

PREPARED TESTIMONY OF DAVID A. SPRINGS

1 Q. PLEASE STATE YOUR NAME AND PLACE OF RESIDENCE.

2
3 A. David A. Springs, 4514 North Peachtree Road, Chamblee, Georgia
4

5 Q. WOULD YOU STATE YOUR EDUCATIONAL BACKGROUND?

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7 A. I graduated from Georgia Institute of Technology in 1948 with a
8 Bachelor of Electrical Engineering Degree, and again in 1949, with a
9 Degree of Master of Science in Electrical Engineering.

10
11 Q. WOULD YOU STATE BRIEFLY YOUR EXPERIENCE?

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13 A. During graduate work at Georgia Tech, I worked 15 months as Assistant
14 Operator of the Georgia Tech AC Network Calculator. At that time, the
15 calculator was the most advanced tool for studying the overall operations
16 of power systems. This experience gave me a very early understanding
17 of load flow and stability problems on large utility systems.

18
19 After graduation, I worked for Southern Engineering Company of Georgia
20 in Atlanta, Georgia, for approximately three years, doing distribution
21 design work, transmission system design, and long range power supply
22 planning.

23
24 From 1952 to 1963, I was with the South Carolina Public Service Authority,
25 first as supervisor in charge of wholesale billing and then for a period
26 of six years as their planning engineer. One of my responsibilities
27 with the South Carolina Public Service Authority was to rework and update
28 the "rule curve" of the Pinopolis Hydroelectric Plant Reservoir as steam
29 generation was added to the system.

30
31 Since returning to Southern Engineering Company of Georgia in 1963, I
32 have been in charge of the power supply planning and power system plan-
33 ning section. I have been involved as a principal engineer in power
34 system planning or power supply planning for existing or potential sys-
35 tems in the following states: Maine, Vermont, Virginia, North Carolina,
36 South Carolina, Georgia, Florida, Alabama, Mississippi, Oklahoma, Kansas,
37 Illinois, Kentucky and Ohio. I am a Vice President of Southern Engineer-
38 ing Company of Georgia.

39
40 Q. HAVE YOU EVER TESTIFIED BEFORE ANY REGULATORY COMMISSIONS?

41
42 A. Yes, I have testified before this Commission in Carolina Power and Light
43 Company, Docket No. E-7564; Georgia Power Company, Docket Nos. E-7548,
44 E-9091, E-9521; Florida Power Corporation, Docket No. E-7679; Duke Power
45 Company, Docket No. E-7720; and Central Vermont Public Service Company,
46 Docket No. E-7685. I have testified before the Atomic Energy Commission
47 (now the Nuclear Regulatory Commission) in Alabama Power Company,
48 Joseph M. Farley Nuclear Plant, Units 1 and 2, Docket Nos. 50-348A and
49 50-364A. I have also testified before the Public Service Board of the
50 State of Vermont on two occasions.

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1 Q. ARE YOU A REGISTERED PROFESSIONAL ENGINEER?

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3 A. Yes, I am registered in the States of Georgia and Kansas.

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5 Q. TO WHAT SCHOLASTIC AND PROFESSIONAL SOCIETIES DO YOU BELONG?

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7 A. I am a member of IEEE and the Georgia Society of Professional Engineers.
8 I am also a member of Tau Beta Pi (Scholastic Engineering) and of Eta
9 Kappa Nu (Scholastic Electrical).

10

11 Q. WHAT WERE YOUR ASSIGNMENTS IN THIS PROCEEDING?

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13 A. My assignments were in two areas. The first was to demonstrate why Georgia
14 Power Company (GPC) should adjust its generating resources for Period II
15 (January through December 1976) to reflect only those generating resources
16 (capacity and associated energy) available to GPC in meeting its terri-
17 torial load responsibility. Neither GPC's PR-2 rate filing with respect
18 to capacity charges nor its actual energy billing under PR-2 reflected
19 adjustments for certain transactions with others through the Southern
20 Company Pool.

21

22 My second assignment was to express an opinion as to whether GPC was
23 correct in its PR-2 rate filing to provide that OEMC should be billed
24 for its annual capacity responsibility based upon an estimated peak demand
25 contribution rather than OEMC's actual peak demand contribution.

26

27 Q. PLEASE EXPLAIN YOUR FIRST ASSIGNMENT AS TO WHY GPC SHOULD HAVE MADE
28 CERTAIN ADJUSTMENTS IN ITS PR-2 RATE FILING AND ITS ENERGY BILLING UNDER
29 THE PR-2 RATE.

30

31 A. GPC prepared its PR-2 rate filing based upon a projected territorial
32 generating capability "stack" (and related annual cost other than fuel)
33 including generating units owned solely by GPC and units jointly owned
34 by GPC and OEMC plus certain other generating resources contractually
35 available to GPC during Period II including its purchase of 75,000 kW
36 from South Carolina Electric and Gas Company, its purchase from Southern
37 Electric Generating Company of 522,950 kW, and its 157,795 kW share of
38 the TVA seasonal exchange. GPC also included in the monthly energy
39 "stack" used for computing monthly energy billings to OEMC under the
40 PR-2 rate, the energy (and the fuel costs of such energy) provided by
41 each such generating resource during each month. GPC did not reflect
42 in its projected annual territorial generating capacity "stack" nor its
43 monthly energy "stack" other transactions through the Southern Company
44 Pool which definitely either subtract from or add to the capacity and
45 energy resources of GPC and which should be recognized in establishing
46 the net resources available to GPC in meeting its territorial load
47 responsibility.

48

49 I have had prepared under my direct supervision OEMC Exhibit No. ____ (DAS-1)
50 for the purpose of identifying the other transactions referred to above

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1 so that they might be analyzed separately. From this analysis I will
2 identify certain capacity related transactions which GPC should reflect
3 in the annual territorial generating capacity "stack". I have recom-
4 mended to Witness Solomon that he include appropriate adjustments for
5 such capacity amounts in his annual capacity cost responsibility com-
6 putations. These capacity related transactions will have a substantial
7 effect upon the capacity cost responsibility of OEMC under an appro-
8 priately modified PR-2 filing as Witnesses Solomon and Gross testify.

9
10 From the analysis of OEMC Exhibit No. ____ (DAS-1) certain energy trans-
11 actions will also be identified which GPC should take into account
12 monthly in arriving at the energy "stack" actually available to GPC to
13 meet territorial load responsibility. OEMC Exhibit ____ (DAS-2) has
14 been prepared under my direct supervision to show the effect of such
15 energy "stack" adjustments on the OEMC monthly billing for the months
16 of August, September, October and November of 1976.

17
18 Q. WOULD YOU NOW DESCRIBE OEMC EXHIBIT ____ (DAS-1) AND IDENTIFY THE TRANS-
19 ACTIONS WHICH GPC HAS NOT TAKEN INTO ACCOUNT.

20
21 A. Page 1 of OEMC Exhibit ____ (DAS-1) is a copy of Schedule B, sheet 1 of
22 2 from the Southern Company System 1976 Interchange Contract Analysis
23 for the Contract Year 1976 covering the period January through May. This
24 shows on line B1(c) that GPC was a "surplus capacity" pool member with
25 respect to "peak period" capacity and associated energy in the amount
26 of 314,853 kW and therefore contracted to sell this "surplus" capacity
27 and associated energy to "deficit" pool members. Line B4 shows that
28 GPC was "short" of "peak hour" capacity in the amount of 43,842 kW and
29 contracted to purchase such shortage from those pool members long on
30 "peak hour" capacity. The method used for GPC to receive payment for
31 the "surplus" capacity sale is to include a portion of such capacity
32 payments in the pricing of surplus energy (as exchange energy) and the
33 net remaining difference as an adjustment to the other fixed payments
34 of GPC for the period (see lines B2 through B5).

35
36 Page 2 of OEMC Exhibit ____ (DAS-1) is a copy of Schedule B, sheet 2 of
37 2 from the Southern Company System 1976 Interchange Contract Analysis for
38 the Contract Year 1976 covering the period June through December 1976.
39 This is similar to Page 1 described above except it shows GPC selling
40 792,516 kW of "surplus peak period" capacity and associated energy and
41 purchasing its shortage of 200,878 kW of "peak hour" capacity.

42
43 These capacity sales and purchases of GPC should be respectively removed
44 from and added to the annual capacity "stack" of GPC to obtain the net
45 territorial capacity "stack" of GPC available to meet territorial load
46 responsibility. I have recommended to Witness Gross that he make such
47 adjustments.

48
49 Page 3 of Exhibit DAS-1 is a listing of the transactions of GPC with
50 others for the month of August 1976 as recorded in the Operating Report

1 of GPC for August 1976. Starting with the total transactions for the
2 month in both dollars and kWh (see line 2) we first remove those trans-
3 actions with others which GPC has included in the capacity "stack" and
4 monthly energy "stack" (line 2A through line 2I). We then removed the
5 fixed payments (and credits) GPC makes to the pool including the "peak
6 hour" capacity purchase payments and rentals but the adjustment to the
7 surplus capacity and energy sale (see line 3A) described as Peak
8 Period Equivalent Payments is carried down and credited to the "surplus"
9 capacity and associated energy sale (see line 4B). The "surplus" trans-
10 action for the month is now complete (see line 4C). By removing the
11 capacity related cost (see line 4D) the remainder is the revenue received
12 for "surplus" energy sold (see line 4E).
13

14 The "other variable" cost related to this "surplus" energy sale is
15 assumed to be 1.158624 mills/kWh in accordance with Witness Solomon's
16 OEMC Exhibit No. ____ (JBS-3). After removing the "other variable"
17 cost the remaining fuel cost (dollars and associated KWH) should be
18 removed from the appropriate energy resource in the energy "stack"
19 for August, 1976. This is shown on line 21 of page 1 of OEMC Exhibit
20 No. ____ (DAS-2).
21

22 Next we removed pool capacity energy sold, and added that purchased,
23 adjusting the respective dollars cost or credit by the "other variable"
24 cost factor related to pool capacity energy exchanges in accordance
25 with page 14 of Witness Solomon's OEMC Exhibit No. ____ (JBS-3), (see
26 line 5A through 5F). The remaining fuel cost (dollars and associated
27 KWH) should be removed from, and added to the appropriate energy resource
28 as was done previously for "surplus" energy (see lines 31 and 32 of
29 page 1 of OEMC Exhibit No. ____ (DAS-2)).
30

31 The same procedure was followed to add, or remove, economy energy
32 purchases or sales, (see line 6A through 6F) adjusting for "other
33 variable costs" in accordance with the testimony of Witness Solomon
34 (see lines 26 and 28 of page 1 of OEMC Exhibit No. ____ (DAS-2)).
35

36 Line 7 of OEMC Exhibit No. ____ (DAS-1) described as "other exchanges
37 with associated companies" and line 8, described as "other interchange
38 transactions with non-associated companies" have not been adjusted
39 in the energy "stack" for August, 1976 since the information available
40 to us was insufficient to determine the proper resource of resources
41 to be adjusted. However, sufficient information to properly account
42 for these transactions is available to GPC and should be used to
43 properly apply the transactions as adjustments.
44

45 The sales on line 9A and 9B are commitments of GPC which are considered
46 in the territorial load responsibility and therefore generating
47 resources to supply these commitments should remain in the "stack". Line
48 9C however, should be added to the "stack" as a resource. This is
49 shown on line 5 of page 1 of OEMC Exhibit No. ____ (DAS-2).
50

1 The resulting revised energy "stack" for August 1976 is then used to
2 determine the energy cost by category for a recomputation of the
3 August 1976 energy billing for OEMC shown on pages 2 through 6 of
4 OEMC Exhibit No. ____ (DAS-2).
5

6 The same procedure as illustrated on pages 3 and 4 of OEMC Exhibit
7 No. ____ (DAS-1) for the month of August was repeated for the months
8 of September, October and November 1976 in developing revised energy
9 "stacks". These revised "stacks" were then used in recomputing energy
10 billing for OEMC for each month as shown on pages 7 , 8 and 9 ,
11 respectively, of OEMC Exhibit No. ____ (DAS-2).
12

13 Page 10 of OEMC Exhibit No. ____ (DAS-2) shows a comparison of energy
14 billing to OEMC for the four months as actually billed, as recomputed
15 herein, and the difference between the two. It will be noted that
16 the recomputed billing is \$163,193 less than the actual billing.
17

18 Q. PLEASE EXPLAIN YOUR SECOND ASSIGNMENT AS TO WHETHER GPC WAS CORRECT
19 OR INCORRECT IN ITS PR-2 RATE FILING BY PROVIDING FOR OEMC TO BE BILLED
20 ON AN ESTIMATED, RATHER THAN AN ACTUAL PEAK DEMAND CONTRIBUTION.
21

22 A. It is my opinion that GPC was incorrect in providing for OEMC to be
23 billed on an estimated peak basis. GPC and OEMC will be continuously
24 planning together to meet their respective power requirements and
25 responsibilities. To penalize OEMC for overestimating its peak demand
26 and require that it pay for capacity and reserves that it did not
27 require means that OEMC will bear costs which should be carried by
28 others. Additionally this will require OEMC to consistently under-
29 estimate their expected peak demand in order to ensure that they
30 do not pay for capacity and reserves they do not require.
31

32 For GPC and OEMC to jointly plan for their future needs requires
33 that both parties estimate their future demands as accurately as
34 possible. OEMC, as well as GPC, will be disadvantaged if OEMC is
35 required to plan for future requirements based on underestimates of
36 its peak demand because of this incorrect provision in the PR-2 rate
37 filing.
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