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ORIGINAL



May 1, 2000

Ms. Blanca S. Bayo, Director  
Division of Records and Reporting  
Florida Public Service Commission  
2540 Shumard Oak Boulevard  
Tallahassee FL 32399-0870

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Dear Ms. Bayo:

Enclosed are an original and fifteen copies of Gulf Power Company's 1999 Cost of Service Load Research Study which is filed pursuant to Rule 25.6.0437(7).

Sincerely,

*Susan D. Ritenour (ew)*

Susan D. Ritenour  
Assistant Secretary and Assistant Treasurer

Iw

Enclosure

AFA \_\_\_\_\_  
APP \_\_\_\_\_  
CAF \_\_\_\_\_  
CMU \_\_\_\_\_  
CTR \_\_\_\_\_  
EAG \_\_\_\_\_  
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MAS \_\_\_\_\_  
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**ORIGINAL**

1999 Cost of Service  
Load Research Rule  
DOCKET NO. 820491-EU  
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Results of the  
1999 Cost of Service  
Load Research Study

DOCUMENT NUMBER-DATE  
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FPSC-RECORDS/REPORTING

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INTRODUCTION

The purpose of this document is to meet the filing requirements of the Cost of Service Load Research Rule, Docket No. 820491-EU, Order No. 13026, issued February 23, 1984, by the Florida Public Service Commission.

This rule requires the reporting of the results of each load research study conducted in accordance with the specifications of this rule within 120 days following completion of the study. The results reported within this report are for load research studies conducted between January 1, 1999, and December 31, 1999.

A rate data summary is provided on Tables 1A and 1B and provides a comparison of various significant variables between rate classes. The number of sample points for each rate class is provided in these tables, as well as the coincident system peak (CP) demand, summer and winter CP demands, and relative accuracies.

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TABLE 1A

Rate Data Summary  
1999

<u>Rate</u>	<u>Year End Customers</u>	<u>Annual MWh</u>	<u>% of Total</u>	<u>System CP kW (1999)</u>	<u>% of Total</u>
RS/RST	313,259	4,423,016	42.3%	1,020,301	47.0%
GS/GST	27,274	291,815	2.8%	77,618	3.6%
GSD/GSDT	13,540	2,164,644	20.7%	425,368	19.6%
LP	140	480,386	4.6%	78,644	3.6%
LPT	111	1,011,686	9.7%	223,760	10.3%
RTP	6	602,624	5.8%	19,567	0.9%
SBS	2	42,162	0.4%	0	0.0%
CISR/CSA	2	348,655	3.3%	40,221	1.9%
Others (1)	<u>9,217</u>	<u>1,087,658</u>	<u>10.4%</u>	<u>283,521</u>	<u>13.1%</u>
TOTAL	363,551	10,452,646	100.0%	2,169,000	100.0%

(1) Sales for Resale, Rates OS and PXT, unbilled, Interdepartmental,  
company use, losses and SEPA allocation.

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TABLE 1B

Rate Data Summary  
 1999

<u>Rate</u>	<u>Sample Points</u>	<u>% of Total</u>	<u>Summer CPKW</u>	<u>Relative Accuracy (%)</u>	<u>Winter CPKW</u>	<u>Relative Accuracy (%)</u>
RS/RST	225	25.2%	1,020,301	5.27	1,161,300	6.39
GS/GST	380	42.2%	77,618	6.00	63,444	9.66
GSD/GSDT	160	17.8%	425,368	4.47	268,752	9.22
LP	58	6.4%	78,644	5.07	63,453	6.75
LPT	49	5.4%	223,760	0.85	68,063	2.87
RTP	21	2.3%	19,567	0.00	121,302	0.00
SBS	2	0.2%	0	0.00	49,711	0.00
CISR/CSA	2	0.2%	40,221	0.00	33,900	0.00
Others (1)	<u>3</u>	<u>0.3%</u>	<u>283,521</u>	N/A	<u>263,075</u>	N/A
TOTAL	900	100.0%	2,169,000	N/A	2,093,000	N/A

(1) Sales for Resale, Rate OS, unbilled, Interdepartmental, company use, losses and SEPA allocation.

SAMPLE DESIGN METHODOLOGY

The Load Research Sampling Plan that was used in this study was approved by the Commission in 1998. The results of the 1997 load research study were utilized to determine estimates of variance for each rate class. These results provided a relatively accurate estimate of the variance, which was used in the sample design of the 1999 plan.

The combined ratio estimator methodology was used for the sample size estimates. The formulas for this plan are provided in Table 2. The definitions for the variables used in these formulas are provided in Table 3.

Stratified random sampling was used within each rate class design to achieve better accuracy with fewer sample points. The actual calculations for each rate class, which provide sample size determinations for both summer and winter peaks, are provided within the Cost of Service Load Research Plan submitted to the Commission for approval. Provided on Table 4 are the strata allocation and sample design for each rate class.

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TABLE 2  
 Formula for Sample Plan

I. Sample Size Estimates Using Combined Ratio Estimator:

$$n = \frac{\left[ \sum_{h=1}^L w_h \sqrt{F_h} \right]^2}{\frac{D^2 (T_y / N)}{1.65} + \frac{\sum_{h=1}^L w_h F_h}{N}}$$

$$F_h = \hat{S}_{yh}^2 + \frac{\hat{R}^2 \hat{S}_{xh}^2}{\hat{R}^2 \hat{S}_{xh}^2} - 2 \hat{R}_{rh} * \hat{S}_{yh} * \hat{S}_{xh}$$

$$\hat{T}_y = \hat{R} * \hat{T}_x$$

$$\hat{R} = \frac{\sum_{h=1}^L w_h \bar{Y}_h}{\sum_{h=1}^L w_h \bar{x}_h}$$

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III. Neyman Allocation of Sample Points to Strata

$$n_h = \frac{W_h S_{yh}}{\sum_{h=1}^L W_h S_{yh}} * n$$

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TABLE 3  
Definitions for Formulas

$n$  = Sample Size Estimate

$n_h$  = Stratum Sample Size

$w_h$  = Stratum Weight

$\hat{D}$  = Percent Relative Accuracy (0.1)

$\hat{T}_y$  = Estimated Population CPKW

$\hat{N}$  = Population Number of Customers

$R$  = Ratio Estimator

$T_x$  = Population kWh

$\bar{Y}_h$  = Stratum Average CPKW

$S_{yh}$  = Stratum Standard Deviation of CPKW

$\bar{x}_h$  = Stratum average monthly kWh

$s_{xh}$  = Stratum standard deviation of monthly kWh

$r_h$  = Stratum correlation coefficient between CPKW & Monthly kWh

Subscripts

$h$  = Stratum number

$y$  = CPKW variable

$x$  = Monthly kWh variable

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TABLE 4

**GULF POWER COMPANY**  
**1997 Cost of Service Load Research Rule Sample Size**

<u>Rate</u>	<u>Strata Allocation</u>	<u>Sample Size</u>	
RS	1) MF GT 900 kWh 2) MF 0-900 kWh 3) MH 4) SFD 1301-2000 kWh 5) SFD GE 2001 kWh 6) SFD 0-1300 kWh	20 21 28 47 53 56	
		TOTAL	<u>225</u>
GS	1) 0-600 kWh 2) 601-1400 kWh 3) 1401-2600 kWh 4) over 2600 kWh	77 94 94 115	
		TOTAL	<u>380</u>
GSD	1) 0-20.0 kW 2) 20.1-50.0 kW 3) 50.1-130.0 kW 4) over 130.0 kW	22 46 46 46	
		TOTAL	<u>160</u>
LP	1) Less than 800 kW 2) 800 kW and greater	30 28	(census)
		TOTAL	<u>58</u>
LPT	1) Less than 1000 kW 2) 1000 kW and greater	20 29	(census)
			<u>49</u>
PXT	1) All customers	1	(census)
RTP	1) All customers	21	(census)
SBS	1) All customers	2	(census)
CISR/CSA	1) All customers	2	
			<u>898</u>
	TOTAL		

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DATA ANALYSIS METHODOLOGY

Load profiles for each rate schedule were estimated using the combined ratio technique. The equation used to calculate the demand estimate for each hour of the year is provided below. The definitions for the variables for these formulas are provided in Table 5.

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Load profiles were balanced to territorial input as follows:

$$\begin{aligned} & (\text{Input kW}) - (\text{Losses}) - (\text{Rate 1 kW}) - (\text{Rate 2 kW}) - \dots \\ & - (\text{Rate}_n \text{kW}) = \text{Residual kW} \end{aligned}$$

This residual profile was distributed to the rate schedule profiles by allocating on the standard deviation(s) of the demand estimate, i.e.:

$$\text{Rate}_i \text{ kW} = \text{Rate}_i \text{ kw} + \frac{\text{Residual kW}}{S_1 + S_2 + \dots + S_i + \dots + S_n}$$

The coincident and non-coincident demands and residential load profile shown in this report have been adjusted per this balancing process. Confidence intervals and relative accuracies are based on unadjusted estimates of demand. The average of the estimated peak demand, confidence intervals, and relative accuracies are also based on unadjusted estimates of demand.

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TABLE 5  
Definitions for Formulas

$\wedge$

$T_y$  = Estimated Population Hourly kW

$\wedge$

$T_x$  = Population Monthly kWh

$\wedge$

R = Ratio Estimator

$W_h$  = Stratum Weight

$\bar{Y}_h$  = Stratum Sample Average Hourly kWh

$\bar{x}_h$  = Stratum Sample Average Monthly kWh

$V(T_y)$  = Estimated Variance of  $T_y$

$n_h$  = Stratum Number of Good Sample Points

$N_h$  =  $W_h n_h$ ; N = Population Number of Customers

$S_{yh}$  = Stratum Sample Standard Deviation of kW

$S_{xh}$  = Stratum Sample Standard Deviation of kWh

$r_h$  = Stratum Correlation Coefficient Between kW & kWh

$s = \sqrt{V(T_y)}$  = Estimated Standard Deviation of  $T_y$

Subscripts

h = Stratum number

L = Total Number of Strata

y = kW variable

x = kWh variable

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STUDY RESULTS

Provided on the following tables are the rate class estimated non-coincident and coincident peak kW demands for each month of the year 1999. The relative accuracy and the confidence interval at the 90% confidence level are also provided. Results for rate classes RS/RST, GS/GST, GSD/GSDT, LP, LPT, SBS, RTP, and CISR/CSA are included. Following this data are the 8760 hourly demands for rate class RS/RST for calendar year 1999. Provided also on Table 6 are the monthly coincident and non-coincident peak demands, dates and times.

**TABLE 6**  
**1999**  
**Coincident and Non-Coincident Peak Demand**  
**Days and Hours**

MONTH	Coincident Peak	Non-Coincident Peaks												CISA/CSR	
		RS	GS	GSD	LP	LPT	PXT	RTP	SBS						
JAN	5 0800	5 0800	5 1100	5 1100	21 1400	21 1600	22 1300	18 1100	2 1500	30 2200					
FEB	22 0800	22 0700	22 1000	9 1400	9 1400	10 1400	18 2000	11 1400	22 1400	1 1300					
MAR	15 0900	4 0700	15 1000	18 1400	31 1400	25 1200	2 1600	25 1000	31 2200	26 1200					
APR	24 1700	25 1700	29 1200	29 1200	27 1100	28 1500	28 1000	28 1000	29 1400	2 0100					
MAY	25 1700	22 1800	26 1500	26 1500	28 1400	28 1400	30 1600	18 1400	28 1100	24 1300					
JUN	4 1500	30 1800	30 1500	22 1500	15 1400	22 1400	1 1400	29 1600	1 2300	18 2100					
JUL	28 1700	31 1800	8 1500	29 1500	29 1400	29 1500	20 1300	22 2000	5 1400	25 0300					
AUG	13 1600	13 1800	2 1400	12 1400	19 1400	12 1400	8 1600	8 0100	14 2000	18 2300					
SEP	7 1600	5 1500	8 1500	8 1500	8 1400	28 1500	2 1000	28 1300	29 1100	30 2000					
OCT	3 1600	3 2000	14 1600	6 1600	13 1400	12 1500	4 1100	11 1100	20 0800	31 2200					
NOV	4 0700	4 0700	10 1500	23 1500	10 1400	10 1400	23 1300	12 2100	8 1600	1 1900					
DEC	2 0700	28 0800	17 1100	9 1400	13 1100	9 1500	5 1000	28 1300	23 0300	7 0900					

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LOAD RESEARCH DATA  
RATE SCHEDULE RS/RST  
January 1999 to December 1999

1999	Estimated NonCoincident Peak (KW)			90% Confidence Interval (KW)			Estimated Coincident Peak (KW)			90% Confidence Interval (KW)		
	Relative	%	Accuracy	Relative	%	Accuracy	Relative	%	Accuracy	Relative	%	
JAN	1165854	81364	6.88	1161300	75947	6.39						
FEB	931524	74152	8.22	895680	72874	8.26						
MAR	763048	66472	9.12	631755	61928	10.62						
APR	817841	56451	7.06	783631	53668	7.34						
MAY	845712	49049	6.13	788312	45931	6.33						
JUN	967132	50543	5.24	872924	52328	6.08						
JUL	1106899	61381	5.58	1044576	51178	4.96						
AUG	1086778	55620	5.27	1020301	57676	5.57						
SEP	997529	51924	5.16	885090	38475	4.42						
OCT	831430	54223	6.30	831430	54223	6.30						
NOV	725348	82628	11.77	725348	82628	11.77						
DEC	911276	83594	8.60	822789	72947	9.47						
AVG					830127		25698		3.10			

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 LOAD RESEARCH DATA  
 RATE SCHEDULE GS/GST  
 January 1999 to December 1999

1999	Estimated NonCoincident			Estimated Coincident		
	Peak (KW)	90% Interval (KW)	Relative Accuracy %	Peak (KW)	90% Interval (KW)	Relative Accuracy %
JAN	86798	9328	11.89	63444	6345	9.66
FEB	75148	9810	13.91	42788	4519	10.78
MAR	65027	7926	12.71	59053	5965	10.97
APR	66819	3824	6.13	41070	4212	10.08
MAY	74394	5161	7.63	70605	3917	6.01
JUN	79663	5610	7.18	78879	4884	6.29
JUL	85248	4877	5.98	76052	4714	6.29
AUG	85205	4809	6.03	77618	4725	6.00
SEP	75937	4583	6.34	75625	4407	5.97
OCT	66003	4180	6.54	34209	3076	8.58
NOV	55411	3628	6.85	29822	4135	14.43
DEC	55856	5478	10.13	32520	3486	11.62
AVG				53674	2267	4.22

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LOAD RESEARCH DATA  
RATE SCHEDULE GSD/GSDT  
January 1999 to December 1999

1999	Estimated NonCoincident			Estimated Coincident		
	Peak (KW)	90% Confidence Interval (KW)	Relative Accuracy %	Peak (KW)	90% Confidence Interval (KW)	Relative Accuracy %
JAN	343275	25205	7.86	268752	25602	9.22
FEB	318117	15206	4.89	240470	18934	7.99
MAR	302378	19890	7.17	280287	18736	7.06
APR	362473	17954	5.26	305337	17335	5.79
MAY	408907	19734	5.24	383366	18955	5.30
JUN	408771	16143	3.99	406042	19881	4.96
JUL	450039	17659	4.08	420718	16715	4.01
AUG	442976	20979	4.81	425368	19226	4.47
SEP	427099	19415	4.72	418299	17462	4.25
OCT	362169	23055	6.58	286666	14866	5.05
NOV	329715	17385	5.71	197945	16251	8.40
DEC	298801	16405	5.71	212057	15447	7.69
AVG				308090	9274	3.01

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 RATE SCHEDULE LP  
 January 1999 to December 1999

1999	Estimated NonCoincident Peak (KW)			90% Confidence Interval (KW)			Estimated Coincident Peak (KW)			90% Confidence Interval (KW)		
	Relative	Accuracy	%	Relative	Accuracy	%	Relative	Accuracy	%	Relative	Accuracy	%
JAN	73351	3460	5.01		63453	4389	6.75					
FEB	72565	3097	4.35		65715	4014	6.18					
MAR	67805	3089	4.77		65789	3731	5.94					
APR	81884	4218	5.41		62069	3177	5.27					
MAY	85018	3668	4.61		76431	2264	3.09					
JUN	92345	15348	17.38		78029	3045	3.94					
JUL	86764	4141	5.13		79428	3633	4.63					
AUG	87495	5216	6.22		78644	4038	5.07					
SEP	88487	3679	4.34		80361	2156	2.71					
OCT	77414	3571	4.75		55632	2953	5.16					
NOV	72299	3411	5.05		52964	2467	4.72					
DEC	67014	3529	5.55		56510	2594	4.75					
AVG					67138	2101	3.13					

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LOAD RESEARCH DATA  
RATE SCHEDULE LPT  
January 1999 to December 1999

1999	Estimated NonCoincident Peak (KW)			90% Confidence Interval (KW)			Estimated Coincident Peak (KW)			90% Confidence Interval (KW)		
	Relative	Accuracy %	Relative	Accuracy %	Relative	Accuracy %	Relative	Accuracy %	Relative	Accuracy %	Relative	Accuracy %
JAN	73593	1380	1.92	68063	1974	2.87						
FEB	70858	1650	2.34	62396	1564	2.52						
MAR	73185	1140	1.57	67003	1334	2.02						
APR	79854	1195	1.52	72161	1292	1.64						
MAY	90115	1978	2.24	85148	1706	2.06						
JUN	205503	1467	0.72	200350	1142	0.57						
JUL	213236	1544	0.73	203831	1444	0.71						
AUG	229293	2328	1.03	223760	1908	0.85						
SEP	213262	1532	0.72	208087	1307	0.63						
OCT	197015	1837	0.94	174008	2683	1.53						
NOV	171395	1938	1.15	136518	1334	0.98						
DEC	165949	1699	1.02	144304	1096	0.76						
AVG				136802	849	0.62						

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RATE SCHEDULE RTP  
January 1999 to December 1999

1999	Estimated NonCoincident Peak (KW)			90% Confidence Interval (KW)			Estimated Coincident Peak (KW)			90% Confidence Interval (KW)		
	Relative Accuracy	%	Relative Accuracy	%	Relative Accuracy	%	Relative Accuracy	%	Relative Accuracy	%	Relative Accuracy	%
JAN	138283	0	0.00	121302	0	0.00	121302	0	0.00	121302	0	0.00
FEB	148065	0	0.00	109250	0	0.00	109250	0	0.00	109250	0	0.00
MAR	144522	0	0.00	112342	0	0.00	112342	0	0.00	112342	0	0.00
APR	165819	0	0.00	137273	0	0.00	137273	0	0.00	137273	0	0.00
MAY	173200	0	0.00	125793	0	0.00	125793	0	0.00	125793	0	0.00
JUN	64409	0	0.00	30503	0	0.00	30503	0	0.00	30503	0	0.00
JUL	49887	0	0.00	25402	0	0.00	25402	0	0.00	25402	0	0.00
AUG	49742	0	0.00	19567	0	0.00	19567	0	0.00	19567	0	0.00
SEP	55124	0	0.00	18960	0	0.00	18960	0	0.00	18960	0	0.00
OCT	57903	0	0.00	33921	0	0.00	33921	0	0.00	33921	0	0.00
NOV	61858	0	0.00	19287	0	0.00	19287	0	0.00	19287	0	0.00
DEC	52728	0	0.00	14033	0	0.00	14033	0	0.00	14033	0	0.00
AVG				63969			63969			63969		0.00

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RATE SCHEDULE SBS  
January 1999 to December 1999

1999	Estimated NonCoincident Peak (KW)			90% Confidence Interval (KW)			Estimated Coincident Peak (KW)			90% Confidence Interval (KW)		
	Relative Accuracy %			Relative Accuracy %			Relative Accuracy %			Relative Accuracy %		
JAN	55453	0	0.00		49711	0		0.00			0.00	
FEB	25986	0	0.00			0	0	0.00			0.00	
MAR	59731	0	0.00			0	0	0.00			0.00	
APR	38093	0	0.00			0	0	0.00			0.00	
MAY	60984	0	0.00			0	0	0.00			0.00	
JUN	59071	0	0.00			0	0	0.00			0.00	
JUL	350	0	0.00			0	0	0.00			0.00	
AUG	1225	0	0.00			0	0	0.00			0.00	
SEP	58588	0	0.00			0	0	0.00			0.00	
OCT	56925	0	0.00			400	0	0.00			0.00	
NOV	53916	0	0.00			0	0	0.00			0.00	
DEC	300	0	0.00			0	0	0.00			0.00	
AVG						4176	0				0.00	

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 Rate Schedule CSA  
 January 1999 to December 1999

1999	Estimated NonCoincident Peak (KW)			90% Confidence Interval (KW)			Relative Accuracy %		
	Estimated Peak (KW)	90% Confidence Interval (KW)	Relative Accuracy %	Estimated Peak (KW)	90% Confidence Interval (KW)	Relative Accuracy %	Estimated Peak (KW)	90% Confidence Interval (KW)	Relative Accuracy %
JAN	39594	0	0.00	33900	0	0.00			
FEB	39530	0	0.00	26712	0	0.00			
MAR	39318	0	0.00	34664	0	0.00			
APR	40056	0	0.00	38368	0	0.00			
MAY	42871	0	0.00	36928	0	0.00			
JUN	50430	0	0.00	45896	0	0.00			
JUL	53879	0	0.00	39921	0	0.00			
AUG	41371	0	0.00	40221	0	0.00			
SEP	41064	0	0.00	37751	0	0.00			
OCT	54339	0	0.00	41152	0	0.00			
NOV	54366	0	0.00	52605	0	0.00			
DEC	46286	0	0.00	44985	0	0.00			
AVG				39425	0	0.00			





















1999 Cost of Service  
Load Research Rule  
DOCKET NO. 820491-EU  
GULF POWER COMPANY  
April 28, 2000  
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GULF POWER COMPANY  
RATE SCHEDULE RS/RST  
JANUARY 1, 1999 TO DECEMBER 31, 1999  
HOURLY DEMANDS (KW)

121399	391325	377593	383141	379711	477451	520659	504875	504551	480569	429486	359922	281782
	238834	217223	211523	215734	242093	334834	397228	386677	343985	318577	315614	326533
	330908	319573	317205	358259	447630	515880	522504	512380	494150	444167	367330	311647
121499	279877	277759	274248	290509	354979	498189	565379	522529	431616	363861	343059	323627
	300583	292103	283684	320628	338622	368541	563776	579729	565106	531021	474178	401198
121599	376927	378731	363748	363021	404528	502411	551182	491861	409910	353529	304047	274274
	262181	286351	288823	317343	403760	490730	532517	528013	522055	515386	452006	400329
121699	384446	384346	402104	447785	514137	660103	747655	710897	589983	509311	446092	356790
	335719	314849	320801	347525	542947	644896	678163	694041	680262	657644	588502	539292
121799	520116	529202	542279	567864	615340	741894	797112	752917	639227	570267	514567	454657
	443449	419845	420071	454934	560108	632798	642686	617652	602312	562456	504250	456298
121899	434546	434093	429628	445073	473108	504784	577040	632082	625153	577513	511876	453376
	438163	465501	480867	519824	584156	583904	552031	507830	492667	453079	401571	343615
121999	306358	295084	299640	304363	321075	346574	377658	473886	510845	515101	497940	486131
	491359	474938	460223	477233	566288	574821	563506	550567	523821	481287	411174	338837
122099	312699	311722	313109	326274	374435	469567	519780	525276	507632	476329	432496	375029
	348924	346040	338049	335398	448302	532797	563686	541894	507704	484316	429129	358248
122199	313327	305221	301972	319779	350662	433362	493774	510608	501066	486303	464920	460203
	437568	423720	430842	455480	519221	576630	606165	608531	591564	540743	482316	431075
122299	399597	397017	409074	427558	484249	575701	641107	657617	635502	606728	576727	521558
	488835	459852	430971	457564	568119	668606	693595	688705	678184	660297	589863	548871
122399	534069	532499	543209	580936	621986	705710	777656	780416	730357	678139	591195	531599
	466782	444114	427337	435877	549714	651695	671117	701169	708285	701490	660371	636271
122499	626116	612362	609143	638422	677990	726357	808327	850424	789781	698468	610060	529977
	476478	442272	441112	465013	530344	574880	593231	590556	617570	630631	601730	545712
122599	525093	521823	532853	569398	608575	684921	767387	864334	854618	817781	754698	692434
	607428	548926	512101	517444	596213	672235	729489	759334	779276	762482	730791	702554
122699	697619	702515	718949	747446	777831	815805	878039	911276	851454	743422	658128	583790
	549592	505019	462958	474893	566820	665387	681947	674864	667157	630513	573807	509785
122799	503145	491529	506147	530131	604939	702082	767421	772296	681809	609863	536480	466246
	435266	398062	389131	397655	505100	601673	614036	626613	605599	574554	523519	474235
122899	449686	443047	465556	492295	559564	668800	725322	734305	684568	640368	573862	518767
	477008	434548	448066	482811	606088	719331	742982	756189	740251	686567	617819	575097
122999	551784	547691	544812	581390	636150	720783	800653	787357	686135	610946	518276	473322
	440594	403260	394998	419281	525629	626543	646913	638154	651340	641335	590103	535481
123099	516148	519132	519657	551787	598673	679183	749895	737523	662219	551649	480159	410941
	374052	356067	340748	350108	426416	532899	550937	545317	534690	488240	461614	395820
123199	355216	345674	347472	349069	360205	391792	433570	497962	507683	501330	488492	451810
	448117	421626	424445	430302	516515	571405	540692	504350	449050	419506	381883	356761