Gulf Coast Electric Cooperative
Before the Florida Public Service Commission
Direct Testimony of
Jeff Parish
Docket No. [redacted]
Date of Filing: May 24, 1994

Q: Please state your name and address.

A: My name is Jeff Parish. My business address is P. O. Box 550, Andalusia, Alabama 36420.

Q: By whom are you employed?

A: I'm employed by Alabama Electric Cooperative.

Q: In what capacity are you employed?

A: I am Vice President of Bulk Power and Delivery. In that capacity, I have responsibilities in the areas of generation and transmission planning, load forecasting, environmental compliance, and contracts with other utilities.

Q: What will be the subject of your testimony in this proceeding?

A: I will testify regarding the impact of the prison load on Gulf Coast Electric Cooperative, Alabama Electric Cooperative, and Gulf Power Company. I will describe the effect of the load's coincidence on Gulf Coast, AEC, Gulf Power Company, and the Southern Company. I will describe the effects of pool purchases and sales in the Southern

Company pool of this load on Gulf Power Company. I will also discuss the substation reliability of AEC's substation serving the area vs. those of Gulf Power Company.

Coincidence and Cost

Q: What load is estimated at the prison?

A: Gulf has estimated 372 kilowatts. We, for comparison purposes, are using the same estimate. This amount is the estimated load at the meter at the prison.

Q: Please describe how AEC sells power to Gulf Coast.

A: AEC meters the peak loads and total energy at the substation and sells to Gulf Coast at a monthly rate for the peak load during the month, regardless of when the demand occurs. We sell energy on an average cost basis to Gulf Coast.

Q: What effect will that load have on Gulf Coast Electric Cooperative as far as its purchase of capacity from AEC?

A: The purchases from AEC will be the contribution of the load metered at the prison to the substation peak plus line losses to the Crystal Lake Substation where AEC meters capacity and energy for sale to Gulf Coast.

Q: When do substations on the Gulf Coast system normally

peak?

A: They normally peak at the hour ending 6:00 o'clock p.m. This is the same time as AEC's normal summer weekday peak. During the winter, AEC substations usually peak in the early morning hour ending at 7:00 a.m.

Q: Of what importance is this to power purchases by Gulf Coast from AEC?

A: We believe the peak load in the summer at the prison will occur in the early to mid-afternoon and be considerably lower at the time of the substation peak in late afternoon. This diversity in loads will result in a lower amount of capacity purchased from AEC than is required to serve the prison load due to this diversity.

Q: Have you estimated what this impact will be in kilowatts?

A: Yes. We have analyzed the hourly load shape of a prison served by an AEC member in Alabama which we believe to have similar load characteristics to the proposed prison in this case. In the summertime, the peak load of the prison normally occurs in early afternoon from 1:30-3:30 p.m. Only about 65 percent of that load occurs during the hour ending 6:00 p.m. when the Gulf Coast substation

would be expected to peak. Therefore, we believe the peak capacity purchased by Gulf Coast from AEC would be about 65 percent of the peak load plus a factor for losses, approximately 258 kilowatts in the peak summer month.

Q: Using this approach, what is the estimated impact in winter and other months?

A: The diversity is different. We estimate it to be approximately 70 percent.

Q: What is resulting annual dollar impact of these capacity purchases by Gulf Coast?

A: We estimate the cost of purchases to be as described in Gulf Coast's response 3(a) to Staff's request for production of documents, ranging from $27,246 in 1995 to $28,440 in 1988.

Q: What will this load's impact be on Gulf Power Company?

A: We believe there is little or no diversity of this load with Gulf Power Company's monthly peaks. Gulf Power peaks at different times compared to AEC. We believe the prison peak loads are at the same time as Gulf Power's Peaks. We, therefore, estimate the contribution to Gulf Power's monthly peaks to be the monthly loads times a loss factor from the prison meter through the distribution and transmission systems of Gulf Power to

the generation level of approximately 1.07. In other words, the diversity factor is approximately 1.0, (there is no diversity) and the loss factor is approximately 1.07. The resulting contribution to Gulf Power's peak in the summer is approximately 398 KW, compared to Gulf Coast peak purchases from AEC of 258 KW, and the metered load at the prison of 372 KW.

Q: Why is this important?

A: The monthly peak demands of Gulf Power Company are a factor in determining Gulf's capacity responsibility in the Southern Company pool each month.

Q: Would you describe how that pool operates regarding capacity purchases and sales?

A: The Southern Company pool is composed of five operating companies. They are Mississippi Power Company, Gulf Power Company, Alabama Power Company, Georgia Power Company, and the Savannah Electric and Power Company. They equalize reserves each month based upon the loads and capacities of the parties. In other words, they share whatever reserves exist on the system among themselves whether the system is long or short as far as planned vs. actual reserve. In simple terms, each company's load and capacity responsibility in the pool is determined each month. If a company is "long" compared

to the pool, it sells capacity to the pool. If it is "short", it purchases from the pool.

Q: Suppose Gulf Power has more than enough capacity to serve its loads with adequate reserves. Would it still have to purchase from the pool?

A: It would if the pool were even more excess than Gulf Power. There is a purchase and sale each month regardless of whether an individual company might consider itself long or short. It depends upon the total pool.

Q: What do you think about Gulf Power's answer to staff's interrogatory 1(e) where Gulf Power stated it has adequate reserves to serve this load and would not have to purchase additional capacity nor install additional generation to serve the load?

A: I agree with it in part. A load of this size, less than 500 KW, is very small to Gulf Power Company and the Southern Company pool. I agree that Southern Company's generation expansion plan and any purchases or sales by Southern Company would not be impacted by a load this small. However, Gulf Power has a Southern Company pool responsibility each month that will be impacted by this load. Gulf Power will either lose pool revenue or purchase additional capacity from the pool as a result of

the prison load.

Q: What about AEC's ability to serve this load and the effect it might have on AEC's generation expansion plan and its purchases and sales?

A: AEC would also not alter its generation expansion plan or system purchases and sales it might make because of a load this small. AEC is in the same position of Southern Company on a load this small in that regard.

Q: Would you describe what Gulf Power would have to purchase?

A: I have previously described the pool equalization in general. As a practical matter, it is much more complex as far as the details of the calculation. The historical load ratios of all the member companies for the last three years are applied to the total pool peak load for each current month to determine each company's load responsibility in the pool that month. Those historical load ratios are the peak loads of each company for that month not coincident with the pool. Each company's capacity requirements including reserves are then calculated in detail. Its generation capacity to meet that load is also determined each month. If Gulf has excess capacity after meeting its load and reserve requirement compared to the pool, then it sells to the

pool. If it is short compared to the pool, it purchases from the pool. Each operating company sells capacity to the pool at its average embedded cost of fossil steam, combustion turbine and pumped storage hydro facilities. It purchases capacity from the pool at the average capacity cost sold to the pool from other companies. The net purchases and sales to and from the pool net to zero each month under this capacity equalization methodology. Using this methodology, nuclear facilities and conventional hydro facilities are excluded from sales among pool members. These type facilities are essentially retained by each pool member owning them.

Q: How have you calculated these purchases and sales of Gulf Power to and from the pool?

A: As I indicated, a complex calculation is done each month. We do not have the data from Southern Company to make this calculation in detail for future years because it involves a projection of loads, resources, and costs. However, I have estimated or approximated the monthly and annual impact on Gulf from the details contained in the information filing Southern Company makes each year to the Federal Energy Regulatory Commission (FERC), under the Southern Company Intercompany Interchange Contract. Exhibit A is one of the monthly calculations in 1994 where Gulf Power sells to the pool and another month

during 1994 where Gulf Power purchases from the pool.

Q: You mean Gulf Power may sell to the pool some months and buy from the pool other months during the same year?

A: Yes. It depends primarily upon the peak loads of each company during each month compared to the others, not the annual peak.

Q: Have you calculated the dollar impact of these purchase and sales on Gulf Power Company involved in equalization in the pool operation?

A: Yes.

Q: Please describe how you did it.

A: We have duplicated the spreadsheet contained in the 1994 IIC filing for a summer month and have used it to adjust for this load. We added the monthly load to Gulf Power's peak, adjusted the pool total load allowing for historical diversity, adjusted the historical load data to include this load which will be the normal case after the first three years of operation, and calculated the effect on Gulf Power's capacity responsibility and pool purchases and sales. We used the result from this month to estimate the effect for the other eleven months using the smaller loads expected at the prison in other months. We utilized the rates in the 1994 IIC for purchase and sales to determine the capacity cost. We assume this

relationship in loads, capacity and rates for future months and years. This is obviously an estimated or approximate calculation and is intended to approximate the effect on Gulf Power and at least demonstrate that Gulf Power actually has a capacity cost impact associated with this load.

Q: What are the dollar impacts?

A: The typical annual capacity cost to Gulf Power for increased purchases and lost sales with the pool based upon 1994 rates was calculated to be $29,251. This amount compares to the cost of purchases by Gulf Coast from AEC ranging from $27,246 in 1995 to $28,440 in 1998. These numbers are virtually the same given the accuracy of estimating the components.

Q: You have described Gulf Power's capacity cost associated with this load. Where does Gulf Power get the energy for this type of load?

A: It is difficult to say with any precision where Gulf Power would obtain the energy for this load. The Southern Company pool members operate under economic dispatch on the whole Southern system. All the generating resources on the system are dispatched so that the lowest cost resources on the system are utilized to serve the total system load regardless of where the load

is located. A generating unit in Georgia may generate energy for Gulf Power in Florida. The source and cost of the energy would be difficult to ascertain.

Q: Where would AEC get the energy?

A: AEC does not operate in economic dispatch with other parties. AEC does, however, dispatch its resources to most economically meet its own load. AEC has its own generation and purchases from other utilities to meet its load from time to time. We purchase power typically at times from generation and transmission cooperatives in Louisiana, Mississippi, Kentucky, and Georgia. We also purchase from the Entergy system routinely. Some of the energy might be generated by AEC and some by these other sources, depending upon the lowest cost energy supply at the time. Therefore, it difficult to say precisely the source and cost of the energy. For calculation purposes we have used our estimated annual energy cost to calculate the cost of energy for this load to Gulf Coast.

Transmission and Substation Reliability

Q: Would you describe how transmission service is provided to the Crystal Lake Substation by AEC?

A: AEC owns the substation and transmission in the area. The Crystal Lake Substation is the source of a three

phase feeder of Gulf Coast serving the prison area. AEC has an extensive transmission system in Northwest Florida, mostly 115kV. The 115kV system has loop feed from two directions into the Crystal Lake Substation. At various transmission substations in Florida, automatic circuit breakers are installed that will isolate a faulted line segment and leave the remaining portion of the system in service. We design our transmission system to withstand any single contingency and still provide service to the remainder of the system. Therefore, a permanent fault on another part of the system in Florida, or Alabama for that matter, would leave the unfaulted line segment on serving the Crystal Lake Substation.

Q: What line segment are you talking about?

A: In this case, the automatic circuit breakers are at the Freeport transmission substation on the west end and the Fountain transmission substation on the east end.

Q: What if a outage occurred on the Freeport-Fountain line?

A: The Crystal Lake substation would lose power momentarily. However, there are motor operated switches that can be operated remotely from the AEC control center to isolate the problem on the line. The dispatchers will determine which section of the line is faulted, isolate that section, and then restore service from the opposite

direction. This process only takes a few minutes.

Q: How does Gulf Power serve the Sunny Hills and Vernon Substations which are the sources for the Gulf Power distribution feeders serving the prison load area?

A: Gulf Power has radial 115kV lines to its Vernon and Sunny Hills substations. If they lose service on the transmission line serving either of those substations, they have to repair the line or reroute power to the prison area through the other substation. We believe this requires dispatching personnel to the area and performing manual switching, a process that can be very time consuming. The Gulf Power substation reliability is therefore potentially much less reliable than that of AEC.

Q: Does this conclude your testimony?

A: Yes, subject to any additional information we obtain from discovery.

AFFIDAVIT

STATE OF ALABAMA)

COUNTY OF COVINGTON)

Docket No. 930885-EU

Before me the undersigned authority, personally appeared Jeff Parish, who being first duly sworn, deposes and says that he is the Vice President of Bulk Power and Delivery of Alabama Electric Cooperative, Inc., Andalusia, Alabama, that the foregoing is true and correct to the best of his knowledge, information, and belief. He is personally known to me.

Jeff Parish

Jeff Parish, Vice President
Bulk Power and Delivery

Sworn to and subscribed before me this 20th day of May, 1994.

Carol C. Welch

Notary Public

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished to:

Jeffrey A. Stone, Esq.
Teresa E. Liles, Esq.
Edison Holland, Esq.
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Martha Carter Brown, Esq.
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by U.S. Mail this 24 day of May, 1994.

Of Counsel

RUN DATE 10/21/93
RUN TIME 10:57:37

THE SOUTHERN SYSTEM
MONTHLY ESTIMATED LOAD-CAPACITY COMPARISON
AUGUST , 1994

ALL FIGURES IN MW

	ALABAMA	GEORGIA	GULF	MISSISSIPPI	SAVANNAH	SYSTEM
1. LOADS						
(A) NON-COINCIDENT HOUR DEMANDS	9,343.0	13,978.0	1,889.0	1,779.0	663.0	27,436.0
(B) HISTORICAL LOAD RATIO	34.5100%	49.6262%	6.8950%	6.5552%	2.4136%	100.0000
(C) CO. LOAD RESPONSIBILITY	9,468.2	13,615.4	1,891.7	1,798.5	662.2	27,436.0
2. OWNED CAPACITY						
(A) CONTRACT PURCHASES/(SALES)	256.0	(647.5)	8.0	62.0	0.0	(321.5
(B) DSO CAPACITY EQUIVALENTS	527.2	367.9	0.0	2.5	16.9	914.5
(C) CONVENTIONAL HYDRO CAPACITY	1,584.5	662.1	0.0	0.0	0.0	2,246.6
(D) PUMPED STORAGE HYDRO	0.0	210.4	0.0	0.0	0.0	210.4
(E) NUCLEAR CAPACITY	1,639.8	2,736.0	0.0	0.0	0.0	4,375.8
(F) COAL FIRED STEAM CAPACITY	6,505.6	10,700.0	2,013.2	1,530.7	391.9	21,141.4
(G) OIL AND GAS FIRED STEAM CAPACITY	49.0	294.8	86.1	450.5	224.7	1,105.1
(H) COMBUSTION TURBINE CAPACITY	8.8	1,419.6	35.2	70.2	223.8	1,757.6
(I) TOTAL GENERATING CAPACITY	10,570.9	15,743.3	2,142.5	2,115.9	857.3	31,429.9
3. EQUIVALENT UNAVAILABILITY FACTORS						
(A) CONVENTIONAL HYDRO	1.31%	1.31%	1.31%	1.31%	1.31%	0.00
(B) PUMPED STORAGE HYDRO	0.02%	0.02%	0.02%	0.02%	0.02%	0.00
(C) FOSSIL	3.10%	3.10%	3.10%	3.10%	3.10%	0.00
4. EQUIVALENT UNAVAILABILITY						
(A) CONVENTIONAL HYDRO	20.8	8.7	0.0	0.0	0.0	29.5
(B) PUMPED STORAGE HYDRO	0.0	0.0	0.0	0.0	0.0	0.0
(C) NUCLEAR	50.8	84.8	0.0	0.0	0.0	135.6
(D) COAL FIRED STEAM	201.7	331.7	62.4	47.5	12.1	655.4
(E) OIL AND GAS FIRED STEAM	1.5	9.1	2.7	14.0	7.0	34.3
(F) COMBUSTION TURBINE	0.3	44.0	1.1	2.2	6.9	54.5
(G) TOTAL UNAVAILABLE CAPACITY	275.1	478.3	66.2	63.7	26.0	909.3
5. EFFECTIVE LOAD SERVED BY CAPACITY						
(A) CONTRACT PURCHASES/(SALES)	256.0	(647.5)	8.0	62.0	0.0	(321.5
(B) DSO CAPACITY EQUIVALENTS	527.2	367.9	0.0	2.5	16.9	914.5
(C) CONVENTIONAL HYDRO	1,563.7	653.4	0.0	0.0	0.0	2,217.1
(D) NUCLEAR	1,589.0	2,651.2	0.0	0.0	0.0	4,240.2
(E) COAL, OIL, GAS, PSH, CT	5,532.3	10,590.4	1,883.7	1,734.0	645.3	20,385.7
(F) TOTAL	9,468.2	13,615.4	1,891.7	1,798.5	662.2	27,436.0

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THE SOUTHERN SYSTEM
MONTHLY ESTIMATED LOAD-CAPACITY COMPARISON
AUGUST , 1994

ALL FIGURES IN MW

	ALABAMA	GEORGIA	GULF	MISSISSIPPI	SAVANNAH	SYSTEM
6. LOAD OUTAGES BY TYPE						
(A) CONVENTIONAL HYDRO	20.8	8.7	0.0	0.0	0.0	29.5
(B) NUCLEAR	50.8	84.8	0.0	0.0	0.0	135.6
(C) COAL, OIL, GAS, PSH, CT	177.0	332.9	60.3	55.6	20.6	646.4
(D) AVG COAL, OIL GAS, PSH, CT UNAVAILABILITY RATES	3.10%	3.05%	3.10%	3.11%	3.09%	3.07
(E) TOTAL	248.6	426.4	60.3	55.6	20.6	811.5
7. CALCULATION OF RESERVES						
(A) TOTAL OWNED CAPACITY	10,570.9	15,743.3	2,142.5	2,115.9	857.3	31,429.9
(B) LESS LOAD SERVED BY CAPACITY	9,468.2	13,615.4	1,891.7	1,798.5	662.2	27,436.0
(C) LESS LOAD OUTAGES BY TYPE	248.6	426.4	60.3	55.6	20.6	811.5
(D) TOTAL RESERVES	854.1	1,701.5	190.5	261.8	174.5	3,182.4
(E) RESERVE PERCENT (%)	9.02%	12.50%	10.07%	14.56%	26.35%	11.60
8. RESERVE PURCHASES/(SALES)						
(A) RESERVE RESPONSIBILITY	1,098.3	1,579.3	219.4	208.6	76.8	3,182.4
(B) TOTAL AVAILABLE RESERVES	854.1	1,701.5	190.5	261.8	174.5	3,182.4
(C) RESERVE PURCHASE/(SALES) MW-MONTHS	244.2	(122.2)	28.9	(53.2)	(97.7)	0.0
(D) CO. MONTHLY CAPACITY RATES ($/KW)	7.175667	5.041750	6.233250	6.262249	5.894500	
(E) CO. SELLING CAPACITY RATE ($/KW)	0.000000	5.041750	0.000000	6.262249	5.894500	
(F) CO. COMPOSITE PURCHASE RATE ($/KW)	5.584570	0.000000	5.584570	0.000000	0.000000	
(G) DOLLARS	1,363,752	(616,102)	161,394	(333,151)	(575,893)	0

( ) INDICATES SALES TO POOL

1994 INTERCOMPANY INTERCHANGE CONTRACT

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THE SOUTHERN SYSTEM
MONTHLY ESTIMATED LOAD-CAPACITY COMPARISON
APRIL ,1994

ALL FIGURES IN MW

	ALABAMA	GEORGIA	GULF	MISSISSIPPI	SAVANNAH	SYSTEM
6. LOAD OUTAGES BY TYPE						
(A) CONVENTIONAL HYDRO	3.3	1.4	0.0	0.0	0.0	4.7
(B) NUCLEAR	372.2	642.2	0.0	0.0	0.0	1,014.4
(C) COAL, OIL, GAS, PSH, CT	880.2	2,212.4	382.4	336.4	139.5	3,950.9
(D) AVG COAL, OIL GAS, PSH, CT UNAVAILABILITY RATES	22.70%	22.37%	22.69%	22.70%	22.70%	22.51
(E) TOTAL	1,255.7	2,856.0	382.4	336.4	139.5	4,970.0
7. CALCULATION OF RESERVES						
(A) TOTAL OWNED CAPACITY	10,207.7	15,598.7	2,129.2	2,109.0	824.1	30,868.7
(B) LESS LOAD SERVED BY CAPACITY	6,616.2	10,209.2	1,310.7	1,207.8	475.1	19,819.0
(C) LESS LOAD OUTAGES BY TYPE	1,255.7	2,856.0	382.4	336.4	139.5	4,970.0
(D) TOTAL RESERVES	2,335.8	2,533.5	436.1	564.8	209.5	6,079.7
(E) RESERVE PERCENT (%)	35.30%	24.82%	33.27%	46.76%	44.10%	30.68
8. RESERVE PURCHASES/(SALES)						
(A) RESERVE RESPONSIBILITY	2,029.6	3,131.8	402.1	370.5	145.7	6,079.7
(B) TOTAL AVAILABLE RESERVES	2,335.8	2,533.5	436.1	564.8	209.5	6,079.7
(C) RESERVE PURCHASE/(SALES) MW-MONTHS	(306.2)	598.3	(34.0)	(194.3)	(63.8)	0.0
(D) CO. MONTHLY CAPACITY RATES ($/KW)	6.990083	5.049167	6.195583	6.218166	5.853750	
(E) CO. SELLING CAPACITY RATE ($/KW)	6.990083	0.000000	6.195583	6.218166	5.853750	
(F) CO. COMPOSITE PURCHASE RATE ($/KW)	0.000000	6.573077	0.000000	0.000000	0.000000	
(G) DOLLARS	(2,140,363)	3,932,672	(210,650)	(1,208,190)	(373,469)	0

( ) INDICATES SALES TO POOL

1994 INTERCOMPANY INTERCHANGE CONTRACT

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ALL FIGURES IN MW

	ALABAMA	GEORGIA	GULF	MISSISSIPPI	SAVANNAH	SYSTEM
1. LOADS						
(A) NON-COINCIDENT HOUR DEMANDS	6,639.0	10,545.0	1,206.0	1,167.0	415.0	19,819.0
(B) HISTORICAL LOAD RATIO	33.3832%	51.5121%	6.6132%	6.0942%	2.3973%	100.0000
(C) CO. LOAD RESPONSIBILITY	6,616.2	10,209.2	1,310.7	1,207.8	475.1	19,819.0
2. OWNED CAPACITY						
(A) CONTRACT PURCHASES/(SALES)	256.0	(647.5)	8.0	62.0	0.0	(321.5
(B) DSO CAPACITY EQUIVALENTS	465.8	299.2	0.0	0.6	0.0	765.6
(C) CONVENTIONAL HYDRO CAPACITY	1,632.5	692.3	0.0	0.0	0.0	2,324.8
(D) PUMPED STORAGE HYDRO	0.0	214.6	0.0	0.0	0.0	214.6
(E) NUCLEAR CAPACITY	1,639.8	2,829.2	0.0	0.0	0.0	4,469.0
(F) COAL FIRED STEAM CAPACITY	6,154.8	10,493.0	1,995.7	1,517.2	351.5	20,512.2
(G) OIL AND GAS FIRED STEAM CAPACITY	49.0	294.8	86.1	450.5	224.7	1,105.1
(H) COMBUSTION TURBINE CAPACITY	9.8	1,423.1	39.4	78.7	247.9	1,798.9
(I) TOTAL GENERATING CAPACITY	10,207.7	15,598.7	2,129.2	2,109.0	824.1	30,868.7
3. EQUIVALENT UNAVAILABILITY FACTORS						
(A) CONVENTIONAL HYDRO	0.20%	0.20%	0.20%	0.20%	0.20%	0.00
(B) PUMPED STORAGE HYDRO	3.37%	3.37%	3.37%	3.37%	3.37%	0.00
(C) FOSSIL	22.70%	22.70%	22.70%	22.70%	22.70%	0.00
4. EQUIVALENT UNAVAILABILITY						
(A) CONVENTIONAL HYDRO	3.3	1.4	0.0	0.0	0.0	4.7
(B) PUMPED STORAGE HYDRO	0.0	7.2	0.0	0.0	0.0	7.2
(C) NUCLEAR	372.2	642.2	0.0	0.0	0.0	1,014.4
(D) COAL FIRED STEAM	1,397.1	2,381.9	453.0	344.4	79.8	4,656.2
(E) OIL AND GAS FIRED STEAM	11.1	66.9	19.5	102.3	51.0	250.8
(F) COMBUSTION TURBINE	2.2	323.0	8.9	17.9	56.3	408.3
(G) TOTAL UNAVAILABLE CAPACITY	1,785.9	3,422.6	481.4	464.6	187.1	6,341.6
5. EFFECTIVE LOAD SERVED BY CAPACITY						
(A) CONTRACT PURCHASES/(SALES)	256.0	(647.5)	8.0	62.0	0.0	(321.5
(B) DSO CAPACITY EQUIVALENTS	465.8	299.2	0.0	0.6	0.0	765.6
(C) CONVENTIONAL HYDRO	1,629.2	690.9	0.0	0.0	0.0	2,320.1
(D) NUCLEAR	1,267.6	2,187.0	0.0	0.0	0.0	3,454.6
(E) COAL, OIL, GAS, PSH, CT	2,997.6	7,679.6	1,302.7	1,145.2	475.1	13,600.2
(F) TOTAL	6,616.2	10,209.2	1,310.7	1,207.8	475.1	19,819.0

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