

OMB No. 1905-0129 Approval Expires: XX/XX/XXX Burden: 122 hours

**NOTICE:** This report is **mandatory** under the Federal Energy Administration Act of 1974 (Public Law 93-275) for all parts. Failure to comply may result in criminal fines, civil penalties and other sanctions as provided by law. For further information concerning sanctions and data protections see the provision on sanctions and the provision concerning the confidentiality of information in the instructions. **Title 18 USC 1001 makes it a criminal offense for any person knowingly and willingly to make to any Agency or Department of the United States any false, fictitious, or fraudulent statements as to any matter within its jurisdiction.** 

SCHEDULE 1. I	DENTIFICATION
<u>Survey</u>	Contact
First Name:	Last Name:
Title:	
Telephone (include extension):	Fax:
Email:	
Supervisor of Conta	act Person for Survey
First Name:	Last Name:
Title:	
Telephone (include extension):	Fax:
Email:	
Repo	ort For
Regional Entity:	
Reporting Party (Regional Entity or subregion):	
For questions about the data requested on	Form EIA-411, contact the Survey Manager:
Jonathar	DeVilbiss

Jonathan DeVilbiss
Telephone Number: (202) 586-2992
FAX Number: (202) 287-1938
Email: Jonathan.DeVilbiss@eia.gov



	OMB	No.	1905	5-0129	
Approval	Expir	es:	XX/X	XXXX	<
	Rurd	en.	122	hours	

Regional Entity: _		·	
Reporting Party:			

	porting ranty.											_		
	SCHEDULE 2.	PART	A. HIST	ORICAL	AND P	RO	JECTE	PE	AK DE	EMAN	D AN	ID ENER	GY - MON	THLY
Pe	ak Demand Repo	orted:			Coin	cide	ent		No	n-Coi	ncide	ent		
	non-coincident, p ny coincident is i													
		YEAR												
		2013	3 (Actua	I - Prior Ye	ar)		2014 (R)	′ - R	eport Y	ear)		2015	(Next Yea	r)
LIN		DEM (MEGA)	HOUR AND WATTS)	NET ENE (THOUSANI MEGA-WATTI (b)	OS OF	[	EAK HOUDEMAND SEGAWATTS (a)		NET EN THOUSA MEGA-WA	ANDS OF	<u>'</u>	EAK HOUI DEMAND MEGAWATTS) (a)	(THOUS	ENERGY SANDS OF ATTHOURS) (b)
1	January	,												
2														
3	March													
4	April													
5	May													
6	June													
7	July													
8	August													
9	September													
10	October													
11	. November													
12	2 December													
								$\perp$						
	SCHEDULE 2	. PART	B. HIS	TORICAL	AND F	PRO	<b>DJECTE</b>	D PI	EAK D	EMAN	ND A	ND ENER	GY – ANI	NUAL
									YEAR					
			Actual	Year 1	Year	2	Year 3					Year 8	Year 9	Year 10
	Summer Peak H													
	Demand (Megav	vatts)												
1	June-September			_	1									
	Winter Peak Hou													
2	Demand (Megav December - Febr													
	Net Annual Ene													
3	(Gigawatt hours													



	OMB	No.	1905	5-0129	
Approval	<b>Expir</b>	es:	XXIX	XXXXX	
	Burd	len:	122	hours	

Regional Entity:	
Reporting Party:	

	SCHEDULE 3. PART A. HISTO	RICAL AND	PROJECTE	D DEMAND	AND CAP	ACITY - SUM	MER
LINE				YEAF	र		
NO.		Actual (2013)	Year 1 (RY 2014)	Year 2 (2015)		Year 9 (2022)	Year 10 (2023)
		DEMANE	(IN MEGAWA	TTS)			
1	Unrestricted Peak Demand						
1a	New Conservation (Energy Efficiency)						
1b	Estimated Diversity						
1c	Additions for non-member load						
1d	Stand-by Load Under Contract						
1e	Non-Controllable Demand Response						
2	Total Internal Demand						
2a	Direct Control Load Management						
2b	Interruptible Load						
2c	Critical Peak Pricing with Control						
2d	Load as a Capacity Resource						
3	Net Internal Demand						
4	Total Demand Response						
							1
		SUPPL	Y CATEGORIE	S (IN MEGAW	ATTS)		
5	TOTAL INTERNAL CAPACITY (sum of 6 and 8a)						
6	EXISTING CAPACITY (6a+6b+6c)						1
6a 6b	Certain Other						1
6D 6C	Unavailable						+
00	Ullavallable						+
7	PEAK HOUR DEMAND PLUS AVAILABLE RESERVES			1	I		



Regional Entity: _	
Reporting Party:	

S	SCHEDULE 3. PART A. HISTORICAL AND PROJECTED DEMAND AND CAPACITY - SUMMER						
LINE				YEAR	₹		
NO.		Actual	Year 1	Year 2		Year 9	Year 10
		(2013)	(RY 2014)	(2015)	••••	(2022)	(2023)
		FUTURE	CAPACITY	CATEGORIE	S (IN MI	EGAWATTS)	
8	FUTURE CAPACITY ADDITIONS						
8a	Tier 1 (Most Certain)						
8b	Tier 2						
8c	Tier 3 (Least Certain)						
9	ANTICIPATED CAPACITY (6a+8a)						
		CA	PACITY TRA	NSFERS (IN	MEGA	NATTS)	
10	CAPACITY TRANSFERS - IMPORTS						
10a	Prior Year Actual Imports						
10b	Firm						
10c	Expected						
11	CAPACITY TRANSFERS - EXPORTS						
11a	Prior Year Actual Exports						
11b	Firm						
11c	Expected						



Region	nal Entity:						
Repor	ting Party:						
5	CHEDULE 3. PART A. HISTORIC	AL AND P	ROJECTED	DEMAND A	ND CAF	ACITY - SUI	MMER
LINE				YEA	R		
NO.		Actual (2013)	Year 1 (RY 2014)	Year 2 (2015)		Year 9 (2022)	Year 10 (2023)
			CAPACITY - C	Continued (II	N MEGA	WATTS)	
12	EXISTING, CERTAIN & NET FIRM TRANSFERS (6a+10b-11b)						
13	ANTICIPATED CAPACITY RESOURCES (12+8a)						
14	PROSPECTIVE CAPACITY RESOURCES						
15	ADJUSTED POTENTIAL CAPACITY RESOURCES						
			RESERVE	AND CAPACI	TY MAR	GINS	
16	TARGET RESERVE MARGIN FOR Region/Assessment Area						
17	EXISTING, CERTAIN & NET FIRM TRANSFERS						
17.1	Reserve Margin						
17.2	Capacity Margin						
18	ANTICIPATED RESOURCES						
18.1	Reserve Margin						
18.2	Capacity Margin						
19	PROSPECTIVE RESOURCES						
19.1	Reserve Margin						
19.2	Capacity Margin						
20	ADJUSTED POTENTIAL RESOURCES						
20.1	Reserve Margin						
20.2	Capacity Margin						



Regional Entity:		
Reporting Party:		

	SCHEDULE 3. PART B. HISTORICAL AND PROJECTED DEMAND AND CAPACITY - WINTER							
LINE				YEAF	र			
NO.		Actual (2013)	Year 1 (RY 2014)	Year 2 (2015)		Year 9 (2022)	Year 10 (2023)	
		DEMAND	(IN MEGAWA	TTS)				
1	Unrestricted Peak Demand							
1a	New Conservation (Energy Efficiency)							
1b	Estimated Diversity							
1c	Additions for non-member load							
<b>1</b> d	Stand-by Load Under Contract							
1e	Non-Controllable Demand Response							
2	Total Internal Demand							
2a	Direct Control Load Management							
2b	Interruptible Load							
2c	Critical Peak Pricing with Control							
2d	Load as a Capacity Resource							
3	Net Internal Demand							
4	Total Demand Response							
4	Total Delliand Response							
		SUPPL	Y CATEGORIE	S (IN MEGAW	/ATTS)			
5	TOTAL INTERNAL CAPACITY (sum of 6 and 8a)							
6	EXISTING CAPACITY (6a+6b+6c)							
6a	Certain							
6b	Other						-	
6c	Unavailable							
7	PEAK HOUR DEMAND PLUS AVAILABLE RESERVES				1	1	1	

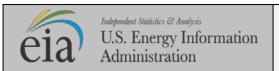


Regional Entity: _	
Reporting Party:	

S	SCHEDULE 3. PART B. HISTORIC	AL AND PRO	JECTED DE	EMAND AN	D CAP	ACITY - WIN	ITER
LINE				YEAR	₹		
NO.		Actual (2013)	Year 1 (RY 2014)	Year 2 (2015)		Year 9 (2022)	Year 10 (2023)
		` '	E CAPACITY	` '	S (IN MI	` '	• •
8	FUTURE CAPACITY ADDITIONS	10101				 	
8a	Tier 1 (Most Certain)						
8b	Tier 2						
8c	Tier 3 (Least Certain)						
9	ANTICIPATED CAPACITY (6a+8a)						
		CA	PACITY TRA	NSFERS (IN	MEGAV	WATTS)	
10	CAPACITY TRANSFERS - IMPORTS					-,	
10a	Prior Year Actual Imports						
10b	Firm						
10c	Expected						
11	CAPACITY TRANSFERS – EXPORTS						
11a	Prior Year Actual Exports						
11b	Firm						
11c	Expected						

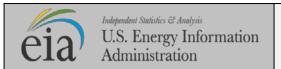


Region	nal Entity:						
Report	ting Party:						
S	CHEDULE 3. PART B. HISTORIC	AL AND P	ROJECTED	DEMAND AN	ND CAF	ACITY - WIN	NTER
LINE				YEAI	₹		
NO.		Actual (2013)	Year 1 (RY 2014)	Year 2 (2015)		Year 9 (2022)	Year 10 (2023)
			CAPACITY - 0	Continued (IN	<b>MEGA</b>	WATTS)	
12	EXISTING, CERTAIN & NET FIRM TRANSFERS (6a+10b-11b)						
13	ANTICIPATED CAPACITY RESOURCES (12+8a)						
14	PROSPECTIVE CAPACITY RESOURCES						
15	ADJUSTED POTENTIAL CAPACITY RESOURCES						
			RESERVE	AND CAPACI	TY MAR	GINS	
16	TARGET RESERVE MARGIN FOR Region/Assessment Area						
17	EXISTING, CERTAIN & NET FIRM TRANSFERS						
17.1	Reserve Margin						
17.2	Capacity Margin						
18	ANTICIPATED RESOURCES						
18.1	Reserve Margin						
18.2	Capacity Margin						
19	PROSPECTIVE RESOURCES						
19.1	Reserve Margin						
19.2	Capacity Margin						
20	ADJUSTED POTENTIAL RESOURCES						
20.1	Reserve Margin						
20.2	Capacity Margin				1		1



Regional Entity: _	
Reporting Party: _	

	SCHED	ULE 4. BULK TRA	NSMISSION FACILITY POWER	FLOW CASES	
Line No.					
1	Case Name:				
2	Year of Study:				
3	Case Number:				
		PROSPEC	TIVE FACILITIES AND CONNECTI	ONS	
	Name And Type	Projected In-Service Date	Conr	nections	
4	Of Facility	(e.g., 12-2004)	Bus Number	Bus Name	
	(a)	(b)	(c)	(d)	



	OMB No.	1905-0129
Approval	<b>Expires:</b>	<b>XXIXXIXXX</b>
	Burden:	122 hours

Regional Entity:		,	-
Reporting Party:			-

	SCHEDULE 5. BULK	ELECTRIC TRANSMISSION S	STEM MAPS
LINE NO.			
1	Specify the Number of Maps Provided:		
2	For each map provide file name, co	overage, and map software:	
	MAP NUMBER (if applicable) (a)	FILE NAME (if applicable) (b)	MAP SOFTWARE (if applicable) (c)



Regional Entity: _	
Reporting Party: _	

			CIRCUIT MILES										
		In Report						uit miles fo sion eleme					ve. From Repoi
					AC (kV)						DC	(kV)	
		Less than 100	100- 199	200- 299	300- 399	400- 599	600+	TOTAL	100- 299	300- 399	400- 599	600+	TOTAL
1	Existing (as of last day of prior report year)												
2	Under Construction (as of first day of current report year)												
3	Planned (completion within first five years)												
4	Conceptual (completion within first five years)												
5	Planned (completion within second five years)												
6	Conceptual (completion within second five years)												
7	Sum of Existing, Under Construction, and Planned Transmission (full ten-year period)												
8	Sum of Existing, Under Construction, Planned, and Conceptual Transmission (full ten-year period)												



OH=Overhead UG=Underground SM=Submarine

#### FORM EIA-411 COORDINATED BULK POWER SUPPLY AND DEMAND PROGRAM REPORT

OMB No. 1905-0129 Approval Expires: XX/XX/XXX Burden: 122 hours

Regio	nal Entity:			
Repor	ting Party:			
S	CHEDULE 6. PART B. CHAP	RACTERISTICS OF PRO	JECTED TRANSMISSIO	N LINE ADDITIONS
LINE NO.		TRANSMISSION LINE (a)	TRANSMISSION LINE (b)	TRANSMISSION LINE (c)
		TRANSMISSION LINE IDE	ENTIFICATION	
1	Project Name			
2	Project Status			
3	Tie line			
4a	Primary Driver			
4b	Secondary Driver			
5	Terminal Location (From)			
6	Terminal Location (To)			
		TRANSMISSION LINE	OWNERSHIP	
7	Company Name			
8	EIA Company Code			
9	Type of Organization			
10	Percent Ownership			
		TRANSMISSION LI	NE DATA	
11	Line Length (miles)			
12	Line Type	[ ]OH[ ]UG[ ]SM	[ ]OH[ ]UG[ ]SM	[ ]OH[ ]UG[ ]SM
13	Voltage Type	[ ]AC [ ]DC	[ ]AC[ ]DC	[ ]AC[ ]DC
14	Voltage Operating (Kilovolts)			
15	Voltage Design (Kilovolts)			
16	Circuits per Structure Present			
17	Circuits per Structure Ultimate			
18	Capacity Rating (MVA)			
19	Original In-Service Date			
20	Expected In-Service Date			
21	Line Delayed?			
22	Cause of Delay			
		LEGEND		
Line Type	:	Voltage Type:		

AC=Alternating Current DC=Direct Current



Regional Entity: _	
Reporting Party:	

	SCHEDULE 7. PART A, ANNUAL DATA (	ON TRA	NSMI	SSIO	N LIN	IE OL	JTAC	GES F	OR.	AC L	INE	S		
	(Report following data for	r each a	pplical	ole El	HV Vo	ltage (	Class	s)						
				n Repo	ort Year	2016 fo	rward	report o	report for voltage categories 200 kV eport only for transmission elements BES definition.					
LINE	Applicable AC Voltage Class		Than 0 kV	_	0-199 kV	200- k'		300- k		400-599 kV			-799 (V	
NO.		(	(a)		(b)	(c	:)	(c	l)	(	e)	(	(f)	
	AUTOMATIC (Unscheduled), Sus	tained	Outage	s for	Speci	fied V	oltag	je Cla	SS					
1	Number of Outages													
1a	Number of Single Mode Outages													
1b	Number of Dependent Mode Outages													
1c	Number of Common Mode Outages													
2	Number of Circuit-Hours Out of Service													
3	Initiating (I) and Sustained (S) Causes (Count of Outages per Cause Category)	ı	S	ı	S	I	S	ı	s	ı	s	I	S	
3a	Weather, excluding lightning													
3b	Lightning													
3c	Environmental													
3d	Foreign Interference													
3e	Contamination													
3f	Fire													
3g	Vandalism, Terrorism, or Malicious Acts													
3h	Failed AC Substation Equipment													
3i	Failed AC/DC Terminal Equipment													
3j	Failed Protection System Equipment													
3k	Failed AC Circuit Equipment													
31	Failed DC Circuit Equipment													
3m	Human Error													
3n	Vegetation													
30	Power System Condition													
3p	Unknown													
3q	Other													
	NON-AUTOMATIC, Operation	al Outa	ges for	Spec	cified '	Volta	ge Cl	ass						
4	Number of Outages						<u>-</u>							
5	Number of Circuit-Hours Out of Service													
6	Outage Cause (Count)													
6a	Emergency													
6b	System Voltage Limit Mitigation													
6c	System Operating Limit Mitigation (excluding voltage)													
6d	Other Operational Outage													
_ Ju	onio opolational odtage							1		I				



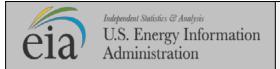
Regional Entity: _	
Reporting Party:	

	SCHEDULE 7. PART B, ANNUAL DATA (Report following data f									SF	OR I	DC L	INES	3	
	(coperation)	In R	eport Ye	ear 201	L4 and port Ye	Repoi	rt Year	2015 ard rep	report oort on	lly for	transn	atego	ries 20 n elem	00 kV a	and nat
LINE NO.	Applicable DC Voltage Class	Less Thar ± 100   (a)		199	100- 9 kV b)	299	200- 9 kV (c)	399	800- 9 kV d)	499	00- kV e)	± 5 599		799	600- 0 kV f)
	AUTOMATIC (Unscheduled), S	usta	ined C	utag	es fo	r Sp	ecifie	d Vo	Itage	Cla	SS				
1	Number of Outages														
1a	Number of Single Mode Outages														
1b	Number of Dependent Mode Outages														
1c	Number of Common Mode Outages														
2	Number of Circuit-Hours Out of Service														
3	Initiating (I) and Sustained (S) Causes (Count of Outages per Cause Category)	ı	s	I	S	ı	s	ı	s	I	s	ı	s	ı	s
3a	Weather, excluding lightning														
3b	Lightning														
3c	Environmental														
3d	Foreign Interference														
3e	Contamination														
3f	Fire														
3g	Vandalism, Terrorism, or Malicious Acts														
3h	Failed AC Substation Equipment														
3i	Failed AC/DC Terminal Equipment														
3j	Failed Protection System Equipment														
3k	Failed AC Circuit Equipment														
31	Failed DC Circuit Equipment														
3m	Human Error														
3n	Vegetation														
30	Power System Condition														
3р	Unknown														
3q	Other														<u></u>
	NON-AUTOMATIC, Operati	ional	Outaç	ges fo	or Sp	ecifi	ed Vo	ltage	e Cla	SS					
4	Number of Outages														
5	Number of Circuit-Hours Out of Service														
6	Outage Cause (Count)														
6a	Emergency														
6b	System Voltage Limit Mitigation														
6c	System Operating Limit Mitigation (excluding voltage)														
6d	Other Operational Outage														



Regional Entity: _	
Reporting Party:	

	COUEDINE Z. DADT O ANNUA		TA 01	LTD	NICE	2014	<b>ED</b> 6	\. I I T A	050				
	SCHEDULE 7. PART C, ANNUA (Report following da							UIA	GES				
	( 2) 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	In Re	port Yea V and ab	r 2014	and Rep	ort Ye	ar 2015 ar 2016		rd repo	rt only			
LINE NO.	Applicable Transformer Low-Side Voltage Class		Than 0 kV (a)		)-199 kV (b)	k	-299 (V c)	300-399 kV (d)		400-599 kV (e)		k	-799 :V f)
	AUTOMATIC (Unscheduled), Sust	ained	Outag	es fo	r Spec	ified	Volta	ige C	lass				
1	Number of Outages												
1a	Number of Single Mode Outages												
<b>1</b> b	Number of Dependent Mode Outages												
1c	Number of Common Mode Outages												
2	Number of Transformer-Hours Out of Service												
3	Initiating (I) and Sustained (S) Causes (Count of Outages per Cause Category)	ı	S	ı	S	ı	s	ı	s	ı	s	ı	s
3a	Weather, excluding lightning												
3b	Lightning												
3c	Environmental												
3d	Foreign Interference												
3e	Contamination												
3f	Fire												
3g	Vandalism, Terrorism, or Malicious Acts												
3h	Failed AC Substation Equipment												
3i	Failed AC/DC Terminal Equipment												
3j	Failed Protection System Equipment												
3k	Failed AC Circuit Equipment												
31	Failed DC Circuit Equipment												
3m	Human Error												
3n	Vegetation												
30	Power System Condition												
3р	Unknown												
3q	Other												
	NON-AUTOMATIC, Operation	al Out	ages fo	or Sp	ecified	l Volt	age (	Class					
4	Number of Outages												
5	Number of Transformer-Hours Out of Service												
6	Outage Cause (Count)												
6a	Emergency												
6b	System Voltage Limit Mitigation												
60	System Operating Limit Mitigation												
6c	(excluding voltage)												
6d	Other Operational Outage												



OMB No. 1905-0129
<b>Approval Expires: XX/XX/XXX</b>
Durdon, 122 hours

Regional Entity: _	
Reporting Party: _	

	SCHEDULE 7. PART D,	TRANSMIS	SION FI FI	MENT INVE	NTORY A	ND EVENT	SUMMAR	Υ
		following d					JOMMAN	•
LINE NO.				Report Year 20 eport only for tra				
AC Circ	cuit Voltage Class	Less Than 100 kV (a)	100-199 kV (b)	200-299 kV (c)	300-399 kV (d)	400-599 kV (e)	600-799 kV (f)	All Voltages (g)
1	Number of AC Circuits (Total)							
1a	Overhead							
1b	Underground							
2	Number of AC Circuit Miles (Total)							
2a	Overhead							
2b	Underground							
3	Number of AC Multi-Circuit Structure Miles							
DC Circ	cuit Voltage Class	Less Than ± 100 kV (a)	± 100-199 kV (b)	± 200-299 kV (c)	± 300-399 kV (d)	± 400-499 kV (e)	± 500-599 kV (f)	± 600-799 kV (g)
4	Number of DC Circuits (Total)							
4a	Overhead							
4b	Underground							
5	Number of DC Circuit Miles (Total)							
5a	Overhead							
5b	Underground							
Transfe	ormer Low-Side Voltage Class	Less Than 100 kV (a)	100-199 kV (b)	200-299 kV (b)	300-399 kV (c)	400-599 kV (d)	600-799 kV (e)	Reserved (f)
6	Number of Transformers							
7	Total Number of Events (all Voltage Classes)			1	1			



OMB No. 1905-0129 Approval Expires: XX/XX/XXX Burden: 122 hours

Regional Entity: _	
Reporting Party:	

### SCHEDULE 8. ANNUAL DATA ON GENERATING UNIT OUTAGES, DERATINGS AND PERFORMANCE INDEXES For Conventional Units

#### SCHEDULE 8. PART A. ANNUAL DATA ON GENERATING UNIT OUTAGE HOURS AND COUNTS

LINE	Conventional Generating Unit	Total Number of GADS	Forced C	outage	Maintenance	e Outage	Planned Outage		
NO.	Conventional Generating Onit	Generator Units	Hours (FOH)	Count (FO)	Hours (MOH)	Count (MO)	Hours (POH)	Count (PO)	
		Α	В	С	D	E	F	G	
			By Unit	Туре					
1	Coal Steam (ST)								
2	Other Fossil Steam (ST)								
3	Nuclear (NUC)								
4	Gas Turbines (GT)								
5	Combined Cycle (CT, CA)								
6	Int. Combus. Engines (IC)								
7	Hydro (HY)								
8	Other								
9	TOTAL								
			Ву Сар	acity					
10	199 MW and below								
11	200-399 MW								
12	400-699 MW								
13	700 MW and above								
14	TOTAL								
			Coal Units I	y Vintage					
	Units that entered commerci	al operation in							
15	Coal Steam – Subcritical	от орогииот п		<u> </u>					
16	Coal Steam -Supercritical								
	Units that entered commerci	al operation in	or after 1973	2		1			
17	Coal Steam – Subcritical	ai operation ii		, 		T			
18	Coal Steam - Supercritical								
10	Coai Steain -Supercritical	Com	bined Cycle I	Inite by Vi	ntage				
	Unite that entered commerci				maye				
10	Units that entered commerci	ai operation ir	i or before 20	UZ					
19	Combined Cycle	-1							
	Units that entered commerci	al operation in	or after 2003	3					
20	Combined Cycle								



Regional Entity:		
Reporting Party:	-	

S	CHEDULE 8. PART B. A	ANNUAL DA	TA ON GI	ENERATING	UNIT DEI	RATING HO	URS AND	COUNTS					
		Forced De	,	Maintenance	,	Planned D		Equivalent Seasonal					
NO.	Conventional Generating Unit	Equivalent Hours (EFDH)	Counts (Unique) (FD)	Equivalent Hours (EMDH)	Counts (Unique) (D4)	Equivalent Hours (EPDH)	Counts (Unique) (PD)	Derating Hours (ESDH)					
		Α	В	С	D	E	F	G					
	By Unit Type												
1	Coal Steam (ST)												
2	Other Fossil Steam (ST)												
3	Nuclear (NUC)												
4	Gas Turbines (GT)												
5	Combined Cycle (CT, CA)												
6	Int. Combus. Engines (IC)												
7	Hydro (HY)												
8	Other												
9	TOTAL												
				By Capacity									
10	199 MW and below												
11	200-399 MW												
12	400-699 MW												
13	700 MW and above												
14	TOTAL												
				Units by Vin	tage								
	Units that entered comm	ercial operati	on in or be	efore 1972									
15	Coal Steam - Subcritical	-											
16	Coal Steam -Supercritical	_		_									
	Units that entered comm	ercial operati	on in or af	ter 1973									
17	Coal Steam - Subcritical	•											
18	Coal Steam -Supercritical												
			Combined	Cycle Units b	y Vintage								
	Units that entered comm												
19	Combined Cycle												
	Units that entered comm	ercial operati	on in or af	ter 2003									
20	Combined Cycle												



Regional Entity: _	
Reporting Party:	

	SCHEDULE 8. PART	C.1. ANN	UAL DATA	ON GENE	RATING U	NIT PERFORM	IANCE IND	EXES
Line	Conventional Generating	Net Capacity	Net Output	Service	Availability	Unavailability	Unit Derating	Equivalent Availability
No.	Unit	Factor	Factor	Factor	Factor (AF)	Factor (UF)	Factor	Factor
		(NCF)	(NOF)	(SF)			(UDF)	(EAF)
		Α	В	С	D	E	F	G
						By Unit Type		
1	Coal Steam (ST)							
2	Fossil Steam (ST)							
3	Nuclear (NUC)							
4	Gas Turbines (GT)							
5	Combined Cycle (CT, CA)							
6	Int. Combus. Engines (IC)							
7	Hydro (HY)							
8	Other							
9	TOTAL							
		Г	T		T	By Capacity		
10	199 MW and below							
11	200-399 MW							
12	400-699 MW							
13	700 MW and above							
14	TOTAL							
				al Units by				
	Units that entered comm	ercial ope	ration in or b	efore 1972	2			
15	Coal Steam – Subcritical							
16	Coal Steam-Supercritical							
	Units that entered commercial operation in or after 1973							
17	Coal Steam – Subcritical							
18	Coal Steam-Supercritical							
			Combine	d Cycle Ur	nits by Vintag	ge		
	Units that entered comm	nercial ope	ration in or b	efore 2002	2			
19	Combined Cycle	•						
	Units that entered comm	ercial ope	ration in or a	fter 2003				
20	Combined Cycle							
	<u>-</u>		!					



	<b>OMB</b>	No.	1905	5-0129
<b>Approval</b>	Expir	res:	XXIX	XXXXX
	Burg	den:	122	hours

Regional Entity:	
Reporting Party:	

	SCHEDULE 8. PART	C.2. ANNUAL D	ATA ON GENE	RTING UNIT PE	ERFORMANCE I	NDEXES
LINE NO.	Conventional Generating Unit	Equivalent Forced Outage Rate (FOR)	Equivalent Maintenance Outage Rate (MOR)	Equivalent Planned Outage Rate (POR)	Forced Outage Rate Demand (FORd)	Equivalent Forced Outage Rate Demand (EFORd)
		Α	В	С	D	E
			By Unit Ty	pe		
1	Coal Steam (ST)					
2	Fossil Steam (ST)					
3	Nuclear (NUC)					
4	Gas Turbines (GT)					
5	Combined Cycle (CT, CA)					
6	Int. Combus. Engines (IC)					
7	Hydro (HY)					
8	Other					
9	TOTAL					
			By Capaci	ty		
10	199 MW and below					
11	200-399 MW					
12	400-699 MW					
13	700 MW and above					
14	TOTAL					
			Coal Units by \	/intage		
	Units that entered comm	ercial operation i	n or before 1972			
15	Coal Steam – Subcritical	•				
16	Coal Steam-Supercritical					
	Units that entered comm	ercial operation i	n or after 1973			
17	Coal Steam – Subcritical					
18	Coal Steam-Supercritical					
		Con	nbined Cycle Uni	ts by Vintage		
	Units that entered comm			,		
19	199 MW and below	ordiai operation i	5. 50.010 2002			
	Units that entered comm	ercial operation i	n or after 2003			
20	199 MW and below	ordiai operation i	5. 4.(6. 2000			
20	133 MAN WING DELOW					



	<b>OMB</b>	No.	1905	5-0129
<b>Approval</b>	Expir	es:	XXIX	XXXXX
	Rure	len.	122	hours

Regional Entity: _	
Reporting Party: _	

	SCHEDULE 8. PART D. ANNUAL DATA ON GENERATING UNIT PRIMARY CAUSE OF ACTIVE STATE FORCED OUTAGES								
LINE NO.	Forced Outage and Unplanned Derating Causes	Fossil Steam Units (ST)	Nuclear Units (NUC)	Gas Turbine Units (GT)	Combined Cycle Units (CT, CA)	Internal Combustion Engines (IC)	Hydro/ Pumped Storage Units (HY)	All Other Units	Total Outage Count
		Α	В	С	D	E	F	G	Н
_			FOR	CED OUT	AGE EVENTS			1	
1	Major Components								
1.a	Boiler								
1.b	Reactor								
1.c	Engine								
1.d	Turbine								
1.e	Generator								
	Dolongo of Dioret (D.D.)								
2	Balance of Plant (BoP)								
2.a 2.b	Water Systems Electrical								
2.c	Power Station Switchyard								
2.d	Auxiliary Systems								
2.u 2.e	All Other BoP Systems								
2.6	All Other Bor Systems								
3	Pollution Control Equipment								
4	External								
4.a	Severe Weather								
4.b	Non-weather catastrophes								
4.c	Economic								
4.d	Fuel Quality								
4.e	Transmission System								
4.f	Other External								
5	Regulatory, Safety, Environmental								
5.a	Regulatory								
5.b	Stack Emissions						· ·		
5.c	Other Env. Limitations								
5.d	Safety								
6	Personnel or Procedure Errors								
6.a	Personnel Errors								
6.b	Procedural Errors								
6.c	Staff Shortage								
_	5.6								
7	Performance								
_	All Other Course								
8	All Other Causes								
0	TOTAL (All Causes)								
9	TOTAL (All Causes)								

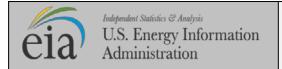


	<b>OMB</b>	No.	1905	5-0129
<b>Approval</b>	Expir	es:	XXIX	XXXXX
	Rure	len.	122	houre

Regional Entity:	
Reporting Party: _	

SCHEDULE 9. SMART GRID TRANSMISSION SYSTEM DEVICES AND APPLICATIONS					
	SCHEDULE 9. PART A. DYNAMIC CAPAL	BILITY RATING SYSTEMS	S (DCRSs)		
LINE NO.	AC Circuit Voltage Class	100- 299 kV (A)	300-799 kV (B)		
1	Number of transmission circuits utilizing a dynamic capability rating system				
2	Miles of AC transmission lines utilizing a dynamic capability rating system				
3	Number of station transformers utilizing a dynamic capability rating system				

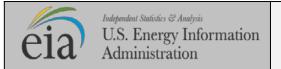
	SCHEDUEL 9. PART B. PHASOR MEASUREMENT UNITS (PMUs)						
LINE NO.	AC Circuit Voltage Class	100- 299 kV (A)	300-799 kV (B)				
1	Number of non-networked PMUs						
2	Number of networked PMUs						
3	Number of substations with at least one networked PMU installed						
4	Number of total substations						



	OMB No.	1905-0129
Approval	<b>Expires:</b>	<b>XXIXXIXXX</b>
	Burden	122 hours

Regional Entity:	
Reporting Party:	

SCHEDULE 9. PART C. SMART GRID PMU APPLICATIONS						
LINE NO.	Application Type	Application Used				
PMU A	APPLICATIONS					
	A. Real-time Operations Applicat	ions				
1	Indicate whether PMUs are being used to support the following applications:					
1a	Wide-area situational awareness	[ ] Yes, [ ] No				
<b>1</b> b	Frequency stability monitoring and trending	[ ] Yes, [ ] No				
1c	Power oscillation monitoring	[ ] Yes, [ ] No				
1d	Voltage monitoring and trending	[ ] Yes, [ ] No				
1e	<ul> <li>Alarming and setting system operating limits, event detection and avoidance</li> </ul>	[ ] Yes, [ ] No				
1f	Resource integration	[ ] Yes, [ ] No				
1g	State estimation	[ ] Yes, [ ] No				
1h	Dynamic line ratings and congestion management	[ ] Yes, [ ] No				
<b>1</b> i	Outage restoration	[ ] Yes, [ ] No				
1j	Operations planning	[ ] Yes, [ ] No				
	B. Planning and Off-line Applications					
2	Indicate whether PMUs are being used to support the following applications:					
2a	Baselining power system performance	[ ] Yes, [ ] No				
2b	Event analysis	[ ] Yes, [ ] No				
2c	Static system model calibration and validation	[ ] Yes, [ ] No				
2d	Dynamic system model calibration and validation	[ ] Yes, [ ] No				
2e	Power plant model validation	[ ] Yes, [ ] No				
2f	Load characterization	[ ] Yes, [ ] No				
2g	Special protection schemes and islanding	[ ] Yes, [ ] No				
2h	Primary frequency (governing) response	[ ] Yes, [ ] No				



	OMB No.	1905-0129
Approval	<b>Expires:</b>	<b>XXIXXIXXX</b>
	Rurden	122 hours

Regional Entity: _	
Reporting Party:	

SCHEDULE 10. COMMENTS						
LINE NO.	Schedule (A)	Schedule Part (B)	Schedule Line No. (C)	Schedule Column (D)	Schedule Page (E)	Comment (F)
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						