

- Non Public Document – Contains Trade Secret Data  
 Public Document – Trade Secret Data Excised  
 Public Document

Xcel Energy

Docket No.: EL12-046

Response To: South Dakota Public  
Utilities Commission

Data Request No.

Requestor:

2-1

Date Received: July 30, 2012

---

Question:

Please refer to the direct testimony of Company witness Thomas Kramer on pages 38 – 39 regarding the Black Dog Generating Facility adjustment and work papers PF16.

- a) Please provide copies of work order authorizations.
- b) Provide a statement of status for the project, i.e., actual expenditures and projected expenditures by month, expected in-service date, etc.
- c) Please provide a detailed breakdown of the specific exhaust components and supporting equipment that are scheduled to be replaced. For each component, please provide a detailed description, amount spent to date, remaining expenditures, forecasted total costs, in-service date or projected in-service date, etc.
- d) Please provide revised PF16 workpapers to reflect actual costs incurred.
- e) Please provide the work paper that supports the property tax rate used on PF16-2.
- f) Does NSP anticipate any reductions in test year expenses as a result of less maintenance or operational efficiencies? Please explain.
- g) Does NSP expect to replace these components approximately every ten years? Please explain.

Response:

- a) See Attachment A to this response.
- b) Actual costs and projected expenditures are included in the updated work paper PF16-11 included as Attachment B to this response. The expected in-service date for the project is August 15, 2012.

- c) The major components are:
1. Exhaust Cylinder and new hardware;
  2. Exhaust Bearing
  3. Exhaust Manifold and support structure
  4. Exhaust Spacer
  5. New R4 Blades (required to fit new exhaust)
  6. New R4 Blade Ring (required to fit new R4 Blades)
- Actual costs and projected expenditures are included in the updated work paper PF16-11 included in response to part d below. Expected in-service date is August 15, 2012.
- d) Please see Attachment B for updated work papers PF16-1 through PF16-11 which reflect actual project costs through June, 2012.
- e) Please see Attachment C for a copy of the Actual Property Tax Rates work sheet that was used in the development of the revenue requirement for the Black Dog adjustment PF16. The work sheet was based upon the 2010 property tax information which was the most current available at the time.
- f) There will be no change in test year expenses due to this Project since any inspection or minor repairs would have been done by existing Plant personnel.
- g) This repair was necessary due to a design deficiency in the original component. The replaced component is expected to last the remaining life of the machine.

---

Preparer: Russell C. Girtz \ Thomas E. Kramer  
Title: Project Manager \ Principal Rate Analyst  
Department: ES Plant Projects Sherco \ Revenue Requirements – North  
Telephone: 763-261-3509 \ 612-330-5866  
Date: August 15, 2012

Capital Project Summary Document XCEL ENERGY - Engineering & Construction														
PLANT PROJ. No.	BUD.YR.	OPER. CO.	DATE SUBMITTED				MULTI-YEAR (Y/N) <input type="checkbox"/>				JDE BU NUMBER			
BDS0612	2012	NSP-MN	3/15/2011				ENVR REVIEW COMPLETE (Y/N) <input type="checkbox"/>							
PROJECT TITLE			START DATE				PVRR REVIEW COMPLETE (Y/N) <input checked="" type="checkbox"/>				JDE PARENT No.			
U5 CT Exhaust Replacement			9/1/2012				OUTAGE RELATED (Y/N) <input checked="" type="checkbox"/>				11486882			
			IN SERVICE DATE				PRIORITY		CBS PRIORITY		CBS REASON		ENV CODE	
			10/31/2012				Priority 2		3		REP			
PLANT NAME	PLANT CONTACT	UNIT	CLOSED DATE				CATEGORY		SYSTEM		SUBSYSTEM		FERC	CIP
Black Dog	John Friedrich	5	3/1/2013				Operational Exce		GT - Combustion		CB - Combustor Section		No	No
ANNUAL (1,000s)	PREVIOUS YRS.	2014	2015	2016	2017	2018	Project Total							
	\$0	\$0	\$0	\$0	\$0	\$0	\$3,994							
CURRENT YEAR (1,000s)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2012 TOTAL	
	0	0	0	0	0	150	1,076	50	300	2,168	200	0	\$3,944	
2ND YEAR (1,000s)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2013 TOTAL	
	0	50	0	0	0	0	0	0	0	0	0	0	\$50	

**DESCRIPTION:** Replace Black Dog Unit 5 CT exhaust cylinder assembly.

**JUSTIFICATION/NECESSITY (including risks associated with project):**

Black Dog has a Siemens model W501FD2 which was installed in 2001. For the past 4 years, the exhaust cylinder has experienced cracking in the inner and outer exhaust diffuser, strut support heat shields, and struts requiring extended outage time for repairs. This problem is a known industry issue for Siemens 501 CTs. Due to equipment age and extent of cracking, Siemens recommends replacement of the entire exhaust cylinder in the near future to avoid catastrophic failure of the CT.

**ALTERNATIVES:**

1. Do nothing and operate the unit to failure.
2. Continue to inspect and weld repair the exhaust cylinder assembly every 6 months hoping the unit does not fail due to embrittled metal.
3. Replace the entire exhaust section with a new complete assembly.

**FINANCIAL IMPACT (PVRR):**

**CAPITALIZATION CRITERIA (From Corporate Capitalization Policy):**

Meets capitalization guidelines for a complete assembly.

**LINKED DOCUMENTS (Environ. Review, Financial Report, Cost Estimate, Supporting Documents, Misc.)**

 <a href="#">Open Estimate (Constr_Details)</a>	 Environmental Checklist	 Financial Model Input & Results	 Project Schedule	 Additional Project Information	 Unit of Property Summary	 As Built Form	 CIP Screen Checklist
	 Document	 G:\ES-Chestnut\ CapitalProjectMgmt\C...	 Microsoft Project Document	 G:\ES-Chestnut\ CapitalProjectMgmt\C...	 R:\CapitalProjectMgmt\C...	 As Built Form	 CIP Screen Checklist XES 2.800_P01

<b>9/25/11+A1</b>		
<b>Change Order No.</b> 1	<b>Originator:</b> David Hildebrandt	<b>Control #:</b>
<b>Date:</b> 2/17/2011		

<b>PROJECT</b>			
<b>Plant:</b>	Black Dog	<b>Location:</b>	Burnsville, MN
<b>Name:</b>	U5 CT Exhaust Replacement	<b>XCEL Project #:</b>	BDS-0612

<b>JUSTIFICATION</b>	<b>Provide a reason for the change (ie labor, materials or engineering):</b>
<p>This Change Order is for a cost increase of \$10,226,000 from the original budget. The original one pager assumed that the exhaust cylinder would be replaced with in-kind exhaust cylinder. Through a financial analysis, it was determined that replacement with an upgraded SPEX exhaust cylinder offered the lowest operating cost over the remaining life of the unit. The SPEX components have a higher cost than the replacement in kind components. Due to additional lifting considerations, required replacement of the exhaust manifold and required replacement of the R4 blades, the installation costs of the SPEX are higher than the replacement of the components. Finally, additional preparation work is required to install the SPEX exhaust.</p>	

<b>SCOPE</b>	<b>The scope of this project is to be modified as follows:</b>
<p>The scope of the project was changed to install a SPEX exhaust system and perform a Major Inspection on the unit. Installation of the SPEX exhaust system also requires replacement of the exhaust manifold and supports, and the R4 turbine blades.</p>	

<b>SCHEDULE</b>	<b>Baseline</b>	<b>Revised Date</b>
<b>Project Start Date:</b>	September-12	February-12
<b>Construction Start Date:</b>	September-12	February-12
<b>In-Service Date:</b>	October-12	August-12
<b>Project Complete Date:</b>	March-13	November-12

<b>BUDGET</b>	<b>Materials</b>	<b>Construction</b>	<b>Indirects</b>	<b>Project Total</b>
<b>Original Authorized Budget</b>	\$0	\$3,963,666	\$30,334	\$3,994,000
<b>Previous Change Orders:</b>	\$0	\$0	\$0	\$0
<b>This Change Order:</b>	\$0	\$9,852,960	\$373,040	\$10,226,000
<b>Total Authorized Budget</b>	\$0	\$13,816,626	\$403,374	\$14,220,000

<b>PROJECT CASH FLOW</b>	<b>Base Project Budget</b>	<b>Proposed Project Budget</b>
1st Year (2012)	\$3,944,000	\$14,220,000
2nd Year (2013)	\$50,000	\$0
3rd Year (2014)	\$0	\$0
<b>OVERALL TOTAL</b>	<b>\$3,994,000</b>	<b>\$14,220,000</b>

<b>APPROVAL</b>	<b>Signature</b>	<b>Date</b>
<b>Project Lead</b>	David Hildebrandt	2/17/2012
<b>E&amp;C Regional Manager (if req'd)</b>		
<b>Plant Engineering Manager</b>	John Friedrich	2/27/2012
<b>Plant Director</b>	Jim Zyduck	2/28/2012
<b>Director, Plant Projects</b>	Roger Schluessel	2/28/2012

ACTUAL PROPERTY TAX RATES FOR PAY 2010

RATIO OF TAX TO TAXABLE INVESTMENT

MINNESOTA			
BY GEN PLT	COUNTY/CITY		RATE
(based on Real Estate)			
Black Dog	Dakota/Burnsville	E	1.088
Blue Lake	Scott/Shakopee	E	1.114
Granite City	Benton/St Cloud	E	1.441
High Bridge	Ramsey/St Paul	E	1.245
Inver Hills	Dakota/Inv Gr Hghts	E	1.043
King	Wash/Oak Pk Hghts	E	0.972
Maplewood Prop	Ramsey/Maplewood	G	1.615
Minnesota Val	Chippewa/Granite Falls	E	1.512
Monticello	Wright/Monticello	E	1.094
Prairie Island	Goodhue/Red Wing	E	1.150
Riverside	Hennepin/Mpls	E	1.248
Sherco	Sherburne/Becker	E	0.963
Sibley Propane	Dakota/Mendota Hghts	G	1.362
Wescott Prop	Dakota/Inv Gr Hghts	G	1.544
West Faribault	Rice/Warsaw Twp	E	0.814
Wilmarth	Blue Earth/Mankato	E	1.128
Minnesota	Electric		1.214
Minnesota	Gas		2.089

MINNESOTA			
COUNTIES	ELEC RATE	GAS RATE	TOT RATE
(based on Personal Property)			
Anoka	1.442	1.347	1.422
Becker	0.971	0.000	0.971
Beltrami	1.224	0.000	1.224
Benton	1.507	1.718	1.579
Blue Earth	1.264	2.784	1.268
Brown	1.102	0.000	1.102
Carver	1.381	1.594	1.387
Cass	0.000	0.996	0.996
Chippewa	1.417	0.000	1.417
Chisago	1.448	1.554	1.485
Clay	1.334	1.018	1.111
Crow Wing	0.000	1.062	1.062
Dakota	1.358	1.474	1.388
Dodge	1.385	0.000	1.385
Douglas	1.250	0.000	1.250
Faribault	1.152	0.000	1.152
Freeborn	1.415	0.000	1.415
Goodhue	1.379	1.586	1.417
Hennepin	1.434	1.543	1.434
Houston	1.505	0.000	1.505
Isanti	0.728	0.000	0.728

MINNESOTA	ELEC RATE	GAS RATE	TOT RATE
Isanti	0.000	1.293	1.293
Itasca	1.093	0.000	1.093
Jackson	1.099	0.000	1.099
Kandiyohi	1.338	1.439	1.367
Koochiching	1.103	0.000	1.103
Lac Qui Parle	0.856	0.000	0.856
Lake/Woods	1.573	0.000	1.573
Le Sueur	1.075	1.067	1.073
Lincoln	1.124	0.000	1.124
Lyon	1.391	0.000	1.391
McLeod	1.417	0.895	1.414
Martin	0.890	0.000	0.890
Meeker	1.450	1.383	1.436
Morrison	1.284	1.183	1.184
Mower	1.153	0.000	1.153
Murray	1.227	0.000	1.227
Nicollet	1.276	0.000	1.276
Nobles	1.133	0.000	1.133
Norman	0.892	0.000	0.892
Olmsted	1.453	0.000	1.453
Pine	1.098	0.000	1.098
Pipestone	1.318	0.000	1.318
Polk	1.085	1.085	1.085
Pope	1.277	0.000	1.277
Ramsey	1.507	1.507	1.507
Redwood	1.479	0.000	1.479
Renville	1.272	0.000	1.272
Rice	1.273	1.353	1.239
Rock	0.906	0.000	0.906
Roseau	1.559	0.000	1.559
Scott	1.203	1.682	1.328
Sherburne	1.623	1.013	1.332
Sibley	1.506	0.970	1.476
St Louis	1.251	0.000	1.251
Stearns	1.375	1.375	1.375
Steele	1.348	0.000	1.348
Todd	1.255	0.000	1.255
Wabasha	1.362	1.362	1.362
Waseca	1.225	0.000	1.225
Washington	1.355	1.355	1.355
Watsonwan	1.207	0.000	1.207
Wilkin	1.048	0.000	1.048
Winona	1.305	1.305	1.305
Wright	1.323	1.457	1.334
Yellow Med	1.350	0.000	1.350
Minn State	1.377	1.411	1.384

NO DAK COUNTIES	ELEC RATE	GAS RATE	TOT RATE
Barnes-SP	0.000	0.744	0.744
Cass-SP	1.103	1.099	1.101
Cass-RE	1.567	0.000	1.567
Grand Forks-S	1.184	1.147	1.172
McHenry-SP	0.682	0.000	0.682
Pembina-SP	0.840	0.000	0.840
Pierce-SP	1.276	0.000	1.276
Richland-SP	1.261	0.000	1.261
Rolette-SP	1.592	0.000	1.592
Traill-SP	1.087	0.000	1.087
Ward-SP	0.931	0.000	0.931
No Dak-RE	1.567	0.000	1.567
No Dak-SP	1.110	1.114	1.111

SO DAK COUNTIES	ELEC RATE	GAS RATE	TOT RATE
Brookings SP	0.789	0.000	0.789
Davison-SP	0.000	0.000	0.000
Hanson-SP	1.010	0.000	1.010
Hutchinson-SP	0.919	0.000	0.919
Lake-SP	0.901	0.000	0.901
Lincoln-SP	0.879	0.000	0.879
McCook-SP	0.951	0.000	0.951
Miner-SP	0.986	0.000	0.986
Minnehaha-SP	0.784	0.000	0.784
Minnehaha-RE	1.518	0.000	1.518
Moody-SP	0.814	0.000	0.814
Sanborn-SP	0.835	0.000	0.835
Turner-SP	1.201	0.000	1.201
So Dak-RE	1.518	0.000	1.518
So Dak-SP	0.800	0.000	0.800

SP = State Property  
RE = Real Estate

Personal Property includes transmission lines and distribution system. When estimating taxes in North and South Dakota, use the State Property for the appropriate county. THESE RATES ARE SUBJECT TO CHANGE.

Property Tax Assumption  
2010

- Non Public Document – Contains Trade Secret Data  
 Public Document – Trade Secret Data Excised  
 Public Document

Xcel Energy

Docket No.: EL12-046

Response To: SDPUC

Data Request No.

Requestor: South Dakota Public  
Utilities Commission

5-12

Date Received: August 16, 2012

**SUPPLEMENT**

---

Question:

Please refer to “SDPUC-2-001-Att B.xls” provided by the Company in response to DR 2-1 (b).

- a. Please provide revised PF16 work papers to reflect actual costs incurred, removing all projected expenditures. Please provide these work papers after the project has been placed in service.
- b. Please provide the actual date that the plant addition was placed in service.

Response:

This project has been placed in service in August 2012. The information required to update work paper PF16 will not be available until after the August financial books for the Company have been processed and closed. An expected update would not be available until mid-September.

**SUPPLEMENT:**

Please see Attachment A to this response.

---

Response By: Thomas E. Kramer

Title: Principal Rate Analyst

Department: Revenue Requirements – North

Telephone: 612-330-5866

Date: September 5, 2012

**SUPPLEMENT:** September 27, 2012



**Northern States Power, a Minnesota corporation**  
**Annual Revenue Requirement**  
**11486882 BDS5C CT Exhaust Replacement - With Actual Costs Thru August**  
**2011 Test Year South Dakota Electric Rate Case - 2011 Rev Requirement**  
**(000's)**

Revised Work Paper PF16-10

**Rate Analysis**

	Total Company	SD Jurisdiction
Plant Investment	-	-
Depreciation Reserve	-	-
CWIP	-	-
Accumulated Deferred Taxes	-	-
Average Rate Base	-	-
Tax Preferenced Items:		
Tax Depreciation & Removal Expense	-	-
Avoided Tax Interest	-	-
Debt Return	-	-
Equity Return	-	-
Current Income Tax Requirement	-	-
Book Depreciation	-	-
Annual Deferred Tax	-	-
ITC Flow Thru	-	-
AFUDC Expenditure	-	-
Property Taxes	-	-
<b>Total Revenue Requirements</b>	-	-

Last Authorized			
Capital Structure	Rate	Ratio	Weighted Cost
Long Term Debt	6.1300%	46.9600%	2.8800%
Short Term Debt	0.0000%	0.0000%	0.0000%
Preferred Stock	0.0000%	0.0000%	0.0000%
Common Equity	9.2500%	53.0400%	4.9100%
<b>Required Rate of Return</b>			<b>7.7900%</b>
<b>Tax Rate (SD)</b>	<b>35.0000%</b>		

Ave RB \* Weighted Cost of St & LT Debt  
Ave RB \* Weighted Cost of Equity  
(Eq Ret+Bk Depre+Def Tx+ITC-Tax Depre-ADUDC+Avoid Tax)\* T/(1-T)

Dt Ret+Eq Ret+Cur Tax+Bk Depre+Def Tax+ITC+ADUDC+Prop Tax

Northern States Power, a Minnesota corporation  
2011 Test-Year Actual  
11486882 BDS5C CT Exhaust Replacement - With Actual Costs Thru August

Revised Work Papers PF16-6 and PF16-7

Property Tax Rate	0.0000%
Demand Prod SD Jur %	5.7712%
Demand MN Co %	83.8019%
South Dakota Post I/A	4.8364%

**CWIP (Not Allowed in SD)**

	Total Company		Total Company after IA		SD Jurisdiction	
	BOY	EOY	BOY	EOY	BOY	EOY
Production	-	-	-	-	-	-
COSS Adj (000's)	-	-	-	-	-	-
<b>Plant</b>						
Production	-	-	-	-	-	-
COSS Adj (000's)	-	-	-	-	-	-
<b>Reserve</b>						
Production	-	-	-	-	-	-
COSS Adj (000's)	-	-	-	-	-	-
<b>Accumulated Deferred</b>						
Production	(5.00)	(5.00)	(4.19)	(4.19)	(0.24)	(0.24)
COSS Adj (000's)	-	-	-	-	-	-

**Book Depreciation**

	Total Company		Total Company after IA		SD Jurisdiction	
	Annual	Annual	Annual	Annual	Annual	Annual
Production	-	-	-	-	-	-
COSS Adj (000's)	-	-	-	-	-	-

**Annual Deferred**

	Total Company		Total Company after IA		SD Jurisdiction	
	Annual	Annual	Annual	Annual	Annual	Annual
Production	(9.11)	(9.11)	(7.63)	(7.63)	(0.44)	(0.44)
COSS Adj (000's)	-	-	-	-	-	-

**Tax Depreciation**

	Total Company		Total Company after IA		SD Jurisdiction	
	Annual	Annual	Annual	Annual	Annual	Annual
Production	-	-	-	-	-	-
COSS Adj (000's)	-	-	-	-	-	-

**AFUDC (Not allowed in SD)**

	Total Company		Total Company after IA		SD Jurisdiction	
	Annual	Annual	Annual	Annual	Annual	Annual
Production	-	-	-	-	-	-
COSS Adj (000's)	-	-	-	-	-	-

**Avoided Tax**

	Total Company		Total Company after IA		SD Jurisdiction	
	Annual	Annual	Annual	Annual	Annual	Annual
Production	53.12	53.12	44.52	44.52	2.57	2.57
COSS Adj (000's)	-	-	-	-	-	-

**Property Tax**

	Total Company		Total Company after IA		SD Jurisdiction	
	Annual	Annual	Annual	Annual	Annual	Annual
Production	-	-	-	-	-	-
COSS Adj (000's)	-	-	-	-	-	-

Northern States Power, a Minnesota corporation  
11486882 BDS5C CT Exhaust Replacement - With Actual Costs Thru August  
Revenue Requirement Calculation Inputs

Revised Work Paper PF16-11

Project Identification Information			CWIP/RWIP					Plant In-service				Depreciation Reserve				Tax Depreciation				Deferred Taxes			RWIP							
Grandparent or Parent	Description	Functional Use	Beginning	(CWIP) Expenditures	AFUDC Debt	AFUDC Equity	Closings	Ending	Beginning	Additions	Retirements	Ending	Beginning	Provision	(RWIP) Salvage/Removal	Retirements	Ending	Tax Composite (16)	Federal Tax Depreciation (5)	State Tax Depreciation (32)	Avoided Tax	Beginning	Annual	Ending	Beginning	Spend	Closing	Ending		
<b>As Reported by Capital Asset Accounting</b>																														
<b>Related Items 2010-2011</b>																														
11486882	BDS_Black Dog	Electric Other Production Plant																												
2010	December		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2011	January		-	-	-	-	-	-	-	-	-	-	252	-	-	-	-	-	-	-	-	-	(1)	(1)	(1)	-	-	-	-	
	February		-	-	-	-	-	-	-	-	-	-	251	-	-	-	-	-	-	-	-	(1)	(1)	(2)	-	-	-	-		
	March		-	-	-	-	-	-	-	-	-	-	250	-	-	-	-	-	-	-	-	(2)	(1)	(2)	-	-	-	-		
	April		-	-	-	-	-	-	-	-	-	-	249	-	-	-	-	-	-	-	-	(2)	(1)	(3)	-	-	-	-		
	May		-	-	-	-	-	-	-	-	-	-	248	-	-	-	-	-	-	-	-	(3)	(1)	(4)	-	-	-	-		
	June		-	-	-	-	-	-	-	-	-	-	247	-	-	-	-	-	-	-	-	(4)	(1)	(5)	-	-	-	-		
	July		-	-	-	-	-	-	-	-	-	-	246	-	-	-	-	-	-	-	-	(5)	(1)	(5)	-	-	-	-		
	August		-	-	-	-	-	-	-	-	-	-	245	-	-	-	-	-	-	-	-	(5)	(1)	(6)	-	-	-	-		
	September		-	-	-	-	-	-	-	-	-	-	244	-	-	-	-	-	-	-	-	(6)	(1)	(7)	-	-	-	-		
	October		-	-	-	-	-	-	-	-	-	-	243	-	-	-	-	-	-	-	-	(7)	(1)	(8)	-	-	-	-		
	November		-	4,867	6	11	-	4,883	-	-	-	-	242	-	-	-	-	-	-	-	-	(8)	(1)	(8)	-	-	-	-		
	December		4,883	11,170	25	46	-	16,124	-	-	-	-	241	-	-	-	-	-	-	-	-	(8)	(1)	(9)	-	-	-	-		
	2011 Total			16,036	31	56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43	(8)	(1)	-	-	-	-		
	2011 Beg/End Avg						8,062		0														(5)							
	2011 13 Mo Avg						1,616		0														(5)					0		
2011	December		-	-	-	-	-	16,124	-	-	-	-	-	-	-	-	-	-	-	-	-	(9)								
2012	January		16,124	13,906	48	91	-	30,169	-	-	-	-	240	-	-	-	-	546,565	611,809	145,669	91	(9)	217,718	217,709	435,427	8,131	8,131	8,131		
	February		30,169	3,033,093	3,244	6,188	-	3,072,694	-	-	-	-	239	-	-	-	-	546,565	611,809	145,669	6,465	217,709	217,718	435,427	8,131	(2,468)	5,664			
	March		3,072,694	279,222	6,579	12,507	-	3,371,001	-	-	-	-	238	-	-	-	-	546,565	611,809	145,669	13,193	435,427	217,718	653,146	5,664	(2,468)	8,359			
	April		3,371,001	259,449	7,286	13,925	-	3,651,661	-	-	-	-	237	-	-	-	-	546,565	611,809	145,669	14,004	653,146	217,718	870,864	5,664	(1,170)	7,189			
	May		3,651,661	287,689	7,868	15,007	-	3,962,226	-	-	-	-	236	-	-	-	-	546,565	611,809	145,669	14,063	870,864	217,718	1,088,582	8,359	(1,170)	(2,492)			
	June		3,962,226	311,338	8,536	16,282	-	4,298,382	-	-	-	-	235	-	-	-	-	546,565	611,809	145,669	14,764	1,088,582	217,718	1,306,301	7,189	(9,681)	(2,492)			
	July		4,298,382	5,558,718	14,672	27,985	-	9,899,758	-	-	-	-	234	-	-	-	-	546,565	611,809	145,669	23,854	1,306,301	217,718	1,524,019	176,113	(2,492)	(2,492)			
	August		9,899,758	4,120,013	13,204	21,244	(14,054,220)	-	14,054,220	-	14,054,220	-	233	31,366	-	31,366	31,366	546,565	611,809	145,669	18,242	1,524,019	217,718	1,741,737	173,621	-	173,621			
	September		-	-	-	-	-	-	14,054,220	-	14,054,220	-	232	31,366	62,866	-	94,232	546,565	611,809	145,669	-	1,741,737	217,718	1,959,455	173,621	-	173,621			
	October		-	-	-	-	-	-	14,054,220	-	14,054,220	-	231	94,232	62,866	-	157,098	546,565	611,809	145,669	-	1,959,455	217,718	2,177,174	173,621	-	173,621			
	November		-	-	-	-	-	-	14,054,220	-	14,054,220	-	230	157,098	62,866	-	219,965	546,565	611,809	145,669	-	2,177,174	217,718	2,394,892	173,621	-	173,621			
	December		-	-	-	-	-	-	14,054,220	-	14,054,220	-	229	219,965	62,866	-	282,831	546,565	611,809	145,669	-	2,394,892	217,718	2,612,610	173,621	-	173,621			
	2012 Total			15,863,429	61,438	113,230	(14,054,220)	-	14,054,220	-	-	-	282,831	-	-	-	141,416	6,358,785	7,341,702	1,748,024	104,677		2,612,619	1,306,301	173,621	-	86,810			
	2012 Beg/End Avg						8,062		7,027,110								141,416						1,306,301							
	2012 13 Mo Avg						2,177,078		5,405,469								60,422						1,306,301				82,198			
2012	December		-	-	-	-	-	-	14,054,220	-	14,054,220	-	-	282,831	-	-	282,831	-	-	-	-	-	2,612,610	2,472	2,612,610	173,621	-	173,621		
2013	January		-	-	-	-	-	-	14,054,220	-	14,054,220	-	228	282,831	62,866	-	345,697	68,403	55,354	148,582	-	2,612,610	2,472	2,615,082	173,621	-	173,621			
	February		-	-	-	-	-	-	14,054,220	-	14,054,220	-	227	345,697	62,866	-	408,564	68,403	55,354	148,582	-	2,612,610	2,472	2,617,554	173,621	-	173,621			
	March		-	-	-	-	-	-	14,054,220	-	14,054,220	-	226	408,564	62,866	-	471,430	68,403	55,354	148,582	-	2,615,082	2,472	2,620,025	173,621	-	173,621			
	April		-	-	-	-	-	-	14,054,220	-	14,054,220	-	225	471,430	62,866	-	534,296	68,403	55,354	148,582	-	2,617,554	2,472	2,622,497	173,621	-	173,621			
	May		-	-	-	-	-	-	14,054,220	-	14,054,220	-	224	534,296	62,866	-	597,163	68,403	55,354	148,582	-	2,620,025	2,472	2,624,969	173,621	-	173,621			
	June		-	-	-	-	-	-	14,054,220	-	14,054,220	-	223	597,163	62,866	-	660,029	68,403	55,354	148,582	-	2,624,969	2,472	2,627,440	173,621	-	173,621			
	July		-	-	-	-	-	-	14,054,220	-	14,054,220	-	222	660,029	62,866	-	722,896	68,403	55,354	148,582	-	2,627,440	2,472	2,629,912	173,621	-	173,621			
	August		-	-	-	-	-	-	14,054,220	-	14,054,220	-	221	722,896	62,866	-	785,762	68,403	55,354	148,582	-	2,629,912	2,472	2,632,383	173,621	-	173,621			
	September		-	-	-	-	-	-	14,054,220	-	14,054,220	-	220	785,762	62,866	-	848,628	68,403	55,354	148,582	-	2,632,383	2,472	2,634,855	173,621	-	173,621			
	October		-	-	-	-	-	-	14,054,220	-	14,054,220	-	219	848,628	62,866	-	911,495	68,403	55,354	148,582	-	2,634,855	2,472	2,637,327	173,621	-	173,621			
	November		-	-	-	-	-	-	14,054,220	-	14,054,220	-	218	911,495	62,866	-	974,361	68,403	55,354	148,582	-	2,637,327	2,472	2,639,798	173,621	-	173,621			
	December		-	-	-	-	-	-	14,054,220	-	14,054,220	-	217	974,361	62,866	-	1,037,227	68,403	55,354	148,582	-	2,639,798	2,472	2,642,270	173,621	-	173,621			
	2013 Total								14,054,220	-	-	-	754,396	-	-	-	660,029	820,833	664,249	1,782,985	-	29,660		2,627,440	-	-	173,621			
	2013 Beg/End Avg						0		14,054,220								660,029						2,627,440				173,621			
	2013 13 Mo Avg						0		14,054,220								660,029						2,627,440				173,621			

**Northern States Power, a Minnesota corporation**  
**Annual Revenue Requirement**  
**11486882 BDS5C CT Exhaust Replacement - With Actual Costs Thru August**  
**2011 Test Year South Dakota Electric Rate Case - 2013 Step Rev Requirement**  
**(000's)**

Revised Work Paper PF16-9

**Rate Analysis**

	Total Company	SD Jurisdiction
Plant Investment	14,054	680
Depreciation Reserve	486	24
CWIP	-	-
Accumulated Deferred Taxes	2,627	127
	<u>10,941</u>	<u>529</u>
Average Rate Base	10,941	529
Tax Prefereced Items:		
Tax Depreciation & Removal Expense	821	40
Avoided Tax Interest	-	-
Debt Return	315	15
Equity Return	537	26
Current Income Tax Requirement	269	12
Book Depreciation	754	36
Annual Deferred Tax	30	1
ITC Flow Thru	-	-
AFUDC Expenditure	-	-
Property Taxes	153	7
<b>Total Revenue Requirements</b>	<b>2,059</b>	<b>98</b>

Last Authorized			
Capital Structure	Rate	Ratio	Weighted Cost
Long Term Debt	6.1300%	46.9600%	2.8800%
Short Term Debt	0.0000%	0.0000%	0.0000%
Preferred Stock	0.0000%	0.0000%	0.0000%
Common Equity	9.2500%	53.0400%	4.9100%
Required Rate of Return			<u>7.7900%</u>
<b>Tax Rate (SD)</b>	<b>35.0000%</b>		

Ave RB \* Weighted Cost of St & LT Debt  
Ave RB \* Weighted Cost of Equity  
(Eq Ret+Bk Depre+Def Tx+ITC-Tax Depre-ADUDC+Avoid Tax)\* T/(1-T)

Per 2012 Step tab  
Dt Ret+Eq Ret+Cur Tax+Bk Depre+Def Tax+ITC+ADUDC+Prop Tax

**Northern States Power, a Minnesota corporation**  
**Annual Revenue Requirement**  
**11486882 BDS5C CT Exhaust Replacement - With Actual Costs Thru August**  
**2011 Test Year South Dakota Electric Rate Case - 2013 Rev Requirement**  
**(000's)**

Revised Work Paper PF16-8

**Rate Analysis**

	Total Company	SD Jurisdiction
Plant Investment	14,054	680
Depreciation Reserve	486	24
CWIP	-	-
Accumulated Deferred Taxes	2,627	127
	<u>10,941</u>	<u>529</u>
Average Rate Base	10,941	529
Tax Prefereced Items:		
Tax Depreciation & Removal Expense	821	40
Avoided Tax Interest	-	-
Debt Return	315	15
Equity Return	537	26
Current Income Tax Requirement	269	12
Book Depreciation	754	36
Annual Deferred Tax	30	1
ITC Flow Thru	-	-
AFUDC Expenditure	-	-
Property Taxes	153	7
<b>Total Revenue Requirements</b>	<b>2,059</b>	<b>98</b>

Last Authorized			
Capital Structure	Rate	Ratio	Weighted Cost
Long Term Debt	6.1300%	46.9600%	2.8800%
Short Term Debt	0.0000%	0.0000%	0.0000%
Preferred Stock	0.0000%	0.0000%	0.0000%
Common Equity	9.2500%	53.0400%	4.9100%
Required Rate of Return			<u>7.7900%</u>
<b>Tax Rate (SD)</b>	<b>35.0000%</b>		

Ave RB \* Weighted Cost of St & LT Debt  
Ave RB \* Weighted Cost of Equity  
(Eq Ret+Bk Depre+Def Tx+ITC-Tax Depre-ADUDC+Avoid Tax)\* T/(1-T)  
Per 2013 Step tab  
Dt Ret+Eq Ret+Cur Tax+Bk Depre+Def Tax+ITC+ADUDC+Prop Tax

Northern States Power, a Minnesota corporation  
2013 Step Adjustment  
11486882 BDS5C CT Exhaust Replacement - With Actual Costs Thru August

Revised Work Papers PF16-4 and PF16-5

Demand Prod SD Jur % 5.5961%  
Demand MN Co % (1) 83.6422%  
South Dakota Post I/A 4.6807%

**CWIP (Not Allowed in SD)**

	Total Company		Total Company after IA		SD Jurisdiction		'(1) Adjustment Included in Interchange Calculation
	BOY	EOY	BOY	EOY	BOY	EOY	
<b>Production</b>							
COSS Adj (000's)	-	-	-	-	-	-	-
<b>Plant</b>							
	<b>Total Company</b>	<b>Total Company</b>	<b>Total Company after IA</b>	<b>Total Company after IA</b>	<b>SD Jurisdiction</b>	<b>SD Jurisdiction</b>	
	<b>BOY</b>	<b>EOY</b>	<b>BOY</b>	<b>EOY</b>	<b>BOY</b>	<b>EOY</b>	
Production	14,054,220.00	14,054,220.00	11,777,703.39	11,777,703.39	679,714.82	679,714.82	
COSS Adj (000's)	14,054	14,054	11,778	11,778	680	680	680
<b>Reserve</b>							
	<b>Total Company</b>	<b>Total Company</b>	<b>Total Company after IA</b>	<b>Total Company after IA</b>	<b>SD Jurisdiction</b>	<b>SD Jurisdiction</b>	
	<b>BOY</b>	<b>EOY</b>	<b>BOY</b>	<b>EOY</b>	<b>BOY</b>	<b>EOY</b>	
Production	486,408.00	486,408.00	407,619.15	407,619.15	23,524.52	23,524.52	
COSS Adj (000's)	486	486	408	408	24	24	24
<b>Accumulated Deferred</b>							
	<b>Total Company</b>	<b>Total Company</b>	<b>Total Company after IA</b>	<b>Total Company after IA</b>	<b>SD Jurisdiction</b>	<b>SD Jurisdiction</b>	
	<b>BOY</b>	<b>EOY</b>	<b>BOY</b>	<b>EOY</b>	<b>BOY</b>	<b>EOY</b>	
Production	2,627,445.00	2,627,445.00	2,201,848.83	2,201,848.83	127,073.10	127,073.10	
COSS Adj (000's)	2,627	2,627	2,202	2,202	127	127	127
<b>Book Depreciation</b>							
	<b>Total Company</b>	<b>Total Company</b>	<b>Total Company after IA</b>	<b>Total Company after IA</b>	<b>SD Jurisdiction</b>	<b>SD Jurisdiction</b>	
	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	
Production	754,396.31	754,396.31	632,198.44	632,198.44	-	36,485.44	
COSS Adj (000's)	-	754	-	632	-	36	36
<b>Annual Deferred</b>							
	<b>Total Company</b>	<b>Total Company</b>	<b>Total Company after IA</b>	<b>Total Company after IA</b>	<b>SD Jurisdiction</b>	<b>SD Jurisdiction</b>	
	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	
Production	29,668.74	29,668.74	24,862.97	24,862.97	-	1,434.89	
COSS Adj (000's)	-	30	-	25	-	1	1
<b>Tax Depreciation</b>							
	<b>Total Company</b>	<b>Total Company</b>	<b>Total Company after IA</b>	<b>Total Company after IA</b>	<b>SD Jurisdiction</b>	<b>SD Jurisdiction</b>	
	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	
Production	820,832.79	820,832.79	687,873.47	687,873.47	-	39,698.55	
COSS Adj (000's)	-	821	-	688	-	40	40
<b>AFUDC</b>							
	<b>Total Company</b>	<b>Total Company</b>	<b>Total Company after IA</b>	<b>Total Company after IA</b>	<b>SD Jurisdiction</b>	<b>SD Jurisdiction</b>	
	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	
Production	-	-	-	-	-	-	
COSS Adj (000's)	-	-	-	-	-	-	-
<b>Avoided Tax</b>							
	<b>Total Company</b>	<b>Total Company</b>	<b>Total Company after IA</b>	<b>Total Company after IA</b>	<b>SD Jurisdiction</b>	<b>SD Jurisdiction</b>	
	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	
Production	(53.12)	(53.12)	(44.52)	(44.52)	-	(2.57)	
COSS Adj (000's)	-	-	-	-	-	-	-
<b>Property Tax</b>							
	<b>Total Company</b>	<b>Total Company</b>	<b>Total Company after IA</b>	<b>Total Company after IA</b>	<b>SD Jurisdiction</b>	<b>SD Jurisdiction</b>	
	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	<b>Annual</b>	
Production	152,909.91	152,909.91	128,141.41	128,141.41	-	7,395.30	
COSS Adj (000's)	-	153	-	128	-	7	7

Northern States Power, a Minnesota corporation  
2011 Test-Year - Year 2013  
11486882 BDS5C CT Exhaust Replacement - With Actual Costs Thru August

Revised Work Papers PF16-2 and PF16-3

Property Tax Rate	1.0880%
Demand Prod SD Jur %	5.7712%
Demand MN Co % (1)	83.8019%
South Dakota Post I/A	4.8364%

**CWIP (Not Allowed in SD)**

(1) Adjustment Included in Interchange Calculation

	Total Company		Total Company after IA		SD Jurisdiction	
	BOY	EOY	BOY	EOY	BOY	EOY
Production	-	-	-	-	-	-
COSS Adj (000's)	-	-	-	-	-	-

	Total Company		Total Company after IA		SD Jurisdiction	
	BOY	EOY	BOY	EOY	BOY	EOY
Production	14,054,220.00	14,054,220.00	11,777,703.39	11,777,703.39	679,714.82	679,714.82
COSS Adj (000's)	14,054	14,054	11,778	11,778	680	680

	Total Company		Total Company after IA		SD Jurisdiction	
	BOY	EOY	BOY	EOY	BOY	EOY
Production	486,408.00	486,408.00	407,619.15	407,619.15	23,524.52	23,524.52
COSS Adj (000's)	486	486	408	408	24	24

	Total Company		Total Company after IA		SD Jurisdiction	
	BOY	EOY	BOY	EOY	BOY	EOY
Production	2,627,440.00	2,627,440.00	2,201,844.64	2,201,844.64	127,072.86	127,072.86
COSS Adj (000's)	2,627	2,627	2,202	2,202	127	127

**Book Depreciation**

	Total Company		Total Company after IA		SD Jurisdiction	
	Annual	Annual	Annual	Annual	Annual	Annual
Production	754,396.31	754,396.31	632,198.44	632,198.44	-	36,485.44
COSS Adj (000's)	-	754	-	632	-	36

**Annual Deferred**

	Total Company		Total Company after IA		SD Jurisdiction	
	Annual	Annual	Annual	Annual	Annual	Annual
Production	29,659.63	29,659.63	24,855.34	24,855.34	-	1,434.45
COSS Adj (000's)	-	30	-	25	-	1

**Tax Depreciation**

	Total Company		Total Company after IA		SD Jurisdiction	
	Annual	Annual	Annual	Annual	Annual	Annual
Production	820,832.79	820,832.79	687,873.47	687,873.47	-	39,698.55
COSS Adj (000's)	-	821	-	688	-	40

**AFUDC (Not allowed in SD)**

	Total Company		Total Company after IA		SD Jurisdiction	
	Annual	Annual	Annual	Annual	Annual	Annual
Production	-	-	-	-	-	-
COSS Adj (000's)	-	-	-	-	-	-

**Avoided Tax**

	Total Company		Total Company after IA		SD Jurisdiction	
	Annual	Annual	Annual	Annual	Annual	Annual
Production	-	-	-	-	-	-
COSS Adj (000's)	-	-	-	-	-	-

**Property Tax**

	Total Company		Total Company after IA		SD Jurisdiction	
	Annual	Annual	Annual	Annual	Annual	Annual
Production	152,909.91	152,909.91	128,141.41	128,141.41	-	7,395.30
COSS Adj (000's)	-	153	-	128	-	7