

计算机在电网调度运行中 应用的新进展

(参考文献及附录)

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世界各国电网调度中心计算机配置情况总览

January 1988

序号	投入年月	电力公司名称	运动数量	计算机系统	内存	外存	彩色CRT 台数	模拟盘厂家	已运行	在线软件	开发中
1	July 1970	Penn.-Jersey-Maryland (PJM) Interconnection Norristown, Pennsylvania	11	IBM 370/158 + IBM 370/168 + 2 IBM System 7 + Data Links to 9 Pool Member Locations.	2 M 3 M 40k ea.	4.7 M total	10, 16 (bw)	Gilbert Backlighted	AGC, ED, SM, CE		
2	Dec. 1970	Central Electricity Gen- erating Board London, England		Dual ARGUS 500 + Data Links to 7 Regional Centers + Off-Line ARGUS 500	64k ea. 64k	1.28 M ea. 1.28 M	17 (bw) ^c	Mosaltc ^b	SM, CE, OLF, OSC, SE (Software Development, Spare Parts)		
3	Oct. 1971	Kyushu Electric Power Fukuoka, Japan		Dual GE 4080 or Dual Argus 7005 1-TOSBAC 7000/20 + 1-TOSBAC 3000	256k ea. 256k ea. 64k 16k	1 M 5 M 8 M	(bw) (bw) 2 (bw)	Mosaltc Mosaltc ^b	SM, SRC AGC ^a , ED, AVC, SM, CE, SRC, SE, OLF		
4	Nov. 1971	Houston Lighting & Power Houston, Texas	170	Dual SIGMA 5 1-NORD 1	128k ea. + 32k shared 48k	17.5 M	11	Electro- luminescent	AGC, ED, SRC, SVC, SM, FLSC		
5	March 1972	Norwegian Water Re- sources & Electricity Board Tokke, Norway				256k			AGC, ED, SE, CE, EC, OLF		
6	June 1972	New York Power Pool Albany, New York		National Advanced Systems AS-8063 Hitachi + Dual Data Links to 8 Member Companies & Single Data Links to 3 Neighboring Sys. Con. Centers	16 M ea.	9-252G	23	Huall Mosaltc	AGC, SM, CE, DOR, EA, EAP, ECD, STLF NPCC Reserve Pickup Algorithm Reserve Monitoring	VWD, SE, CE, DTS, NR, NSP, OLF, Off	

序号	得入年月	电力公司名称	运动数量	计算机系统	内存	外存	彩色CRT 台数	模拟盘厂家	已运行	在线软件	开发中
7	Oct. 1972	Tohoku Electric Power Sendai, Japan	37	1-HITAC 7250 + 2-HIDIC 100 + 1-HIDIC 100 + Data Link to Regional Office with 1-HIDIC 500 + 1-HIDIC 100	64k 24k 32k	2 M	2	Mosalc ^b	AGC ^a , ED, SM, AVC, CE, OLF		
8	Oct. 1972	Electric Power Utility Laufenburg Laufenburg, Switzerland		1-IBM 1800 + 1-IBM S/7	64k 12k	17.6 M	4 (bw)	Mosalc ^b	AGC ^a , SM, SE		
9	Dec. 1972	Cleveland Electric Illuminating Cleveland, Ohio	38	Dual SIGMA 5 + Data Links to 5-P2000 Plant Computers	288k ea. 40k ea.	6 M ea.	6	Ferranti- Packard Electro- magnetic Disk	AGC, ED, SBC, SM, OLF, OFF, ASTA, EC, CE		
10	Feb. 1973	Kansai Electric Power Osaka, Japan		1-HITAC 8300 + 1-HIDIC 500 + 1-HIDIC 100 + Data Link to 2-IBM 370/158	64k 64k 32k	12Mk	3	Mosalc ^b	AGC ^a , ED, SM, CE, OLF		
11	Feb. 1973	Sacramento Municipal Utility District Sacramento, California	15	Dual CDC 1700	64k ea.	4.4 M	2	Static	AGC, ED, SM, SBC, SVC		
12	March 1973	Commonwealth Edison Chicago, Illinois	75	Dual SIGMA 5 + Data Link to 1 Division with Dual LN CP400	256k ea. 256k ea.	6 M ea.	9	Siemens Mosalc	AGC, ED, SM, CE, OLF, SBC		
13	May 1973	General Public Utilities Reading, Pennsylvania	15	Dual SIGMA 5 + Data Links to PJM and to 3 Member Companies	256k ea.	6 M ea.	6	Siemens Mosalc	AGC, ED, SM		

序号	投入年月	电力公司名称	远动数量	计算机系统	内存	外存	彩色CRT 台数	模拟盘厂家	已运行	在线软件
<u>Member Companies</u>										
		Metropolitan Edison	50	Dual SIGMA 5 + Data Links to 3 Division Control Centers each with Dual OS-8000	176k ea.	6 M ea.	4 (bw)		SBC, SVC	开发中
		Pennsylvania Electric	102	Dual SIGMA 5 + Data Links to Existing Super- visory Control and 1 Division Control Center with Dual MODCOMP IV *	32k ea. 176k ea.	256k ea. 6 M ea.	6 (bw) 4 (bw)		SBC, SVC SBC, SVC	
		Jersey Central	159	Dual SIGMA 5 + Data Links to 3 Division Control Centers each with Dual OS-8000 and 1 Division Con- trol Center with Dual MODCOMP IV	224k ea. 176k ea. 32k ea.	12.5 M ea. 6 M ea.	3 4 (bw)		SBC, SVC	
14	July 1973	Interbrent Schaerboek, Belgium	20	1-Westinghouse P2000 + 1-Westinghouse P2500 + 1-Westinghouse P2500 + Data Link to CPTC	48k 48k 56k	512k 2	3 1 (bw)	Wynckler ^b Mosalc Quartile	SBC, SM, SE, CE, OLF, OPF	
15	Sept. 1973	Southern Services Birmingham, Alabama	750	Dual IBM 4381/Model 2 + 1-IBM 3090 Model 150 + Video Data Links to 4 Company Dis- patch Centers and to 13 Division Control Centers	16 M ea. 32 M	33.248G shared —	228	None	AGC, ED, DOR, SM, EA, EAP, SE, HTS, NF, OLF, SYC, STLF, UD, SVC	CE

在线软件
开发中

已运行
AGC, ED,
SM, CE

模拟盘厂家
None

台数
92

外存
876 M

内存
2.688 M
shared

计算机系统
Triple-BURROUGHS
6700 +
Data Links to 2
Plant Computers
and to PJM

运动数量
41

电力公司名称
Philadelphia Electric
Philadelphia, Pennsylvania

投入年月
16 Oct. 1973

AGC, ED,
AVC, SM,
SE, EC

Mosaic^b

2

6 M

64k

1-TOSBAC
7000/20 +
1-TOSBAC 3000 +
1-TOSBAC 40

25

Hokuriku Electric Power
Toyama, Japan

17 Nov. 1973

AGC, ED,
SRC, SVC,
SM

Mosaic

2

3 M ea.

128k ea.

Dual W2500

15

Hong Kong Electric
Victoria, Hong Kong

18 March 1974

ED, SM

Mosaic

4

14 M

64k
40k ea.

1-IBM 1800 +
2-PDP11/20 +
Data Links to
6 District
Centers

131

Sydkraft
Malmo, Sweden

19 April 1974

AGC, ED, CD,
SRC, SM, CE,
DTS, EA, EAP,
NSP, SUSS,
SVC

Datapac
Backlighted

9

9 M ea.
105 M
shared

368k ea.

Dual SIGMA 5 +
Data Links to PJM
and to 5 Division
Offices each with
1-SIGMA 3 +
1-SIGMA 5 and to
1 Division Office
with Dual Xerox
530

9

Pennsylvania Power &
Light
Allentown, Pennsylvania

20 May 1974

AGC, ED, EA,
EDT, SRC,
SVC, EAP,
SOE, ASTA,

Backlighted

30

215 M

16 M ea.

Dual SIGMA 9 +
Data Links to
4 Regional Dis-
tribution Centers

80

Utah Power & Light
Salt Lake City, Utah

21 July 1974

序号	投入年月	电力公司名称	运动数量	计算机系统	内存	外存	台数	模拟盘厂家	已运行
22	Sept. 1974	Carolina Power & Light Raleigh, North Carolina	32	Dual SIGMA 5 + 2-GEAPAC 3010	256k ea. 40k ea.	4.5 M —	6	Static	ACC, ED, SBC, SM, CE
23	Dec. 1974	Bonneville Power Administration Portland, Oregon		Dual PDP-10 + 2-PDP-11 + 1-PDP-11 + Dual GEPAC 4010 + Dual GEPAC 3010 + 1-GEAPAC 300S	512k ea. 56k ea. 24k ea. 64k ea. 48k ea. 16k	63,488 M 3,584 M	29 7	Static Siemens Mosaic	ACC, SM, CE, SE, AVC, OLF SBC, SVC
24	Dec. 1974	Iowa-Illinois Gas & Electric Davenport, Iowa	48	Dual SIGMA 5 + Data Link to Enerex	256k ea.	12 M ea. —	4 7 (bw)c 3 (bw)	Static	ACC, ED, EAP, SVC, SVC, STLF, SM, UC Gas Dis- tribution Monitoring, Short Term Gas Forecast
25	Jan. 1975	Sierra Pacific Power Reno, Nevada		Dual SLASH/5		1 M ea.	2	Mosaic	ACC, ED, SM
26	April 1975	City of Gainesville Gainesville, Florida	10	Dual W2500	128k ea.	4 M ea.	5	Static	ACC, ED, SBC, SVC, SM
27	June 1975	Public Service Electric and Gas Newark, New Jersey	85	Dual GEPAC 4010 + Dual PE 3220 + Dual Prime 550 + Data Links to PJM	64k ea. 512k ea. 1M ea.	2,512 M 90 M ea. 160 M ea.	8 16 (bw)	Detapic	SBC, SVC, CD, SM, CE, ED, SE, OLF, DSA, OSC, DTS, EA, OFF, SUSS
28	Aug. 1975	Wisconsin Electric Power Milwaukee, Wisconsin	100	Quad CDC SC- 1700 + System 17 + Dual CDC CYBER 73-14 + Data Link to Wisconsin- Michigan Power which has Dual CDC System 17 + Video Data Link to 9 Offices	64k ea. 128k ea. 64k vds ea.	8.8 M ea. 8.8 M ea. 178 M ea.	20	(Static)	ACC, ED, SBC, SM, CE, SE, OFF, OLF
			50		128k ea.	4.4 M ea.	5		SBC

序号	投入年月	电力公司名称	运动数量	计算机系统	内存	外存	彩色CRT 台数	模拟盘厂家	已运行	开发中
29	Aug. 1975	Tennessee Valley Authority Chattanooga, Tennessee	14	1-SIGMA 5 + 3-GEOPAC 3010 + Data Links to 3 Area Dispatch Centers, One with Dual GRI-99 and Four with Dual PDP 11/35 + Video Data Links to Headquarters Office + Off-Line SIGMA 5	304k 40k ea.	12 M —	5	(Static)	ACC, EDC, SM, CE, SE, OLF	
					64k ea.	256k ea.	28		SBC, SVC	
					64k		2 (bw)		(Software Development, Spare Parts)	
30	Oct. 1975	Rheinisch-Westfälisches Elektrizitätswerk (RWE) Brauneller, West Germany	80	Dual SIEMENS 306	128k ea.	9.176 M ea.	5 (bw) ^c 2 6 (bw)	Maueil ^b Mosaic	ACC ^a , SM, SE, CE, CLF, OSC	
31	Oct. 1975	Rhode Island-Eastern Massachusetts-Vermont Energy Control (REWVEC) Westborough, Massachusetts		1-GEOPAC 4020 + Data Links to NEFEX	96k	4.262 M	4	Siemens ^b Mosaic	ACC, ED, SM	
32	Oct. 1975	Pacific Gas & Electric San Francisco, California	90	Dual Xerox 550 + Dual PDP11/34 + Data Links to 10 500 kV Substation Computers consist- ing of: 2-P20000 1-P50, 7-P50 + Data Link to 1-T1970B Plant Computer + Data Links to USBR and SWUD Control Centers	112k, 128k 128k ea. 48k ea. 32k 24k ea. 64k		7	Static	ACC, ED, EA, EAP, HTS, STLF, SUSS	
									\$VC	
33	Nov. 1975	Technische Werke der Stadt Stuttgart (TWS) Stuttgart, West Germany		1-Siemens 306 + Data Link to IBM 370/	128k	9.6 M	4 ^c	Maueil ^b Mosaic	SBC, SM, SE, CE, OLF	