS...]									
	...TRADE SECRET DATA ENDS]									

Transmission Capital Notes:

Grid Upgrade Costs: The cost of additional grid upgrades needed to support the incremental generation of this project.

UNIT DEPRECIATION: [TRADE SECRET DATA BEGINS...]

BOOK LIFE

BOOK DEPRECIATION

TAX LIFE

TAX DEPRECIATION

DECOMMISSIONING EXPENSE:

TRANSMISSION INVESTMENT DEPRECIATION:

BOOK LIFE

BOOK DEPRECIATION

TAX LIFE

TAX DEPRECIATION

OTHER CAPITAL RELATED INPUTS

AFUDC / CWIP: AFUDC / CWIP: This input should be coordinated with Rates and Resource Planning

PROPERTY TAX RATE: PROPERTY TAXES : Property Tax inputs should be coordinated with Tax Services
...TRADE SECRET DATA ENDS]

Strategist Assumptions Documentation - Unit Performance & Cost Estimate

PROJECT: Black Dog Unit 6 CT (2018) PREPARED BY: Greg Ford/Elizabeth Karels
4/8/2013

PROJECT/UNIT DESCRIPTION AND SOURCE DOCUMENTATION:
[TRADE SECRET DATA BEGINS...]

...TRADE SECRET ENDS]

IN-SERVICE DATE: 3/1/2018 In-service: Strategist will assume in-service at the 1st of the month.
 RETIREMENT DATE: 12/31/2052 Retirement: Strategist will assume retirement on the last day of the month.

NET CAPACITY :	Ambient Conditions Assumptions	Summer	Average	Winter	
		95F	59 F	-5 F	
		[TRADE SECRET DATA BEGINS...]			
Minimum Capacity	(50%)				Minimum Capacity: For a combined cycle unit it should be the minimum generation in combined cycle configuration. Not CT only using bypass stacks. Maximum Capacity: Should be the maximum net generation without duct firing. Maximum With Ducts: Emergency Capacity: Strategist will not dispatch a unit at this level, but the unit will be accredited this capacity for loads and resource calculations. This input is commonly used for coal plants with "gas topping".
Load Point 2	(60%)				
Load Point 3	(70%)				
Load Point 4	(80%)				
Load Point 5	(90%)				
Maximum Capacity	(100%)				
		...TRADE SECRET DATA ENDS]			

HEAT RATE:	Average	[TRADE SECRET DATA BEGINS...]		
		Minimum Capacity	(50%)	
Load Point 2	(60%)			Heat Rate: Strategist can only model a single heat rate curve per unit. For peakers a summer heat rate profile is appropriate. For intermediate and baseload plants the average conditions are appropriate. Load Points: Please provide as many as available.
Load Point 3	(70%)			
Load Point 4	(80%)			
Load Point 5	(90%)			
Maximum Capacity	(100%)			
Maximum With Ducts				
		...TRADE SECRET DATA ENDS]		

VARIABLE O&M: [TRADE SECRET DATA BEGINS...] Variable O&M: Typically chemicals and water only. Strategist will use a inflation rate, based on non-labor rates to escalate this value.

Ramp Rate: [TRADE SECRET DATA BEGINS...] Ramp Rate: Strategist will use this input to calculate the units contribution to spinning reserve.
 Start Time: [TRADE SECRET DATA ENDS] Start Time: This input used to determine quick start ability of unit.

FIXED O&M: 2013 dollars, \$thousands

2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
[TRADE SECRET DATA BEGINS...]									
...TRADE SECRET DATA ENDS]									

Fixed O&M: This cost should primarily be annual labor expenses. Strategist will use an inflation rate, based on labor rates to escalate this value.

MAINTENANCE SCHEDULE Weeks / Year

2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
[TRADE SECRET DATA BEGINS...]									
...TRADE SECRET DATA ENDS]									

FORCED OUTAGE RATE: [TRADE SECRET DATA BEGINS...] Maintenance Schedule: This yearly profile should reflect periodic major outages.
 Forced Outage Rate: A simple % that reflects the probability of unplanned outages.

INITIAL CAPITAL COSTS: [TRADE SECRET DATA ENDS] \$thousands

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
[TRADE SECRET DATA BEGINS...]									
...TRADE SECRET DATA ENDS]									

Capital Notes: estimate in nominal dollars to COD in March 2017

Initial Capital: Capital costs should include everything "inside the fence". Transmission costs should include interconnection but not other grid upgrades (these will be provided by Transmission). Gas costs should include interconnection but not additional pipeline upgrades that will be paid by either Xcel's gas operations or another gas company.

Strategist Assumptions Documentation - Transmission Project/Grid Upgrades																															
PROJECT:	Black Dog Unit 6 CT (2018)	PREPARED BY:	Greg Ford/Elizabeth Karels 4/8/2013																												
PROJECT DESCRIPTION AND SOURCE DOCUMENTATION:																															
[TRADE SECRET DATA BEGINS...]																															
[...TRADE SECRET ENDS]																															
PROJECT INFORMATION																															
IN-SERVICE:	3/1/2018	In-service: Strategist will assume in-service at the 1st of the month.																													
		Summer	Average	Winter																											
[TRADE SECRET DATA BEGINS...]																															
NET CAPACITY :	Maximum Capacity				Maximum Capacity: Should be the maximum net generation without duct firing. Maximum With Ducts: Maximum with duct firing Emergency Capacity: This input is commonly used for coal plants with "gas topping".																										
	Maximum With Ducts																														
	Emergency Capacity																														
[TRADE SECRET DATA BEGINS...]																															
[...TRADE SECRET DATA ENDS]																															
EXPECTED CAPACITY FACTOR	[...]	Expected Capacity Factor: Based on Strategist simulations.																													
INITIAL CAPITAL COSTS:																															
[...]	<table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <tr> <th style="width: 8.33%;">2014</th> <th style="width: 8.33%;">2015</th> <th style="width: 8.33%;">2016</th> <th style="width: 8.33%;">2017</th> <th style="width: 8.33%;">2018</th> <th style="width: 8.33%;">2019</th> <th style="width: 8.33%;">2020</th> <th style="width: 8.33%;">2021</th> <th style="width: 8.33%;">2022</th> <th style="width: 8.33%;">2023</th> </tr> <tr> <td>[...]</td> <td>[...]</td> <td>[...]</td> <td>[...]</td> <td>[...]</td> <td>[...]</td> <td>[...]</td> <td>[...]</td> <td>[...]</td> <td>[...]</td> </tr> </table>											2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2014	2015	2016	2017	2018	2019	2020	2021	2022	2023																						
[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]																						
[TRADE SECRET DATA BEGINS...]																															
[...TRADE SECRET DATA ENDS]																															
\$thousands Capital Notes: Nominal Dollars	Grid Upgrade Costs: The capital costs for additional grid upgrades needed to support the incremental generation of this project.																														
ON-GOING ANNUAL EXPENSES:																															
2013 dollars, \$thousands, or % of initial capital On-Going Expenses Notes:	<table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <tr> <th style="width: 8.33%;">2014</th> <th style="width: 8.33%;">2015</th> <th style="width: 8.33%;">2016</th> <th style="width: 8.33%;">2017</th> <th style="width: 8.33%;">2018</th> <th style="width: 8.33%;">2019</th> <th style="width: 8.33%;">2020</th> <th style="width: 8.33%;">2021</th> <th style="width: 8.33%;">2022</th> <th style="width: 8.33%;">2023</th> </tr> <tr> <td>[...]</td> <td>[...]</td> <td>[...]</td> <td>[...]</td> <td>[...]</td> <td>[...]</td> <td>[...]</td> <td>[...]</td> <td>[...]</td> <td>[...]</td> </tr> </table>											2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]
2014	2015	2016	2017	2018	2019	2020	2021	2022	2023																						
[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]	[...]																						
[TRADE SECRET DATA BEGINS...]																															
[...TRADE SECRET DATA ENDS]																															
On-Going Costs: Annual cost for maintenance of proposed transmission infrastructure.																															

Stratelist Assumptions Documentation - Gas Supply

PROJECT: **Black Dog Unit 6 CT (2018)** PREPARED BY: **Richard Derryberry**
2/5/2013

PROJECT DESCRIPTION AND SOURCE DOCUMENTATION:
 [TRADE SECRET DATA BEGINS...]
 [Redacted Box]
 ...TRADE SECRET ENDS]

PROJECT INFORMATION: *if additional project data is needed please contact Resource Planning Analytics*

IN-SERVICE: **3/1/2018** **In-service: Stratelist will assume in-service at the 1st of the month.**
 Summer Average Winter

NET CAPACITY : [TRADE SECRET DATA BEGINS...]
 Maximum Capacity [Redacted] **Maximum Capacity: Should be the maximum net generation without duct firing.**
 Maximum With Ducts [Redacted] **Maximum With Ducts: Maximum with duct firing**
 ...TRADE SECRET DATA ENDS]

Average
 HEAT RATE: [TRADE SECRET DATA BEGINS...]
 Maximum Capacity [Redacted] **Expected Heat Rate: This value multiplied by the maximum capacity equals the peak fuel consumption (mmbtu/hour)**
 Maximum With Ducts [Redacted]
 ...TRADE SECRET DATA ENDS]

EXPECTED CAPACITY FACTOR [TRADE SECRET DATA BEGINS...]
Expected Capacity Factor: Based on Stratelist simulations.
 ...TRADE SECRET DATA ENDS]

ANNUAL FIXED FUEL CHARGE 2013 dollars, \$thousands

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
[TRADE SECRET DATA BEGINS...]										
[Redacted Table]										
...TRADE SECRET DATA ENDS]										

Fixed Charge Notes: [Redacted Box]

Annual Fixed Charge: Annual cost that do not vary by volume of gas burned in a given year.
 [Redacted Box]

VOLUMETRIC CHARGE: 2013 dollars, \$/mmbtu

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Supply Point	NNG	NNG	NNG	NNG	NNG	NNG	NNG	NNG	NNG	NNG
[TRADE SECRET DATA BEGINS...]										
Fuel %	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
Variable - \$/Dth	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
Variable - \$/Dth	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
...TRADE SECRET DATA ENDS]										

Volumetric Charge Notes: [Redacted Box]

Volumetric Charge: The cost to deliver fuel to the unit from a priced distribution hub (Ventura, CGI, Henry, etc). Please be sure to note the hub used in calculating this value.
 [Redacted Box]

Strategist Assumptions Documentation - Capital Asset Accounting

PROJECT: Black Dog Unit 6 CT (2018) PREPARED BY: Elizabeth Karels
3/6/2013

PROJECT INFORMATION

IN-SERVICE: 3/1/2018 In-service: Strategist will assume in-service at the 1st of the month.

UNIT TYPE: Combustion Turbine
 Summer Average Winter
[TRADE SECRET DATA BEGINS...]

NET CAPACITY: Maximum Capacity
[TRADE SECRET DATA BEGINS...] ...TRADE SECRET DATA ENDS]

EXPECTED CAPACITY FACTOR Expected Capacity Factor: Based on Strategist simulations.

NEW UNIT CAPITAL COSTS \$thousands,

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
 	[TRADE SECRET DATA BEGINS...]									
	...TRADE SECRET DATA ENDS]									

Capital Notes:

Initial Capital: Capital costs should include everything "inside the fence".

ON-GOING CAPITAL COSTS 2013 dollars, \$thousands, or % of initial capital

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
 	[TRADE SECRET DATA BEGINS...]									
	...TRADE SECRET DATA ENDS]									

On-Going Capital Notes:

On-Going Capital: Annual capital expenditures for regular maintenance and overhauls.

TRANSMISSION CAPITAL COSTS: 2013 dollars, \$thousands, or % of initial capital

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
 	[TRADE SECRET DATA BEGINS...]									
	...TRADE SECRET DATA ENDS]									

Transmission Capital Notes:

Grid Upgrade Costs: The cost of additional grid upgrades needed to support the incremental generation of this project.

UNIT DEPRECIATION: [TRADE SECRET DATA BEGINS...]

BOOK LIFE	
BOOK DEPRECIATION	
TAX LIFE	
TAX DEPRECIATION	

DECOMMISSIONING EXPENSE:

TRANSMISSION INVESTMENT DEPRECIATION:

BOOK LIFE	
BOOK DEPRECIATION	
TAX LIFE	
TAX DEPRECIATION	

OTHER CAPITAL RELATED INPUTS

AFUDC / CWIP: AFUDC / CWIP: This input should be coordinated with Rates and Resource Planning

PROPERTY TAX RATE: PROPERTY TAXES : Property Tax inputs should be coordinated with Tax Services
...TRADE SECRET DATA ENDS]

Strategist Assumptions Documentation - Unit Performance & Cost Estimate

PROJECT: Black Dog Unit 6 CT (2019)

PREPARED BY: Greg Ford/Elizabeth Karels
4/9/2013

PROJECT/UNIT DESCRIPTION AND SOURCE DOCUMENTATION:

[TRADE SECRET DATA BEGINS...]

...TRADE SECRET ENDS]

IN-SERVICE DATE: 3/1/2019
 RETIREMENT DATE: 12/31/2053

In-service: Strategist will assume in-service at the 1st of the month.
Retirement: Strategist will assume retirement on the last day of the month.

NET CAPACITY :

		Summer	Average	Winter
Ambient Conditions Assumptions		95F	59 F	-5 F
		[TRADE SECRET DATA BEGINS...]		
Minimum Capacity	(50%)			
Load Point 2	(60%)			
Load Point 3	(70%)			
Load Point 4	(80%)			
Load Point 5	(90%)			
Maximum Capacity	(100%)			
		...TRADE SECRET DATA ENDS]		

Minimum Capacity: For a combined cycle unit it should be the minimum generation in combined cycle configuration. Not CT only using bypass stacks.
Maximum Capacity: Should be the maximum net generation without duct firing.
Maximum With Ducts:
Emergency Capacity: Strategist will not dispatch a unit at this level, but the unit will be accredited this capacity for loads and resource calculations. This input is commonly used for coal plants with "gas topping".

HEAT RATE:

		Average
		[TRADE SECRET DATA BEGINS...]
Minimum Capacity	(50%)	
Load Point 2	(60%)	
Load Point 3	(70%)	
Load Point 4	(80%)	
Load Point 5	(90%)	
Maximum Capacity	(100%)	
Maximum With Ducts		
		...TRADE SECRET DATA ENDS]

Heat Rate: Strategist can only model a single heat rate curve per unit. For peakers a summer heat rate profile is appropriate. For intermediate and baseload plants the average conditions are appropriate.
Load Points: Please provide as many as available.

Variable O&M: Typically chemicals and water only.
 Strategist will use an inflation rate, based on non-labor rates to escalate this value.

VARIABLE O&M:

[TRADE SECRET DATA BEGINS...]

Ramp Rate:
 Start Time:

[TRADE SECRET DATA ENDS]

Ramp Rate: Strategist will use this input to calculate the units contribution to spinning reserve.
Start Time: This input used to determine quick start ability of unit.

FIXED O&M:

2013 dollars, \$thousands

2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
[TRADE SECRET DATA BEGINS...]									
...TRADE SECRET DATA ENDS]									

Fixed O&M: This cost should primarily be annual labor expenses. Strategist will use an inflation rate, based on labor rates to escalate this value.

MAINTENANCE SCHEDULE

Weeks / Year

2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
[TRADE SECRET DATA BEGINS...]									
...TRADE SECRET DATA ENDS]									

FORCED OUTAGE RATE:

[TRADE SECRET DATA BEGINS...]

Maintenance Schedule: This yearly profile should reflect periodic major outages.
Forced Outage Rate: A simple % that reflects the probability of unplanned outages.

INITIAL CAPITAL COSTS:

[TRADE SECRET DATA ENDS]
 \$thousands

2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
[TRADE SECRET DATA BEGINS...]									
...TRADE SECRET DATA ENDS]									

Capital Notes: estimate in nominal dollars to COD in March 2017

Initial Capital: Capital costs should include everything "inside the fence". Transmission costs should include interconnection but not other grid upgrades (these will be provided by Transmission). Gas costs should include interconnection but not additional pipeline upgrades that will be paid by either Xcel's gas operations or another gas company.

Strategist Assumptions Documentation - Transmission Project/Grid Upgrades

PROJECT: **Black Dog Unit 6 CT (2019)** PREPARED BY: **Greg Ford/Elizabeth Karels**
4/9/2013

PROJECT DESCRIPTION AND SOURCE DOCUMENTATION:
 [TRADE SECRET DATA BEGINS...]
 [Redacted Box]
 ...TRADE SECRET ENDS]

PROJECT INFORMATION
 IN-SERVICE: **3/1/2019** In-service: Strategist will assume in-service at the 1st of the month.
 Summer Average Winter
 [TRADE SECRET DATA BEGINS...]
 NET CAPACITY :

Maximum Capacity			
Maximum With Ducts			
Emergency Capacity			

 Maximum Capacity: Should be the maximum net generation without duct firing.
 Maximum With Ducts: Maximum with duct firing
 Emergency Capacity: This input is commonly used for coal plants with "gas topping".
 [TRADE SECRET DATA BEGINS...]
 EXPECTED CAPACITY FACTOR [Redacted Box] Expected Capacity Factor: Based on Strategist simulations.

INITIAL CAPITAL COSTS: [Redacted Box] \$thousands
 ...TRADE SECRET DATA ENDS]

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]

 [TRADE SECRET DATA BEGINS...]
 ...TRADE SECRET DATA ENDS]
 Capital Notes: Nominal Dollars
 Grid Upgrade Costs: The capital costs for additional grid upgrades needed to support the incremental generation of this project.

ON-GOING ANNUAL EXPENSES: 2013 dollars, \$thousands, or % of initial capital
 [Redacted Box]
 On-Going Expenses Notes:

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]

 [TRADE SECRET DATA BEGINS...]
 ...TRADE SECRET DATA ENDS]
 On-Going Costs: Annual cost for maintenance of proposed transmission infrastructure.

Stratelist Assumptions Documentation - Gas Supply

PROJECT: Black Dog Unit 6 CT (2019) PREPARED BY: Richard Derryberry
2/5/2013

PROJECT DESCRIPTION AND SOURCE DOCUMENTATION:
[TRADE SECRET DATA BEGINS...]
...TRADE SECRET ENDS]

PROJECT INFORMATION: *if additional project data is needed please contact Resource Planning Analytics*
 IN-SERVICE: 3/1/2019 In-service: Stratelist will assume in-service at the 1st of the month.

Summer Average Winter
 [TRADE SECRET DATA BEGINS...]

NET CAPACITY :

Maximum Capacity			
Maximum With Ducts			

Maximum Capacity: Should be the maximum net generation without duct firing.
Maximum With Ducts: Maximum with duct firing
...TRADE SECRET DATA ENDS]

Average
 [TRADE SECRET DATA BEGINS...]

HEAT RATE:

Maximum Capacity	
Maximum With Ducts	

Expected Heat Rate: This value multiplied by the maximum capacity equals the peak fuel consumption (mmbtu/hour)
...TRADE SECRET DATA ENDS]

EXPECTED CAPACITY FACTOR [TRADE SECRET DATA BEGINS...] Expected Capacity Factor: Based on Stratelist simulations.
...TRADE SECRET DATA ENDS]

ANNUAL FIXED FUEL CHARGE 2013 dollars, \$thousands

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
	[TRADE SECRET DATA BEGINS...]									

...TRADE SECRET DATA ENDS]

Fixed Charge Notes:

Annual Fixed Charge: Annual cost that do not vary by volume of gas burned in a given year.

VOLUMETRIC CHARGE: 2013 dollars, \$/mmbtu

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Supply Point	NNG	NNG	NNG	NNG	NNG	NNG	NNG	NNG	NNG	NNG
	[TRADE SECRET DATA BEGINS...]									
Fuel %										
Variable - \$/Dth										
Variable - \$/Dth										

...TRADE SECRET DATA ENDS]

Volumetric Charge Notes:

Volumetric Charge: The cost to deliver fuel to the unit from a priced distribution hub (Ventura, CGI, Henry, etc). Please be sure to note the hub used in calculating this value.

Strategist Assumptions Documentation - Capital Asset Accounting

PROJECT: Black Dog Unit 6 CT (2019) PREPARED BY: Elizabeth Karels
3/6/2013

PROJECT INFORMATION

IN-SERVICE: 3/1/2019 In-service: Strategist will assume in-service at the 1st of the month.

UNIT TYPE: Combustion Turbine
 Summer Average Winter
[TRADE SECRET DATA BEGINS...]

NET CAPACITY: Maximum Capacity
[TRADE SECRET DATA BEGINS...] ...TRADE SECRET DATA ENDS]

EXPECTED CAPACITY FACTOR Expected Capacity Factor: Based on Strategist simulations.

NEW UNIT CAPITAL COSTS \$thousands,

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
 	[TRADE SECRET DATA BEGINS...]									
 	...TRADE SECRET DATA ENDS]									

Capital Notes:

Initial Capital: Capital costs should include everything "inside the fence".

ON-GOING CAPITAL COSTS 2013 dollars, \$thousands, or % of initial capital

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
 	[TRADE SECRET DATA BEGINS...]									
 	...TRADE SECRET DATA ENDS]									

On-Going Capital Notes:

On-Going Capital: Annual capital expenditures for regular maintenance and overhauls.

TRANSMISSION CAPITAL COSTS: 2013 dollars, \$thousands, or % of initial capital

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
 	[TRADE SECRET DATA BEGINS...]									
 	...TRADE SECRET DATA ENDS]									

Transmission Capital Notes:

Grid Upgrade Costs: The cost of additional grid upgrades needed to support the incremental generation of this project.

UNIT DEPRECIATION: [TRADE SECRET DATA BEGINS...]

BOOK LIFE	
BOOK DEPRECIATION	
TAX LIFE	
TAX DEPRECIATION	

DECOMMISSIONING EXPENSE:

TRANSMISSION INVESTMENT DEPRECIATION:

BOOK LIFE	
BOOK DEPRECIATION	
TAX LIFE	
TAX DEPRECIATION	

OTHER CAPITAL RELATED INPUTS

AFUDC / CWIP: AFUDC / CWIP: This input should be coordinated with Rates and Resource Planning

PROPERTY TAX RATE: PROPERTY TAXES : Property Tax inputs should be coordinated with Tax Services
...TRADE SECRET DATA ENDS]

		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027																																																																																																
ON-GOING CAPITAL COST: 2013 dollars, \$thousands, or % of initial capital <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <i>On-Going Capital Notes: 2013 Dollars; escalation should be applied at approved Corporate rates</i> </div>	[TRADE SECRET DATA BEGINS...]																																																																																																										
	...TRADE SECRET DATA ENDS]																																																																																																										
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Average Emission Rates																																																																																																											
Emissions Data : lbs/mmBtu	[TRADE SECRET DATA BEGINS...]																																																																																																										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 15%;">SOx</td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td></tr> <tr><td>NOx</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>CO2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>HG</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>PM_10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>CO</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>VOC</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Pb</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	SOx												NOx												CO2												HG												PM_10												CO												VOC												Pb												Emissions Data: Data should reflect average emission rates stated in lbs/mmBtu using the units primary fuel. If lbs/mmBtu is not available Strategist does have the ability to model emissions as lbs/MWh. Based on full load data										
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Strategist Assumptions Documentation - Transmission Project/Grid Upgrades											
PROJECT:	Hankinson 1 CT (2018)	PREPARED BY:	Greg Ford/Elizabeth Karels 4/9/2013								
PROJECT DESCRIPTION AND SOURCE DOCUMENTATION:											
[TRADE SECRET DATA BEGINS...]											
[TRADE SECRET DATA ENDS]											
PROJECT INFORMATION											
IN-SERVICE:	3/1/2018	In-service: Strategist will assume in-service at the 1st of the month.									
		Summer	Average	Winter							
[TRADE SECRET DATA BEGINS...]											
NET CAPACITY :	Maximum Capacity				Maximum Capacity: Should be the maximum net generation without duct firing. Maximum With Ducts: Maximum with duct firing Emergency Capacity: This input is commonly used for coal plants with "gas topping".						
	Maximum With Ducts										
	Emergency Capacity										
[TRADE SECRET DATA ENDS]											
EXPECTED CAPACITY FACTOR		Expected Capacity Factor: Based on Strategist simulations.									
INITIAL CAPITAL COSTS:											
		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
[TRADE SECRET DATA BEGINS...]											
[TRADE SECRET DATA ENDS]											
	<i>Capital Notes: Nominal Dollars</i>	Grid Upgrade Costs: The capital costs for additional grid upgrades needed to support the incremental generation of this project.									
ON-GOING ANNUAL EXPENSES:											
	<i>2013 dollars, \$thousands, or % of initial capital</i>	year	year	year	year	year	year	year	year	year	
[TRADE SECRET DATA BEGINS...]											
[TRADE SECRET DATA ENDS]											
	<i>On-Going Expenses Notes: No ongoing expenses expected.</i>	On-Going Costs: Annual cost for maintenance of proposed transmission infrastructure.									

Strategist Assumptions Documentation - Gas Supply																																		
PROJECT: Hankinson 1 CT (2018)	PREPARED BY: Richard Derryberry 4/4/2014																																	
PROJECT DESCRIPTION AND SOURCE DOCUMENTATION: <div style="border: 1px solid black; height: 40px; margin: 5px 0;"></div> <div style="text-align: right; font-size: small;">...TRADE SECRET ENDS]</div>																																		
PROJECT INFORMATION: <i>if additional project data is needed please contact Resource Planning Analytics</i>																																		
IN-SERVICE: 3/1/2018	In-service: Strategist will assume in-service at the 1st of the month. <div style="display: flex; justify-content: space-around; font-size: small;"> Summer Average Winter </div>																																	
NET CAPACITY :	<table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <tr> <td style="width: 30%;">Maximum Capacity</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td>Maximum With Ducts</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <div style="margin-top: 5px; font-size: small;"> Maximum Capacity: Should be the maximum net generation without duct firing. Maximum With Ducts: Maximum with duct firing </div>	Maximum Capacity								Maximum With Ducts																								
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HEAT RATE:	<table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <tr> <td style="width: 30%;">Maximum Capacity</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td>Maximum With Ducts</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <div style="margin-top: 5px; font-size: small;"> Expected Heat Rate: This value multiplied by the maximum capacity equals the peak fuel consumption (mmbtu/hour). Please see Energy Supply data for additional capacity and heat rate data. </div>	Maximum Capacity							Maximum With Ducts																									
Maximum Capacity																																		
Maximum With Ducts																																		
EXPECTED CAPACITY FACTOR	<table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <tr> <td style="width: 30%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> </table> <div style="margin-top: 5px; font-size: small;"> Expected Capacity Factor: Based on Strategist simulations. </div>																																	
INITIAL CAPITAL COSTS:	<table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <tr> <td style="width: 30%;"></td> <td style="width: 5%;">2014</td> <td style="width: 5%;">2015</td> <td style="width: 5%;">2016</td> <td style="width: 5%;">2017</td> <td style="width: 5%;">2018</td> <td style="width: 5%;">2019</td> <td style="width: 5%;">2020</td> <td style="width: 5%;">2021</td> <td style="width: 5%;">2022</td> <td style="width: 5%;">2023</td> </tr> <tr> <td></td> <td colspan="10" style="text-align: center;">[TRADE SECRET DATA BEGINS...]</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <div style="margin-top: 5px; font-size: small;"> <i>Capital Notes: Nominal dollars</i> </div>		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		[TRADE SECRET DATA BEGINS...]																				
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Strategist Assumptions Documentation - Capital Asset Accounting

PROJECT: Hankinson 1 CT (2018) PREPARED BY: Elizabeth Karels
3/7/2013

PROJECT INFORMATION

IN-SERVICE: 3/1/2018 In-service: Strategist will assume in-service at the 1st of the month.

UNIT TYPE: Combustion Turbine
 Summer Average Winter
[TRADE SECRET DATA BEGINS...]

NET CAPACITY: Maximum Capacity
[TRADE SECRET DATA BEGINS...] ...TRADE SECRET DATA ENDS]

EXPECTED CAPACITY FACTOR Expected Capacity Factor: Based on Strategist simulations.

NEW UNIT CAPITAL COSTS \$thousands,

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	[TRADE SECRET DATA BEGINS...]									
	...TRADE SECRET DATA ENDS]									

Capital Notes:

Initial Capital: Capital costs should include everything "inside the fence".

ON-GOING CAPITAL COSTS 2013 dollars, \$thousands, or % of initial capital

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
	[TRADE SECRET DATA BEGINS...]									
	...TRADE SECRET DATA ENDS]									

On-Going Capital Notes:

On-Going Capital: Annual capital expenditures for regular maintenance and overhauls.

TRANSMISSION CAPITAL COSTS: 2013 dollars, \$thousands, or % of initial capital

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	[TRADE SECRET DATA BEGINS...]									
	...TRADE SECRET DATA ENDS]									

Transmission Capital Notes:

Grid Upgrade Costs: The cost of additional grid upgrades needed to support the incremental generation of this project.

UNIT DEPRECIATION: [TRADE SECRET DATA BEGINS...]

BOOK LIFE

BOOK DEPRECIATION

TAX LIFE

TAX DEPRECIATION

DECOMMISSIONING EXPENSE:

TRANSMISSION INVESTMENT DEPRECIATION:

BOOK LIFE

BOOK DEPRECIATION

TAX LIFE

TAX DEPRECIATION

OTHER CAPITAL RELATED INPUTS

AFUDC / CWIP: AFUDC / CWIP: This input should be coordinated with Rates and Resource Planning

PROPERTY TAX RATE: PROPERTY TAXES : Property Tax inputs should be coordinated with Tax Services
...TRADE SECRET DATA ENDS]

Strategist Assumptions Documentation - Unit Performance & Cost Estimate

PROJECT: Hankinson 2 CT (2019)

PREPARED BY: Greg Ford/Elizabeth Karels
4/8/2013

PROJECT/UNIT DESCRIPTION AND SOURCE DOCUMENTATION:

[TRADE SECRET DATA BEGINS...]

...TRADE SECRET ENDS]

IN-SERVICE DATE: 2/1/2019
 RETIREMENT DATE: 12/31/2053

In-service: Strategist will assume in-service at the 1st of the month.
Retirement: Strategist will assume retirement on the last day of the month.

NET CAPACITY :

		Summer	Average	Winter
Ambient Conditions Assumptions		88F	41 F	-5 F
		[TRADE SECRET DATA BEGINS...]		
Minimum Capacity	(50%)			
Load Point 2	(60%)			
Load Point 3	(70%)			
Load Point 4	(80%)			
Load Point 5	(90%)			
Maximum Capacity	(100%)			
		...TRADE SECRET DATA ENDS]		

Minimum Capacity: For a combined cycle unit it should be the minimum generation in combined cycle configuration. Not CT only using bypass stacks.
Maximum Capacity: Should be the maximum net generation without duct firing.
Maximum With Ducts:
Emergency Capacity: Strategist will not dispatch a unit at this level, but the unit will be accredited this capacity for loads and resource calculations. This input is commonly used for coal plants with "gas topping".

HEAT RATE:

		Average
		[TRADE SECRET DATA BEGINS...]
Minimum Capacity	(50%)	
Load Point 2	(60%)	
Load Point 3	(70%)	
Load Point 4	(80%)	
Load Point 5	(90%)	
Maximum Capacity	(100%)	
Maximum With Ducts		
		...TRADE SECRET DATA ENDS]

Heat Rate: Strategist can only model a single heat rate curve per unit. For peakers a summer heat rate profile is appropriate. For intermediate and baseload plants the average conditions are appropriate.
Load Points: Please provide as many as available.

Variable O&M: Typically chemicals and water only.
 Strategist will use a inflation rate, based on non-labor rates to escalate this value.

VARIABLE O&M:

[TRADE SECRET DATA BEGINS...]

Ramp Rate:

[TRADE SECRET DATA BEGINS...]

Start Time:

[TRADE SECRET DATA BEGINS...]

Ramp Rate: Strategist will use this input to calculate the units contribution to spinning reserve.
Start Time: This input used to determine quick start ability of unit.

FIXED O&M:

2013 dollars, \$thousands

2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
[TRADE SECRET DATA BEGINS...]									
...TRADE SECRET DATA ENDS]									

Fixed O&M: This cost should primarily be annual labor expenses. Strategist will use an inflation rate, based on labor rates to escalate this value.

MAINTENANCE SCHEDULE

Weeks / Year

2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
[TRADE SECRET DATA BEGINS...]									
...TRADE SECRET DATA ENDS]									

FORCED OUTAGE RATE:

[TRADE SECRET DATA BEGINS...]

Maintenance Schedule: This yearly profile should reflect periodic major outages.
Forced Outage Rate: A simple % that reflects the probability of unplanned outages.

INITIAL CAPITAL COSTS:

[TRADE SECRET DATA BEGINS...]
 \$thousands

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
[TRADE SECRET DATA BEGINS...]									
...TRADE SECRET DATA ENDS]									

Capital Notes: estimate in nominal dollars to COD in March 2017

Initial Capital: Capital costs should include everything "inside the fence". Transmission costs should include interconnection but not other grid upgrades (these will be provided by Transmission). Gas costs should include interconnection but not additional pipeline upgrades that will be paid by either Xcel's gas operations or another gas company.

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028																
ON-GOING CAPITAL COST: 2013 dollars, \$thousands, or % of initial capital <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <i>On-Going Capital Notes: 2013 Dollars; escalation should be applied at approved Corporate rates</i> </div>	[TRADE SECRET DATA BEGINS...]																									
	...TRADE SECRET DATA ENDS]																									
On-Going Capital: Annual capital expenditures for regular maintenance and overhauls.																										
Average Emission Rates																										
Emissions Data : lbs/mmBtu	[TRADE SECRET DATA BEGINS...]																									
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 100px;">SOx</td><td style="width: 100px;"></td></tr> <tr><td>NOx</td><td></td></tr> <tr><td>CO2</td><td></td></tr> <tr><td>HG</td><td></td></tr> <tr><td>PM_10</td><td></td></tr> <tr><td>CO</td><td></td></tr> <tr><td>VOC</td><td></td></tr> <tr><td>Pb</td><td></td></tr> </table>	SOx		NOx		CO2		HG		PM_10		CO		VOC		Pb		Emissions Data: Data should reflect average emission rates stated in lbs/mmBtu using the units primary fuel. If lbs/mmBtu is not available Strategist does have the ability to model emissions as lbs/MWh. Based on full load data									
SOx																										
NOx																										
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VOC																										
Pb																										
	...TRADE SECRET DATA ENDS]																									
Average Water Consumption																										
Water Usage gallons/MWh	[TRADE SECRET DATA BEGINS...]																									
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Water Consumption																										
	...TRADE SECRET DATA ENDS]																									

Strategist Assumptions Documentation - Transmission Project/Grid Upgrades											
PROJECT:	Hankinson 2 CT (2019)	PREPARED BY:	Greg Ford/Elizabeth Karels 4/8/2013								
PROJECT DESCRIPTION AND SOURCE DOCUMENTATION:											
[TRADE SECRET DATA BEGINS...]											
[TRADE SECRET DATA ENDS]											
PROJECT INFORMATION											
IN-SERVICE:	2/1/2019	In-service: Strategist will assume in-service at the 1st of the month.									
		Summer	Average	Winter							
[TRADE SECRET DATA BEGINS...]											
NET CAPACITY :	Maximum Capacity				Maximum Capacity: Should be the maximum net generation without duct firing. Maximum With Ducts: Maximum with duct firing Emergency Capacity: This input is commonly used for coal plants with "gas topping".						
	Maximum With Ducts										
	Emergency Capacity										
[TRADE SECRET DATA ENDS]											
EXPECTED CAPACITY FACTOR	[TRADE SECRET DATA BEGINS...]	Expected Capacity Factor: Based on Strategist simulations.									
INITIAL CAPITAL COSTS:											
	[TRADE SECRET DATA ENDS]	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	\$thousands	[TRADE SECRET DATA BEGINS...]									
	Capital Notes: Nominal Dollars	[TRADE SECRET DATA ENDS]									
Grid Upgrade Costs: The capital costs for additional grid upgrades needed to support the incremental generation of this project.											
ON-GOING ANNUAL EXPENSES:											
	2013 dollars, \$thousands, or % of initial capital	year	year	year	year	year	year	year	year	year	year
		[TRADE SECRET DATA BEGINS...]									
	On-Going Expenses Notes: No ongoing expenses expected.	[TRADE SECRET DATA ENDS]									
On-Going Costs: Annual cost for maintenance of proposed transmission infrastructure.											

Strategist Assumptions Documentation - Gas Supply																							
PROJECT: Hankinson 2 CT (2019)	PREPARED BY: Richard Derryberry 4/4/2014																						
PROJECT DESCRIPTION AND SOURCE DOCUMENTATION: <div style="border: 1px solid black; height: 40px; margin: 5px 0;"></div> <div style="text-align: right; font-size: small;">...TRADE SECRET ENDS]</div>																							
PROJECT INFORMATION: <i>if additional project data is needed please contact Resource Planning Analytics</i>																							
IN-SERVICE: 2/1/2019	In-service: Strategist will assume in-service at the 1st of the month. <div style="display: flex; justify-content: space-around; font-size: small;"> Summer Average Winter </div>																						
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EXPECTED CAPACITY FACTOR	<table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <div style="text-align: right; font-size: small;"> Expected Capacity Factor: Based on Strategist simulations. </div>																						
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Strategist Assumptions Documentation - Capital Asset Accounting

PROJECT: Hankinson 2 CT (2019) PREPARED BY: Elizabeth Karels
3/7/2013

PROJECT INFORMATION

IN-SERVICE: 2/1/2019 In-service: Strategist will assume in-service at the 1st of the month.

UNIT TYPE: Combustion Turbine Summer Average Winter
[TRADE SECRET DATA BEGINS...]

NET CAPACITY: Maximum Capacity
[TRADE SECRET DATA BEGINS...] ...TRADE SECRET DATA ENDS]

EXPECTED CAPACITY FACTOR Expected Capacity Factor: Based on Strategist simulations.

NEW UNIT CAPITAL COSTS \$thousands,

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Capital Notes:	[TRADE SECRET DATA BEGINS...]									
	...TRADE SECRET DATA ENDS]									

Initial Capital: Capital costs should include everything "inside the fence".

ON-GOING CAPITAL COSTS 2013 dollars, \$thousands, or % of initial capital

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
On-Going Capital Notes:	[TRADE SECRET DATA BEGINS...]									
	...TRADE SECRET DATA ENDS]									

On-Going Capital: Annual capital expenditures for regular maintenance and overhauls.

TRANSMISSION CAPITAL COSTS: 2013 dollars, \$thousands, or % of initial capital

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Transmission Capital Notes:	[TRADE SECRET DATA BEGINS...]									
	...TRADE SECRET DATA ENDS]									

Grid Upgrade Costs: The cost of additional grid upgrades needed to support the incremental generation of this project.

UNIT DEPRECIATION: [TRADE SECRET DATA BEGINS...]

BOOK LIFE	
BOOK DEPRECIATION	
TAX LIFE	
TAX DEPRECIATION	

DECOMMISSIONING EXPENSE:

TRANSMISSION INVESTMENT DEPRECIATION:

BOOK LIFE	
BOOK DEPRECIATION	
TAX LIFE	
TAX DEPRECIATION	

OTHER CAPITAL RELATED INPUTS

AFUDC / CWIP: AFUDC / CWIP: This input should be coordinated with Rates and Resource Planning

PROPERTY TAX RATE: PROPERTY TAXES : Property Tax inputs should be coordinated with Tax Services
...TRADE SECRET DATA ENDS]