LA-SUB--93-297

THE CONSERVATION PLANNING ANALYSIS MODEL

A FINAL REPORT IN SATISFACTION OF
SUBCONTRACT 9-X34-F4099-1

BETWEEN

APPLIED ENERGY SERVICES, INC.
AND LOS ALAMOS NATIONAL LABORATORY

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100 * DEC. '84 VER. OF CPAM FOR TECHNICAL REPORT

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420 NOTE ELECTRICITY DEMAND SECTOR

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450 NOTE

460 NOTE SECTOR TOTALS

470 NOTE

480 A TOTDEM.K=RD.K+CD.K+ID.K+OED.K+DSD.K

490 A OED.K=IAD.K+OD.K

500 A TOTEXP.K=TOTUE.K+TOTPE.K+TOTTE.K

510 A RAUE.K=ROSAUE.K+ROWAUE.K+ROOAUE.K+RNSAUE.K+RNWAUE.K+RNOAUE.K

520 A CAUE.K=COSAUE.K+CONAUE.K+CNSAUE.K+CNNAUE.K

530 A LAUE.K=IMDAUE.K+ILLIAUE.K+IOTAUE.K

540 A RNEWAUE.K=RNSAUE.K+RNWAUE.K+RNOAUE.K

550 A ROLDAUE.K=ROSAUE.K+ROWAUE.K+ROOAUE.K

560 A COLDAUE.K=COSAUE.K+CONAUE.K

570 A CNEWAUE.K=CNSAUE.K+CNNAUE.K

580 A TOTUEX.K=RAUE.K+CAUE.K+LAUE.K

590 A TOTUE.K=RUE.K+CUE.K+IUE.K+PRESEXP.K+OTHEXP.K

600 A TUESO.K=TOTUE.K-PRESEXP.K-OTHEXP.K

610 C PRES=0

620 C PRES1=0

630 C PRES2=0

640 C PRES3=0

650 A PRESEXP.K=SWITCH(PRES,0,PRESPEX.K)+SWITCH(PRES1,0,PRESPEX.K-1)

660 X +SWITCH(PRES2,0,PRESPEX.K-2)+SWITCH(PRES3,0,PRESPEX.K-3)

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670 C PRES1Y=3000
680 C PRES2Y=3000
690 C PRES3Y=3000
700 A PRESPLS.K=CLIP(1,0,TIME.K,PRES1Y)
710 A PRES2S.K=PRESPLS.K*CLIP(1,0,TIME.K,PRES2Y)
720 A PRES3S.K=PRES2S.K*CLIP(1,0,TIME.K,PRES3Y)
730 A PRESPEP.K=PRESPLS.K+PRES2S.K+PRES3S.K
740 A TOTPE.K=RPE.K+CPE.K+IPE.K
750 A TOTTE.K=RTE.K+CTE.K+ITE.K
760 A OTHEXP.K=TABHL(OTHEXT,TIME.K,1984,1994,1)
770 T OTHEXT=0/0/0/0/0/0/0/0/0/0/0
780 C DST=1
790 A TDEMS.K=SMOOTH(TOTDEM.K,DST)
800 A TDEMGR.K=(TOTDEM.K/TDEMS.K)-1)/DST
810 A RDS.K=SMOOTH(RD.K,DST)
820 A RDGR.K=(RD.K/RDS.K)-1)/DST
830 A CDS.K=SMOOTH(CD.K,DST)
840 A CDGR.K=(CD.K/CDS.K)-1)/DST
850 A IDS.K=SMOOTH(ID.K,DST)
860 A IDGR.K=(ID.K/IDS.K)-1)/DST
870 A OEDS.K=SMOOTH(OED.K,DST)
880 A OEDGR.K=(OED.K/OEDS.K)-1)/DST
890 A DSDS.K=SMOOTH(DSD.K,DST)
900 A DSDGR.K=(OED.K/OEDS.K)-1)/DST
910 NOTE
920 A TOTINC.K=RNC.K+CNC.K+INC.K
930 NOTE
940 NOTE
950 NOTE *****
960 NOTE
970 NOTE RESIDENTIAL SECTOR DEMAND FOR ELECTRICITY
980 NOTE
990 NOTE *****
1000 NOTE
1010 NOTE
1020 NOTE
1030 C DEMEGM=1.0
1040 C RSDR=.03
1050 C RDRL=.05
1060 C BPADR=.03
1070 C RLDRB=.07
1080 C RMDRB=.15
1090 C RHDRB=.35
1100 C RNDRB=.18
1110 C RTAXS=0
1120 A RMCE.K=500
1130 A BPAAVC.K=AVC.K
1140 C RAPSW=0
1150 A RAPEU.K=SWITCH(RAPE.K,TABHL(RAPET,TIME.K,1984,2004,4),RAPSW)
1160 T RAPET=26/25.406/25.173/25.081/24.741/24.872
1170 T ROHT=3.104/2.997/2.846/2.686/2.546/2.143/2.288/2.168/2.055
1180 A ROHO.K=TABHL(ROHT,TIME.K,1984,2024,5)
1190 T RNHT=.001/.441/.923/1.400/1.849/2.442/3.225/4.260/5.626
1200 A RNHO.K=DEMGM*TABHL(RNHT,TIME.K,1984,2024,5)
1210 A RNHS.K=RNHO.K-DLINF3(RNHO.K,1)
1220 A RHALT.K=50
1230 A RHOME.K=ROHO.K+RNHO.K
1240 NOTE
1250 A RSD.K=ROSD.K+RNSND.K
1260 A FWD.K=RCWD.K+RNWWD.K
1270 A ROD.K=ROOD.K+RNOND.K

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1280 A RD.K=RSD.K+RWD.K+ROD.K
1290 NOTE
1300 A RWUE.K=ROWUE.K+RNWUE.K
1310 A RSUE.K=ROSUE.K+RNSUE.K
1320 A ROUE.K=ROOUE.K+RNOUE.K
1330 A RUE.K=RSUE.K+RWUE.K+ROUE.K+RIPUC.K+RSIUC.K+RWIUC.K+ROIUC.K
1340 A RNEWUE.K=RNSUE.K+RNWUE.K+RNOUE.K
1350 A ROLDUE.K=ROSUE.K+ROWUE.K+ROOUE.K
1360 A RSIUC.K=ROSIUC.K+RNSIUC.K
1370 A RWIUC.K=ROWIUC.K+RNWIUC.K
1380 A ROIUC.K=ROOIUC.K+RNOIUC.K
1390 NOTE
1400 A RSPE.K=ROSPE.K+RNSPE.K
1410 A FWPE.K=ROWPE.K+RNWPE.K
1420 A ROPE.K=ROOPE.K+RNOPE.K
1430 A RPE.K=RSPE.K+FWPE.K+ROPE.K
1440 NOTE
1450 A RSTE.K=ROSTE.K+RNSTE.K
1460 A FWTE.K=ROWTE.K+RNWTE.K
1470 A ROTE.K=ROOTE.K+RNOTE.K
1480 A RTE.K=RSTE.K+FWTE.K+ROTE.K
1490 NOTE
1500 A ROSFCP.K=ROSTPE.K/(ROSAUE.K+ROSTPE.K)
1510 NOTE
1520 A RSNC.K=ROSNC.K+(RNSNC.K*RNSPR.K)
1530 A FWNC.K=ROWNC.K+(RNWNC.K*RNWPR.K)
1540 A RONC.K=ROONC.K+(RNONC.K*RNOPR.K)
1550 A RNC.K=RSNC.K+FWNC.K+RONC.K
1560 A ROLDNC.K=ROSNC.K+ROWNC.K+ROONC.K
1570 A RNEWNC.K=RNC.K-ROLDNC.K
1580 NOTE
1590 A ROLOCONS.K=ROSCONS.K+ROWCONS.K+ROOCONS.K
1600 A RNCONS.K=RNSCONS.K+RNWCONS.K+RNOCONS.K
1610 A COCONS.K=COSCONS.K+CONCONS.K
1620 A CNWCONS.K=CNSCONS.K+CNNCONS.K
1630 A RSCONS.K=ROSCONS.K+RNSCONS.K
1640 A FWOCONS.K=ROWCONS.K+RNWCONS.K
1650 A ROCONS.K=ROOCONS.K+RNOCONS.K
1660 A CSCONS.K=COSCONS.K+CNSCONS.K
1670 A CNOCONS.K=CONCONS.K+CNNCONS.K
1680 NOTE
1690 A ROONS.K=RSCONS.K+FWCONS.K+ROCONS.K
1700 A COONS.K=CSCONS.K+CNOCONS.K
1710 A ICONS.K=IMDCONS.K+ILICONS.K+IOTCONS.K
1720 A TOTCONS.K=ROONS.K+COONS.K+ICONS.K
1730 NOTE SPECIAL PLOTTING VARIABLES
1740 A CPLOT.K=ROONS.K+COONS.K
1750 A TPLOT.K=ROONS.K+COONS.K+ICONS.K
1760 NOTE
1770 NOTE INFORMATION PROGRAMS POLICY SECTION - ALL SERVICE CATEGORIES
1780 NOTE
1790 C RIPMP=.5
1800 C RIPAC=.11
1810 C RIPPSY=3000
1820 C RIPPCY=3000
1830 A RIPPS.K=CLIP(1,0,TIME.K,RIPPSY)*CLIP(1,0,RIPPCY,TIME.K)
1840 C RIPUPR=.35
1850 C RIPPD=2
1860 C RIPCPP=100
1870 A RIPPP.K=RHOMK.RIPUPR.RIPPS.K
1880 A RIPAP.K=MIN(DLINF1(RIPPP.K,RIPPD),RIPPP.K)

1890 N RIPP=0
1900 A RIPAPR.K=RIPAP.K/RHOME.K
1910 A RIFUC.K=(RIPP.K-RIPAP.K)*RIPCP*(1+RIPAC)/RIPPD
1920 L RIPAUC.K=RIPAUC.J+DT*RIPAUCI.JK
1930 N RIPAUC=0
1940 R RIPAUCI.KL=RIFUC.K
1950 NOTE
1960 A RIPPHR.K=RHDRB*RIPMP
1970 A RIPPMP.K=RMDRB*RIPMP
1980 A RIPPLR.K=RLDRB*RIPMP
1990 A RIPPNR.K=RNRDB
2000 NOTE
2010 A RIFWHR.K=((1-RIPAPR.K)*RHDRB)+(RIPAPR.K*RIPPHR.K)
2020 A RIFWMR.K=((1-RIPAPR.K)*RMDRB)+(RIPAPR.K*RIPPMP.K)
2030 A RIFWLR.K=((1-RIPAPR.K)*RLDRB)+(RIPAPR.K*RIPPLR.K)
2040 A RIFWNR.K=((1-RIPAPR.K)*RNRDB)+(RIPAPR.K*RIPPNR.K)
2050 NOTE
2060 A RIPHDRB.K=CLIP(RHDRB,RIFWHR.K,RIPPSY,TIME.K)
2070 A RIFMDRB.K=CLIP(RMDRB,RIFWMR.K,RIPPSY,TIME.K)
2080 A RIPLDRB.K=CLIP(RLDRB,RIFWLR.K,RIPPSY,TIME.K)
2090 A RIPPNRB.K=CLIP(RNRDB,RIFWLR.K,RIPPSY,TIME.K)
2100 NOTE
2110 NOTE RESIDENTIAL SECTOR - OLD HOMES
2120 NOTE SPACE HEATING
2130 NOTE
2140 T ROSCCT=0/1086/1917/3559/20663/5E5/5E5/5E5/5E5/5E5/5E5
2150 T ROSCST=0/.065/.216/.263/.306/.320/.337/.348/.356/.359/
2160 X .365/.370/.384/.385/.389/.391/.392/.392/.394/.398
2170 T ROSTCCT=0/66/212/472/1363/4266/7190/10113/13037/15961/18884
2180 C ROSBU=1.18
2190 C ROSBMA=1.0
2200 C ROSIRM=1.156
2210 C ROSAC=.11
2220 C ROSSL=30
2230 A ROSPR.K=TABHL(ROSPRT,TIME.K,1984,2004,5)
2240 T ROSPRT=.504/.515/.534/.559/.594
2250 NOTE
2260 NOTE SUBSIDY PROGRAMS POLICY SECTION
2270 NOTE
2280 C ROSSASD=0
2290 C ROSSAS1=1
2300 C ROSSAS2=0
2310 C ROSSAS3=5
2320 A ROSSAS.K=SWITCH(ROSSASD,0,ROSSPER.K)+SWITCH(ROSSAS1,0,ROSSPER.K-1)
2330 X +SWITCH(ROSSAS2,0,ROSSPER.K-2)+SWITCH(ROSSAS3,0,ROSSPER.K-3)
2340 C ROSSTD=2
2350 C ROSSTD1=1
2360 C ROSSTD2=2
2370 C ROSSTD3=2
2380 A ROSSTD.K=SWITCH(ROSSTD,0,ROSSPER.K)+SWITCH(ROSSTD1,0,ROSSPER.K-1)
2390 X +SWITCH(ROSSTD2,0,ROSSPER.K-2)+SWITCH(ROSSTD3,0,ROSSPER.K-3)
2400 C ROSCDS=0
2410 C ROSCDS1=1
2420 C ROSCDS2=0
2430 C ROSCDS3=3
2440 A ROSCDS.K=SWITCH(ROSCDS,0,ROSSPER.K)+SWITCH(ROSCDS1,0,ROSSPER.K-1)
2450 X +SWITCH(ROSCDS2,0,ROSSPER.K-2)+SWITCH(ROSCDS3,0,ROSSPER.K-3)
2460 C ROSPKSD=0
2470 C ROSPKS1=0
2480 C ROSPKS2=0
2490 C ROSPKS3=0

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2500 A      ROSPKS.K=SWITCH(ROSPKSD,0,ROSSPER.K)+SWITCH(ROSPKS1,0,ROSSPER.K-1)
2510 X      +SWITCH(ROSPKS2,0,ROSSPER.K-2)+SWITCH(ROSPKS3,0,ROSSPER.K-3)
2520 C      ROSSFSD=0
2530 C      ROSSFS1=0
2540 C      ROSSFS2=0
2550 C      ROSSFS3=40
2560 A      ROSSFS.K=SWITCH(ROSSFSD,0,ROSSPER.K)+SWITCH(ROSSFS1,0,ROSSPER.K-1)
2570 X      +SWITCH(ROSSFS2,0,ROSSPER.K-2)+SWITCH(ROSSFS3,0,ROSSPER.K-3)
2580 C      ROSFMSD=0
2590 C      ROSFMS1=3
2600 C      ROSFMS2=0
2610 C      ROSFMS3=0
2620 A      ROSFMS.K=SWITCH(ROSFMSD,0,ROSSPER.K)+SWITCH(ROSFMS1,0,ROSSPER.K-1)
2630 X      +SWITCH(ROSFMS2,0,ROSSPER.K-2)+SWITCH(ROSFMS3,0,ROSSPER.K-3)
2640 C      ROSFCD=0
2650 C      ROSFC1=0
2660 C      ROSFC2=40
2670 C      ROSFC3=40
2680 A      ROSFC.K=SWITCH(ROSFCD,0,ROSSPER.K)+SWITCH(ROSFCL,0,ROSSPER.K-1)
2690 X      +SWITCH(ROSFCL,0,ROSSPER.K-2)+SWITCH(ROSFCL,0,ROSSPER.K-3)
2700 C      ROSCHI=269
2710 C      ROSCMI=980
2720 C      ROSCLI=1852
2730 C      ROSCSHI=.02425
2740 C      ROSCSMI=.08827
2750 C      ROSCSLI=.2689
2760 C      ROSDELCL=100
2770 C      ROSFPLD=0
2780 C      ROSFPL1=0
2790 C      ROSFPL2=0
2800 C      ROSFPL3=0
2810 A      ROSFPL.K=SWITCH(ROSFPLD,0,ROSSPER.K)+SWITCH(ROSFPL1,0,ROSSPER.K-1)
2820 X      +SWITCH(ROSFPL2,0,ROSSPER.K-2)+SWITCH(ROSFPL3,0,ROSSPER.K-3)
2830 NOTE
2840 A      ROSAS5.K=SWITCH(ROSSFS.K,0,ROSSAS.K-5)
2850 A      ROSAS6.K=SWITCH(BPAAVC.K,0,ROSSAS.K-6)
2860 A      ROSAS7.K=SWITCH(MAX(0,BPAAVC.K-RAPEU.K),0,ROSSAS.K-7)
2870 A      ROSAS.K=(ROSAS5.K+ROSAS6.K+ROSAS7.K)*8.76/ROSCRFB.K
2880 NOTE
2890 A      ROSMF.K=SWITCH(ROSFMS.K,0,ROSSAS.K-1)+SWITCH(ROSFMS.K,0,ROSSAS.K-2)
2900 X      +SWITCH(ROSFMS.K,0,ROSSAS.K-3)+SWITCH(ROSFMS.K,0,ROSSAS.K-4)
2910 NOTE
2920 A      ROSSC2.K=SWITCH(ROSFCL.K,1E6,ROSSAS.K-2)
2930 A      ROSSC3.K=SWITCH(BPAAVC.K,1E6,ROSSAS.K-3)
2940 A      ROSSC4.K=SWITCH(MAX(0,BPAAVC.K-RAPEU.K),1E6,ROSSAS.K-4)
2950 A      ROSSCAP.K=(MIN(ROSSC2.K,ROSSC3.K,ROSSC4.K))*8.76/ROSCRFB.K
2960 NOTE
2970 A      ROSSSH.K=TABHL(ROSCST,ROSUSH.K,0,20000,1000)
2980 A      ROSVAH.K=(ROSUSH.K-ROSCCHI)*(ROSSSH.K-ROSCSHI)/2
2990 A      ROSDLSH.K=TABHL(ROSCST,ROSCNH.K+ROSUSH.K+ROSDCL,0,20000,1000)
3000 X      -TABHL(ROSCST,ROSCNH.K+ROSUSH.K,0,20000,1000)
3010 A      ROSSLH.K=ROSDCL/(MAX(.01,ROSDLSH.K))
3020 A      ROSVCH.K=SQR(2*ROSSLH.K*ROSVAH.K,0)
3030 A      ROSSTH.K=MAX(ROSCNH.K,ROSPSC.K,SWITCH(ROSUSH.K,0,ROSTTS.K-1)+
3040 X      SWITCH(ROSUSH.K+ROSCNH.K,0,ROSTTS.K-2)+SWITCH(ROSUSH.K
3050 X      +ROSVCH.K,0,ROSTTS.K-3))
3060 NOTE
3070 A      ROSSSM.K=TABHL(ROSCST,ROSUSM.K,0,20000,1000)
3080 A      ROVSAM.K=(ROSUSM.K-ROSCMI)*(ROSSSM.K-ROSCSMI)/2
3090 A      ROSDLSM.K=TABHL(ROSCST,ROSCNM.K+ROSUSM.K+ROSDCL,0,20000,1000)
3100 X      -TABHL(ROSCST,ROSCNM.K+ROSUSM.K,0,20000,1000)

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3110 A ROSSL.M.K=ROSDCLC/(MAX(.01,ROSDL.M.K))
3120 A ROSVCM.K=SQR(MAX(2*ROSSL.M.K*ROSVAM.K,0))
3130 A ROSSIM.K=MAX(ROSI.CNM.K,ROSPSC.K,SWITCH(ROSUM.K,0,ROSTTS.K-1)+
3140 X SWITCH(ROSUM.K+ROSI.CNM.K,0,ROSTTS.K-2)+SWITCH(ROSUM.K
3150 X +ROSVCM.K,0,ROSTTS.K-3))
3160 NOTE
3170 A ROSSL.K=TABHL(ROSCST,ROSL.K,0,20000,1000)
3180 A ROSVAL.K=(ROSL.K-ROSCCL)* (ROSSL.K-ROSCCL)/2
3190 A ROSDSL.K=TABHL(ROSCST,ROSI.CNL.K+ROSL.K+ROSDCLC,0,20000,1000)
3200 X -TABHL(ROSCST,ROSI.CNL.K+ROSL.K,0,20000,1000)
3210 A ROSSL.L.K=ROSDCLC/(MAX(.01,RODSL.L.K))
3220 A ROSVCL.K=SQR(MAX(2*ROSSL.L.K*ROSVAM.K,0))
3230 A ROSSL.L.K=MAX(ROSI.CNL.K,ROSPSC.K,SWITCH(ROSL.K,0,ROSTTS.K-1)+
3240 X SWITCH(ROSL.K+ROSI.CNL.K,0,ROSTTS.K-2)+SWITCH(ROSL.K
3250 X +ROSVCL.K,0,ROSTTS.K-3))
3260 NOTE
3270 A ROSUCH1.K=SWITCH(MIN(ROSMNL.K,ROSSCAP.K,CLIP(ROSSPLS.K*
3280 X ROSMF.K*ROSTOCH.K/(1+ROSMF.K),0,ROSTOCH.K,ROPSLH.K)),0,ROSCDS.K-1)
3290 A ROSUCH2.K=SWITCH(MIN(ROSMNL.K,ROSSCAP.K,CLIP(ROSAS.K,0,ROSTOCH.K,
3300 X ROPSLH.K)),0,ROSCDS.K-2)
3310 A ROSUCH3.K=SWITCH(MIN(ROSMNL.K,ROSSCAP.K,CLIP(ROSTOCH.K,0,ROSTOCH.K,
3320 X ROPSLH.K)),0,ROSCDS.K-3)
3330 A ROSUCH4.K=SWITCH(MIN(ROSMNL.K,ROSSCAP.K,CLIP(MIN(ROSTOCH.K,ROSAS.K),
3340 X 0,ROSTOCH.K,ROPSLH.K)),0,ROSCDS.K-4)
3350 A ROSUCH5.K=SWITCH(MIN(ROSMNL.K,ROSSCAP.K,CLIP(ROSTOCH.K-ROPSLH.K,
3360 X 0,ROSTOCH.K,ROPSLH.K)),0,ROSCDS.K-5)
3370 A ROSUCH.K=ROSSPLS.K*(ROSUCH1.K+ROSUCH2.K+ROSUCH3.K+ROSUCH4.K+ROSUCH5.K)
3380 NOTE
3390 A ROSUCM1.K=SWITCH(MIN(ROSMNL.K,ROSSCAP.K,CLIP(ROSSPLS.K*
3400 X ROSMF.K*ROSTOCH.K/(1+ROSMF.K),0,ROSTOCH.K,ROPSLM.K)),0,ROSCDS.K-1)
3410 A ROSUCM2.K=SWITCH(MIN(ROSMNL.K,ROSSCAP.K,CLIP(ROSAS.K,0,ROSTOCH.K,
3420 X ROPSLM.K)),0,ROSCDS.K-2)
3430 A ROSUCM3.K=SWITCH(MIN(ROSMNL.K,ROSSCAP.K,CLIP(ROSTOCH.K,0,ROSTOCH.K,
3440 X ROPSLM.K)),0,ROSCDS.K-3)
3450 A ROSUCM4.K=SWITCH(MIN(ROSMNL.K,ROSSCAP.K,CLIP(MIN(ROSTOCH.K,ROSAS.K),
3460 X 0,ROSTOCH.K,ROPSLM.K)),0,ROSCDS.K-4)
3470 A ROSUCM5.K=SWITCH(MIN(ROSMNL.K,ROSSCAP.K,CLIP(ROSTOCH.K-ROPSLM.K,
3480 X 0,ROSTOCH.K,ROPSLM.K)),0,ROSCDS.K-5)
3490 A ROSUCM.K=ROSSPLS.K*(ROSUCL1.K+ROSUCL2.K+ROSUCL3.K+ROSUCL4.K+ROSUCL5.K)
3500 NOTE
3510 A ROSUCL1.K=SWITCH(MIN(ROSMNL.K,ROSSCAP.K,CLIP(ROSSPLS.K*
3520 X ROSMF.K*ROSTOCL.K/(1+ROSMF.K),0,ROSTOCL.K,ROPSLL.K)),0,ROSCDS.K-1)
3530 A ROSUCL2.K=SWITCH(MIN(ROSMNL.K,ROSSCAP.K,CLIP(ROSAS.K,0,ROSTOCL.K,
3540 X ROPSLL.K)),0,ROSCDS.K-2)
3550 A ROSUCL3.K=SWITCH(MIN(ROSMNL.K,ROSSCAP.K,CLIP(ROSTOCL.K,0,ROSTOCL.K,
3560 X ROPSLL.K)),0,ROSCDS.K-3)
3570 A ROSUCL4.K=SWITCH(MIN(ROSMNL.K,ROSSCAP.K,CLIP(MIN(ROSTOCL.K,ROSAS.K),
3580 X 0,ROSTOCL.K,ROPSLL.K)),0,ROSCDS.K-4)
3590 A ROSUCL5.K=SWITCH(MIN(ROSMNL.K,ROSSCAP.K,CLIP(ROSTOCL.K-ROPSLL.K,
3600 X 0,ROSTOCL.K,ROPSLL.K)),0,ROSCDS.K-5)
3610 A ROSUCL.K=ROSSPLS.K*(ROSUCL1.K+ROSUCL2.K+ROSUCL3.K+ROSUCL4.K+ROSUCL5.K)
3620 NOTE
3630 A ROSPSH1.K=SWITCH(ROSFPL.K*8.76/ROSCRFB.K,0,ROSPKS.K-1)
3640 A ROSPSH2.K=SWITCH(ROSI.CNH.K,0,ROSPKS.K-2)
3650 A ROSPSLH.K=ROSPSH1.K+ROSPSH2.K
3660 NOTE
3670 A ROSSRIH.K=TABHL(ROSTOCT,ROSCSHI,0,1,.1)
3680 A ROSSRNH.K=TABHL(ROSTOCT,ROSI.CNH.K,0,1,.1)
3690 A ROSSRCH.K=TABHL(ROSTOCT,ROSI.CSH.K,0,1,.1)
3700 A ROSSRMH.K=(ROSSRNH.K-ROSSRIH.K)/(ROSSRCH.K-ROSSRIH.K)
3710 A ROSSRSH.K=(ROSI.CNH.K-ROSCSHI)/(ROSI.CSH.K-ROSCSHI)

```


3720 NOTE
 3730 A $ROSPSM1.K = SWITCH(ROSFPL.K * 8.76 / ROSCRFB.K, 0, ROSPKS.K - 1)$
 3740 A $ROSPSM2.K = SWITCH(ROSICNM.K, 0, ROSPKS.K - 2)$
 3750 A $ROSPSLM.K = ROSPSM1.K + ROSPSM2.K$
 3760 NOTE
 3770 A $ROSSRIM.K = TABHL(ROSTOCT, ROSCSMI, 0, 1, .1)$
 3780 A $ROSSRNM.K = TABHL(ROSTOCT, ROSISNM.K, 0, 1, .1)$
 3790 A $ROSSRCM.K = TABHL(ROSTOCT, ROSICSM.K, 0, 1, .1)$
 3800 A $ROSSRMM.K = (ROSSRNM.K - ROSSRIM.K) / (ROSSRCM.K - ROSSRIM.K)$
 3810 A $ROSSRSM.K = (ROSI SNM.K - ROSCSMI) / (ROSICSM.K - ROSCSMI)$
 3820 NOTE
 3830 A $ROSPSL1.K = SWITCH(ROSFPL.K * 8.76 / ROSCRFB.K, 0, ROSPKS.K - 1)$
 3840 A $ROSPSL2.K = SWITCH(ROSICNL.K, 0, ROSPKS.K - 2)$
 3850 A $ROSPSLL.K = ROSPSL1.K + ROSPSL2.K$
 3860 NOTE
 3870 A $ROSSRIL.K = TABHL(ROSTOCT, ROSCSLI, 0, 1, .1)$
 3880 A $ROSSRNL.K = TABHL(ROSTOCT, ROSISNL.K, 0, 1, .1)$
 3890 A $ROSSRCL.K = TABHL(ROSTOCT, ROSICSL.K, 0, 1, .1)$
 3900 A $ROSSRML.K = (ROSSRNL.K - ROSSRIL.K) / (ROSSRCL.K - ROSSRIL.K)$
 3910 A $ROSSRSL.K = (ROSI SNL.K - ROSCSLI) / (ROSICSL.K - ROSCSLI)$
 3920 NOTE
 3930 C $ROSSPIY = 1984$
 3940 C $ROSSP2Y = 1988$
 3950 C $ROSSP3Y = 3000$
 3960 A $ROSSP1S.K = CLIP(1, 0, TIME.K, ROSSPIY)$
 3970 A $ROSSP2S.K = ROSSP1S.K * CLIP(1, 0, TIME.K, ROSSP2Y)$
 3980 A $ROSSP3S.K = ROSSP2S.K * CLIP(1, 0, TIME.K, ROSSP3Y)$
 3990 A $ROSSPER.K = ROSSP1S.K + ROSSP2S.K + ROSSP3S.K$
 4000 C $ROSRMSY = 1984$
 4010 C $ROSRMCY = 3000$
 4020 A $ROSRMS.K = CLIP(1, 0, TIME.K, ROSRMSY) * CLIP(1, 0, ROSRMCY, TIME.K)$
 4030 NOTE
 4040 NOTE PERFORMANCE STANDARDS POLICY SECTION
 4050 NOTE
 4060 C $ROSPSSY = 3000$
 4070 C $ROSPSCY = 3000$
 4080 A $ROSPSS.K = CLIP(1, 0, TIME.K, ROSPSSY) * CLIP(1, 0, ROSPSCY, TIME.K)$
 4090 C $ROSPS = 0.0$
 4100 A $ROSPSC.K = TABHL(ROSOCT, (ROSEBU - ROSPS), 0, 1, .1) * ROSSPS.K$
 4110 NOTE
 4120 NOTE INFORMATION PROGRAMS POLICY SECTION
 4130 NOTE
 4140 C $ROSIMP = .5$
 4150 C $ROSIPSY = 3000$
 4160 C $ROSIPCY = 3000$
 4170 A $ROSIPS.K = CLIP(1, 0, TIME.K, ROSIPSY) * CLIP(1, 0, ROSIPCY, TIME.K)$
 4180 C $ROSIUPR = .35$
 4190 C $ROSIPD = 2$
 4200 C $ROSICPP = 200$
 4210 A $ROSIPP.K = ROHO.K * ROSPR.K * RO SIUPR * ROSIPS.K$
 4220 A $ROSIAP.K = MIN(DLINFL(ROSIPP.K, ROSIPD), ROSIPP.K)$
 4230 N $ROSIPP = 0$
 4240 A $ROSIAPR.K = RO SIAP.K / (ROHO.K * ROSPR.K)$
 4250 A $ROSIUC.K = (ROSIPP.K - RO SIAP.K) * ROSICPP * (1 + ROSAC) / ROSIPD$
 4260 NOTE
 4270 A $ROSIPHR.K = RIPHDRB.K * ROSIMP$
 4280 A $ROSIPMR.K = RIPMDRB.K * ROSIMP$
 4290 A $ROSIPLR.K = RIPLDRB.K * ROSIMP$
 4300 NOTE
 4310 A $ROSIWHR.K = ((1 - RO SIAPR.K) * RIPHDRB.K) + (RO SIAPR.K * ROSIPHR.K)$
 4320 A $ROSIWMR.K = ((1 - RO SIAPR.K) * RIPMDRB.K) + (RO SIAPR.K * ROSIPMR.K)$

4330 A $ROSIWLR.K = ((1 - ROSIAPR.K) * RIPLDRB.K) + (ROSIAPR.K * ROSIPLR.K)$
 4340 NOTE
 4350 A $ROSIHDB.K = CLIP(RIPHDRB.K, ROSIWHR.K, ROSIPSY, TIME.K)$
 4360 A $ROSIMDB.K = CLIP(RIPMDRB.K, ROSIWMR.K, ROSIPSY, TIME.K)$
 4370 A $ROSILDB.K = CLIP(RIPLDRB.K, ROSIWLK.K, ROSIPSY, TIME.K)$
 4380 NOTE
 4390 NOTE FINANCIAL INCENTIVES POLICY SECTION
 4400 NOTE
 4410 C $ROSFULR=.11$
 4420 C $ROSFISY=3000$
 4430 C $ROSFICY=3000$
 4440 C $ROSFAC=0$
 4450 C $ROSFUCF=0$
 4460 A $ROSFIS.K = CLIP(0, 1, ROSFISY, TIME.K) * CLIP(1, 0, ROSFICY, TIME.K)$
 4470 A $ROSFIM.K = TABHL(ROSFIMT, ROSFULR, 0, .11, .01)$
 4480 T $ROSFIMT = .12 / -.1 / -.05 / .1 / .15 / .2 / .3 / .4 / .5 / .65 / .8 / 1.0$
 4490 A $ROSTI.K = 1 + (ROSFIS.K * (ROSFIM.K - 1))$
 4500 A $ROSFDR.K = RDRL * ROSTI.K$
 4510 C $ROSFUPR=1$
 4520 C $ROSFDP=2$
 4530 A $ROSFPP.K = ROHO.K * ROSPR.K * ROSFUPR * ROFIS.K$
 4540 A $ROSFAP.K = MIN(DLINFI(ROSFPP.K, ROSFPD), ROSFPP.K)$
 4550 N $ROSFPP=0$
 4560 A $ROSFAPR.K = ROSFAP.K / (ROHO.K * ROSPR.K)$
 4570 A $ROSFWDK.K = ((1 - ROSFAPR.K) * RDRL) + (ROSFAPR.K * ROSFDR.K)$
 4580 A $ROSFDCF.K = ROSFUCF * ROSFAPR.K$
 4590 A $ROSFUEH.K = ROSENH.K * ROSFDCF.K$
 4600 A $ROSFUEM.K = ROSENM.K * ROSFDCF.K$
 4610 A $ROSFUEL.K = ROSENL.K * ROSFDCF.K$
 4620 A $ROSFUE.K = (ROSFUEH.K + ROSFUEM.K + ROSFUEL.K) * (1 + ROSFAC)$
 4630 NOTE
 4640 NOTE MAINLINE STRUCTURE
 4650 NOTE
 4660 C $ROSFLL=.29$
 4670 C $ROSFLLM=.42$
 4680 C $ROSFLLH=.29$
 4690 C $ROSNCBH=.0038$
 4700 C $ROSNCBM=.0203$
 4710 C $ROSNCLB=.0246$
 4720 NOTE
 4730 NOTE
 4740 NOTE
 4750 A $ROSEWA.K = (1 - RIPAPR.K) + (RIPAPR.K * ROSEMA)$
 4760 NOTE
 4770 A $ROSDNO.K = ROHO.K * ROSPR.K * ROSEU$
 4780 NOTE
 4790 A $ROSDNOH.K = ROSFLLH * ROSDNO.K * ROSEWA.K$
 4800 A $ROSDNOM.K = ROSFLLM * ROSDNO.K * ROSEWA.K$
 4810 A $ROSDNOL.K = ROSFLL * ROSDNO.K * ROSEWA.K$
 4820 NOTE
 4830 A $ROSHD.K = ROSIHDB.K + ROSFWDK.K$
 4840 A $ROSMD.K = ROSIMDB.K + ROSFWDK.K$
 4850 A $ROSLD.K = ROSILDB.K + ROSFWDK.K$
 4860 NOTE
 4870 A $ROSCRFH.K = ROSHD.K / (1 - 1 / (1 + ROSHD.K) ^ ROSSL)$
 4880 A $ROSCRFM.K = ROSMD.K / (1 - 1 / (1 + ROSMD.K) ^ ROSSL)$
 4890 A $ROSCRFLL.K = ROSLD.K / (1 - 1 / (1 + ROSLD.K) ^ ROSSL)$
 4900 A $ROSCRFB.K = BPADR / (1 - 1 / (1 + BPADR) ^ ROSSL)$
 4910 NOTE
 4920 A $ROSICNH.K = (RAPEU.K * ROSIRM * 8.76 / ROSCRFH.K) / (1 - RTAXS)$
 4930 A $ROSICNM.K = (RAPEU.K * ROSIRM * 8.76 / ROSCRFM.K) / (1 - RTAXS)$

4940 A $ROSICNL.K = (RAPEU.K * ROSIRM * 8.76 / ROSCRFL.K) / (1 - RTAXS)$
 4950 NOTE
 4960 A $ROSISNH.K = TABHL(ROSCST, ROSICNH.K, 0, 20000, 1000)$
 4970 A $ROSISNM.K = TABHL(ROSCST, ROSICNM.K, 0, 20000, 1000)$
 4980 A $ROSISNL.K = TABHL(ROSCST, ROSICNL.K, 0, 20000, 1000)$
 4990 NOTE
 5000 A $ROSMSNL.K = MAX(0, (RMCE.K - (RAPEU.K * ROSIRM)) * 8.76 / ROSCRFB.K)$
 5010 NOTE
 5020 A $ROSUSH.K = ROSSPLS.K * MIN(ROSMSNL.K, ROSSCAP.K,$
 5030 X $ROSMF.K * ROSICNH.K + ROSAS.K)$
 5040 A $ROSUSM.K = ROSSPLS.K * MIN(ROSMSNL.K, ROSSCAP.K,$
 5050 X $ROSMF.K * ROSICNM.K + ROSAS.K)$
 5060 A $ROSUSL.K = ROSSPLS.K * MIN(ROSMSNL.K, ROSSCAP.K,$
 5070 X $ROSMF.K * ROSICNL.K + ROSAS.K)$
 5080 NOTE
 5090 A $ROSICCH.K = ROSSTH.K$
 5100 A $ROSICCM.K = ROSSTM.K$
 5110 A $ROSICCL.K = ROSSLT.K$
 5120 NOTE
 5130 A $ROSICSH.K = TABHL(ROSCST, ROSICCH.K, 0, 20000, 1000)$
 5140 A $ROSICSM.K = TABHL(ROSCST, ROSICCM.K, 0, 20000, 1000)$
 5150 A $ROSICSL.K = TABHL(ROSCST, ROSICCL.K, 0, 20000, 1000)$
 5160 NOTE
 5170 A $ROSINCH.K = ROHO.K * ROSPR.K * ROSFLH * ROSICSH.K$
 5180 A $ROSINCM.K = ROHO.K * ROSPR.K * ROSFLM * ROSICSM.K$
 5190 A $ROSINCL.K = ROHO.K * ROSPR.K * ROSFLL * ROSICSL.K$
 5200 NOTE
 5210 A $ROSNINH.K = MAX(0, (ROSINCH.K - ROSNCH.K) / (ROSSPPD.K))$
 5220 A $ROSNINM.K = MAX(0, (ROSINCM.K - ROSNCM.K) / (ROSSPPD.K))$
 5230 A $ROSNINL.K = MAX(0, (ROSINCL.K - ROSNCL.K) / (ROSSPPD.K))$
 5240 NOTE
 5250 A $ROSNIRH.K = ROSNRRH.JK * CLIP(0, 1, ROSNCH.K, ROSINCH.K)$
 5260 A $ROSNIRM.K = ROSNRRM.JK * CLIP(0, 1, ROSNCM.K, ROSINCM.K)$
 5270 A $ROSNIRL.K = ROSNRRL.JK * CLIP(0, 1, ROSNCL.K, ROSINCL.K)$
 5280 NOTE
 5290 R $ROSNCIH.KL = ROSNINH.K + ROSNIRH.K$
 5300 R $ROSNCIM.KL = ROSNINM.K + ROSNIRM.K$
 5310 R $ROSNCIL.KL = ROSNINL.K + ROSNIRL.K$
 5320 NOTE
 5330 NOTE
 5340 R $ROSNRRH.KL = VINTG(ROSNCIH.JK, ROSSL, RHALT.K, ROSNCH.K, ROSNRSH.K,$
 5350 X $ROSNCBH)$
 5360 R $ROSNRRM.KL = VINTG(ROSNCIM.JK, ROSSL, RHALT.K, ROSNCM.K, ROSNRSM.K,$
 5370 X $ROSNCBM)$
 5380 R $ROSNRRL.KL = VINTG(ROSNCIL.JK, ROSSL, RHALT.K, ROSNCL.K, ROSNRSL.K,$
 5390 X $ROSNCLB)$
 5400 NOTE
 5410 A $ROSDH.K = ROSDNOH.K - ROSNCH.K$
 5420 A $ROSDM.K = ROSDNOM.K - ROSNCM.K$
 5430 A $ROSDL.K = ROSDNOL.K - ROSNCL.K$
 5440 NOTE
 5450 A $ROSACSH.K = (ROSNCH.K) / (ROHO.K * ROSPR.K * ROSFLH)$
 5460 A $ROSACSM.K = (ROSNCM.K) / (ROHO.K * ROSPR.K * ROSFLM)$
 5470 A $ROSACSL.K = (ROSNCL.K) / (ROHO.K * ROSPR.K * ROSFLL)$
 5480 NOTE
 5490 A $ROSTCCH.K = TABHL(ROSCCT, ROSACSH.K, 0, 1, .1)$
 5500 A $ROSTCCM.K = TABHL(ROSCCT, ROSACSM.K, 0, 1, .1)$
 5510 A $ROSTCCL.K = TABHL(ROSCCT, ROSACSL.K, 0, 1, .1)$
 5520 NOTE
 5530 A $ROSPCH.K = MAX(0, (ROSTCCH.K - ROSUCH.K) * (1 - RTAXS))$
 5540 A $ROSPCM.K = MAX(0, (ROSTCCM.K - ROSUCM.K) * (1 - RTAXS))$

5550 A $ROSPCL.K = \text{MAX}(0, (ROSTOCL.K - ROSUCL.K) * (1 - RTAXS))$
5560 NOTE
5570 A $ROSTXH.K = (ROSTOCH.K - ROSUCH.K) * RTAXS$
5580 A $ROSTXM.K = (ROSTOCM.K - ROSUCM.K) * RTAXS$
5590 A $ROSTXL.K = (ROSTOCL.K - ROSUCL.K) * RTAXS$
5600 NOTE
5610 A $ROSUENH.K = ROSUCH.K * ROSNINH.K$
5620 A $ROSUENM.K = ROSUCM.K * ROSNINM.K$
5630 A $ROSUENL.K = ROSUCL.K * ROSNINL.K$
5640 NOTE
5650 A $ROSPENH.K = ROSPCH.K * ROSNINH.K * (1 - ROSFWCF.K)$
5660 A $ROSPENM.K = ROSPCM.K * ROSNINM.K * (1 - ROSFWCF.K)$
5670 A $ROSPENL.K = ROSPCL.K * ROSNINL.K * (1 - ROSFWCF.K)$
5680 NOTE
5690 A $ROSTENH.K = ROSTXH.K * ROSNINH.K$
5700 A $ROSTENM.K = ROSTXM.K * ROSNINM.K$
5710 A $ROSTENL.K = ROSTXL.K * ROSNINL.K$
5720 NOTE
5730 A $ROSDUCH.K = \text{DLINF3}(ROSUCH.K, ROSSL)$
5740 A $ROSDUCM.K = \text{DLINF3}(ROSUCM.K, ROSSL)$
5750 A $ROSDUCL.K = \text{DLINF3}(ROSUCL.K, ROSSL)$
5760 NOTE
5770 A $ROSDPCH.K = \text{DLINF3}(ROSPCH.K, ROSSL)$
5780 A $ROSDPCM.K = \text{DLINF3}(ROSPCM.K, ROSSL)$
5790 A $ROSDPCL.K = \text{DLINF3}(ROSPCL.K, ROSSL)$
5800 NOTE
5810 A $ROSDTXH.K = \text{DLINF3}(ROSTXH.K, ROSSL)$
5820 A $ROSDTXM.K = \text{DLINF3}(ROSTXM.K, ROSSL)$
5830 A $ROSDTXL.K = \text{DLINF3}(ROSTXL.K, ROSSL)$
5840 NOTE
5850 A $ROSUERH.K = ROSNIRH.K * ROSDUCH.K * ROSRMS.K$
5860 A $ROSUERM.K = ROSNIRM.K * ROSDUCM.K * ROSRMS.K$
5870 A $ROSUERL.K = ROSNIRL.K * ROSDUCL.K * ROSRMS.K$
5880 NOTE
5890 A $ROSPERH.K = ROSNIRH.K * ROSDPCH.K + ((1 - ROSRMS.K) * (1 - RTAXS))$
5900 X $* ROSNIRH.K * ROSDUCH.K)$
5910 A $ROSPERM.K = ROSNIRM.K * ROSDPCM.K + ((1 - ROSRMS.K) * (1 - RTAXS))$
5920 X $* ROSNIRM.K * ROSDUCM.K)$
5930 A $ROSPERL.K = ROSNIRL.K * ROSDPCL.K + ((1 - ROSRMS.K) * (1 - RTAXS))$
5940 X $* ROSNIRL.K * ROSDUCL.K)$
5950 NOTE
5960 A $ROSTERH.K = ROSNIRH.K * ROSDTXH.K + ((1 - ROSRMS.K) * RTAXS)$
5970 X $* ROSNIRH.K * ROSDUCH.K)$
5980 A $ROSTERM.K = ROSNIRM.K * ROSDTXM.K + ((1 - ROSRMS.K) * RTAXS)$
5990 X $* ROSNIRM.K * ROSDUCM.K)$
6000 A $ROSTERL.K = ROSNIRL.K * ROSDTXL.K + ((1 - ROSRMS.K) * RTAXS)$
6010 X $* ROSNIRL.K * ROSDUCL.K)$
6020 NOTE
6030 A $ROSUEH.K = (ROSUENH.K + ROSUERH.K) * (1 + ROSAC)$
6040 A $ROSUEM.K = (ROSUENM.K + ROSUERM.K) * (1 + ROSAC)$
6050 A $ROSUEL.K = (ROSUENL.K + ROSUERL.K) * (1 + ROSAC)$
6060 A $ROSPEN.K = ROSPENH.K + ROSPENM.K + ROSPENL.K$
6070 A $ROSTEN.K = ROSTENH.K + ROSTENM.K + ROSTENL.K$
6080 A $ROSPER.K = ROSPERH.K + ROSPERM.K + ROSPERL.K$
6090 A $ROSTER.K = ROSTERH.K + ROSTERM.K + ROSTERL.K$
6100 NOTE
6110 A $ROSUE.K = ROSUEH.K + ROSUEM.K + ROSUEL.K$
6120 A $ROSPE.K = ROSPEN.K + ROSPER.K$
6130 A $ROSTE.K = ROSTEN.K + ROSTER.K$
6140 NOTE
6150 L $ROSAUE.K = ROSAUE.J + DT * ROSAUEI.JK$

6160 N ROSAUE=0
6170 R ROSAUEI.KL=ROSUE.K+ROSFUE.K+ROSIUC.K
6180 NOTE
6190 L ROSTPE.K=ROSTPE.J+DT*ROSTPEI.JK
6200 N ROSTPE=.00001
6210 R ROSTPEI.KL=ROSPE.K
6220 NOTE
6230 A ROSNC.K=ROSNCH.K+ROSNCM.K+ROSNCL.K
6240 NOTE
6250 A ROSICEO.K=RMCE.K*8.76/ROSCRFB.K
6260 A ROSICSO.K=TABHL(ROSCST,ROSICEO.K,0,20000,1000)
6270 NOTE
6280 NOTE
6290 NOTE BEHAVIORAL FACTORS
6300 NOTE
6310 C ROSNERH=.047
6320 C ROSNERM=.0140
6330 C ROSNERL=.0055
6340 C ROSBSS=1
6350 C ROHIGHR=.019
6360 C ROHHIHI=6700
6370 C ROHHIMI=21000
6380 C ROHHILI=47000
6390 NOTE
6400 A ROSAENH.K=RAPEU.K*ROSIRM*8.76*((ROSBU*ROSEWA.K)-ROSACSH.K)
6410 A ROSAENM.K=RAPEU.K*ROSIRM*8.76*((ROSBU*ROSEWA.K)-ROSACSM.K)
6420 A ROSAENL.K=RAPEU.K*ROSIRM*8.76*((ROSBU*ROSEWA.K)-ROSACSL.K)
6430 NOTE
6440 A ROHHIH.K=TABHL(ROHHIHT,TIME.K,1984,2004,5)*DEMEGM
6450 T ROHHIHT=7300/7900/8200/8400/8700
6460 A ROHHIM.K=TABHL(ROHHIMT,TIME.K,1984,2004,5)*DEMEGM
6470 T ROHHIMT=22700/24400/25300/26100/27000
6480 A ROHHIL.K=TABHL(ROHHILT,TIME.K,1984,2004,5)*DEMEGM
6490 T ROHHILT=50900/54800/56900/58700/60600
6500 NOTE
6510 A ROSEIRH.K=ROSAENH.K/ROHHIH.K
6520 A ROSEIRM.K=ROSAENM.K/ROHHIM.K
6530 A ROSEIRL.K=ROSAENL.K/ROHHIL.K
6540 NOTE
6550 A ROSDMBH.K=SWITCH(1,TABHL(ROSDMBT,ROSEIRH.K/ROSNERH,0,2,.1),ROSBSS)
6560 A ROSDMBM.K=SWITCH(1,TABHL(ROSDMBT,ROSEIRM.K/ROSNERM,0,2,.1),ROSBSS)
6570 A ROSDMBL.K=SWITCH(1,TABHL(ROSDMBT,ROSEIRL.K/ROSNERL,0,2,.1),ROSBSS)
6580 T ROSDMBT=1.1/1.1/1.1/1.1/1.1/1.095/1.085/1.07/1.05
6590 X /1.025/1/.975/.955/.945/.935/.925/.92/.915/.91/.905/.9
6600 NOTE
6610 A ROSNDH.K=ROSDH.K*ROSDMBH.K
6620 A ROSNDM.K=ROSDM.K*ROSDMBM.K
6630 A ROSNDL.K=ROSDL.K*ROSDMBL.K
6640 NOTE
6650 A ROSDBB.K=ROSDL.K+ROSDM.K+ROSDH.K
6660 A ROSD.K=ROSDNL.K+ROSDNM.K+ROSDNH.K
6670 A ROSCONS.K=ROSDNO.K-ROSD.K
6680 A ROSCONH.K=ROSDNOH.K-ROSDNH.K
6690 A ROSCONM.K=ROSDNOM.K-ROSDNM.K
6700 A ROSCONL.K=ROSDNOL.K-ROSDNL.K
6710 A ROSRNC.K=(ROSAUE.K*ROSCRFB.K)/(87.6*ROSCONS.K)
6720 NOTE
6730 NOTE PAYBACK TIME OF CONSERVATION AND PARTICIPATION DELAY
6740 NOTE
6750 C ROSPMSY=3000
6760 C ROSFCPP=.1838

6770 C ROSNPDD=15
6780 C ROSNPD1=15
6790 C ROSNPD2=22
6800 C ROSNPD3=5
6810 A ROSNPD.K=SWITCH(ROSNPDD,0,ROSSPER.K)+SWITCH(ROSNPD1,0,ROSSPER.K-1)
6820 X +SWITCH(ROSNPD2,0,ROSSPER.K-2)+SWITCH(ROSNPD3,0,ROSSPER.K-3)
6830 C ROSNCPT=.12
6840 A ROSCSAI.K=ROSCSHI*ROSFLLH+ROSCSMI*ROSFLLM+ROSCSLI*ROSFLLM
6850 A ROSAICS.K=ROSICSH.K*ROSFLLH+ROSICSM.K*ROSFLLM+ROSICSL.K*ROSFLLM
6860 A ROSFMPP.K=CLIP(ROSFPCP,1,ROSSPLS.K,.01)
6870 A ROSITPC.K=TABHL(ROSTOCT,ROSAICS.K,0,1,.1)*ROSFMPP.K
6880 A ROSCPT.K=ROSITPC.K/((ROSAICS.K-ROSCSAI.K)/ROSRCPF.K*8.76*RAPEU.K)
6890 A ROSPDM.K=TABHL(ROSPDMT,ROSCPT.K/ROSNCP,0,8,.5)
6900 T ROSPDMT=.33/.7/1/1.17/1.33/1.43/1.5/1.6/1.69/
6910 X 1.74/1.79/1.82/1.88/1.92/1.96/1.98/2.0
6920 A ROSIPPD.K=CLIP(ROSNPD.K*ROSPDM.K,ROSNPD.K,TIME.K,ROSPMSY)
6930 A ROSSPPD.K=CLIP(ROSIPPD.K,ROSSL,ROSCPT.K,0)
6940 NOTE
6950 NOTE
6960 NOTE ENERGY SERVICE COST
6970 NOTE
6980 C ROSBEC=1320
6990 A ROSRCRF.K=RDRL/(1-1/(1+RDRL)^ROSSL)
7000 A ROSAACS.K=ROSACSH.K*ROSFLLH+ROSACSM.K*ROSFLLM+ROSACSL.K*ROSFLL
7010 A ROSESC1.K=(ROSTPE.K+ROSBEC)*ROSRCPF.K
7020 A ROSESC2.K=(ROSEBU-ROSAACS.K)*RAPEU.K*8.76
7030 A ROSESC.K=ROSESC1.K+ROSESC2.K
7040 NOTE
7050 NOTE WATER HEATING
7060 NOTE
7070 T ROWOCT=0/432/457/1680/9246/14064/21118
7080 T ROWCST=0/.122/.159/.171/.172/.173/.174/.175/.176/.177/
7090 X .238/.240/.242/.244/.250/.256/.263/.269/.276
7100 T ROWTOCT=0/20/43/98/377/857/1835
7110 C ROWBU=.47
7120 C ROWBMA=1.0
7130 C ROWAC=.11
7140 C ROWSL=13
7150 C ROWSPPD=13
7160 A ROWPR.K=TABHL(ROWPRT,TIME.K,1984,2004,5)
7170 T ROWPRT=.840/.840/.850/.860/.870
7180 NOTE
7190 NOTE SUBSIDY PROGRAMS POLICY SECTION
7200 NOTE
7210 C ROWSAS=0
7220 C ROWSTS=2
7230 C ROWCDS=0
7240 C ROWPKGS=0
7250 C ROWSFS=0
7260 C ROWFCMS=0
7270 C ROWFC=0
7280 C ROWOCHI=229
7290 C ROWOCMI=432
7300 C ROWOCLI=437
7310 C ROWCSHI=.0264
7320 C ROWCSMI=.04995
7330 C ROWCSLI=.0600
7340 C ROWDELC=100
7350 C ROWFPSL=0
7360 NOTE
7370 A ROWAS5.K=SWITCH(ROWSFS,0,ROWSAS-5)

7380 A ROWAS6.K=SWITCH(BPAAVC.K,0,ROWSAS-6)
 7390 A ROWAS7.K=SWITCH(MAX(0,BPAAVC.K-RAPEU.K),0,ROWSAS-7)
 7400 A ROWAS.K=(ROWAS5.K+ROWAS6.K+ROWAS7.K)*8.76/ROWCRFB.K
 7410 NOTE
 7420 A ROWMF.K=SWITCH(ROWFCMS,0,ROWSAS-1)+SWITCH(ROWFCMS,0,ROWSAS-2)
 7430 X +SWITCH(ROWFCMS,0,ROWSAS-3)+SWITCH(ROWFCMS,0,ROWSAS-4)
 7440 NOTE
 7450 A ROWSC2.K=SWITCH(ROWFC,1E6,ROWSAS-2)
 7460 A ROWSC3.K=SWITCH(BPAAVC.K,1E6,ROWSAS-3)
 7470 A ROWSC4.K=SWITCH(MAX(0,BPAAVC.K-RAPEU.K),1E6,ROWSAS-4)
 7480 A ROWSCAP.K=(MIN(ROWSC2.K,ROWSC3.K,ROWSC4.K))*8.76/ROWCRFB.K
 7490 NOTE
 7500 A ROWSSH.K=TABHL(ROWCST,ROWUSH.K,0,18000,1000)
 7510 A ROWVAH.K=(ROWUSH.K-ROWCCHI)*(ROWSSH.K-ROWCSHI)/2
 7520 A ROWDLSH.K=TABHL(ROWCST,ROWICNH.K+ROWUSH.K+ROWDELCL,0,18000,1000)
 7530 X -TABHL(ROWCST,ROWICNH.K+ROWUSH.K,0,18000,1000)
 7540 A ROWSLH.K=ROWDELCL/(MAX(.01,ROWDLSH.K))
 7550 A ROWVCH.K=SQRT(MAX(2*ROWSLH.K*ROWVAH.K,0))
 7560 A ROWSTH.K=MAX(ROWICNH.K,ROWPSC.K,SWITCH(ROWUSH.K,0,ROWSTS-1)+
 7570 X SWITCH(ROWUSH.K+ROWICNH.K,0,ROWSTS-2)+SWITCH(ROWUCH.K
 7580 X +ROWVCH.K,0,ROWSTS-3))
 7590 NOTE
 7600 A ROWSSM.K=TABHL(ROWCST,ROWUSM.K,0,18000,1000)
 7610 A ROWVAM.K=(ROWUSM.K-ROWCCMI)*(ROWSSM.K-ROWCSMI)/2
 7620 A ROWDLSM.K=TABHL(ROWCST,ROWICNM.K+ROWUSM.K+ROWDELCL,0,18000,1000)
 7630 X -TABHL(ROWCST,ROWICNM.K+ROWUSM.K,0,18000,1000)
 7640 A ROWSLM.K=ROWDELCL/(MAX(.01,ROWDLSM.K))
 7650 A ROWVCM.K=SQRT(MAX(2*ROWSLM.K*ROWVAM.K,0))
 7660 A ROWSTM.K=MAX(ROWICNM.K,ROWPSC.K,SWITCH(ROWUSM.K,0,ROWSTS-1)+
 7670 X SWITCH(ROWUSM.K+ROWICNM.K,0,ROWSTS-2)+SWITCH(ROWUSM.K
 7680 X +ROWVCM.K,0,ROWSTS-3))
 7690 NOTE
 7700 A ROWSSL.K=TABHL(ROWCST,ROWUSL.K,0,18000,1000)
 7710 A ROWVAL.K=(ROWUSL.K-ROWCCLI)*(ROWSSL.K-ROWCSLI)/2
 7720 A ROWDLSL.K=TABHL(ROWCST,ROWICNL.K+ROWUSL.K+ROWDELCL,0,18000,1000)
 7730 X -TABHL(ROWCST,ROWICNL.K+ROWUSL.K,0,18000,1000)
 7740 A ROWSLL.K=ROWDELCL/(MAX(.01,ROWDLSL.K))
 7750 A ROWVCL.K=SQRT(MAX(2*ROWSLL.K*ROWVAL.K,0))
 7760 A ROWSTL.K=MAX(ROWICNL.K,ROWPSC.K,SWITCH(ROWUSL.K,0,ROWSTS-1)+
 7770 X SWITCH(ROWUSL.K+ROWICNL.K,0,ROWSTS-2)+SWITCH(ROWUSL.K
 7780 X +ROWVCL.K,0,ROWSTS-3))
 7790 NOTE
 7800 A ROWUCH1.K=SWITCH(MIN(ROWMSNL.K,ROWSCAP.K,ROWSRFH.K*ROWSPS.K*
 7810 X ROWMF.K*ROWTOCH.K/(1+ROWSRFH.K*ROWMF.K)),0,ROWCDS-1)
 7820 A ROWUCH2.K=SWITCH(MIN(ROWMSNL.K,ROWSCAP.K,CLIP(ROWAS.K,0,ROWTOCH.K,
 7830 X ROWPSLH.K)),0,ROWCDS-2)
 7840 A ROWUCH3.K=SWITCH(MIN(ROWMSNL.K,ROWSCAP.K,CLIP(ROWTOCH.K,0,ROWTOCH.K,
 7850 X ROWPSLH.K)),0,ROWCDS-3)
 7860 A ROWUCH4.K=SWITCH(MIN(ROWMSNL.K,ROWSCAP.K,CLIP(MIN(ROWTOCH.K,ROWAS.K),
 7870 X 0,ROWTOCH.K,ROWPSLH.K)),0,ROWCDS-4)
 7880 A ROWUCH5.K=SWITCH(MIN(ROWMSNL.K,ROWSCAP.K,CLIP(ROWTOCH.K-ROWPSLH.K,
 7890 X 0,ROWTOCH.K,ROWPSLH.K)),0,ROWCDS-5)
 7900 A ROWUCH.K=ROWSPS.K*(ROWUCH1.K+ROWUCH2.K+ROWUCH3.K+ROWUCH4.K+ROWUCH5.K)
 7910 NOTE
 7920 A ROWUCM1.K=SWITCH(MIN(ROWMSNL.K,ROWSCAP.K,ROWSRFM.K*ROWSPS.K*
 7930 X ROWMF.K*ROWTOCM.K/(1+ROWSRFM.K*ROWMF.K)),0,ROWCDS-1)
 7940 A ROWUCM2.K=SWITCH(MIN(ROWMSNL.K,ROWSCAP.K,CLIP(ROWAS.K,0,ROWTOCM.K,
 7950 X ROWPSLM.K)),0,ROWCDS-2)
 7960 A ROWUCM3.K=SWITCH(MIN(ROWMSNL.K,ROWSCAP.K,CLIP(ROWTOCM.K,0,ROWTOCM.K,
 7970 X ROWPSLM.K)),0,ROWCDS-3)
 7980 A ROWUCM4.K=SWITCH(MIN(ROWMSNL.K,ROWSCAP.K,CLIP(MIN(ROWTOCM.K,ROWAS.K),

7990 X $0, \text{ROWTOCM.K}, \text{ROWPSLM.K}) , 0, \text{ROWCDS}-4)$
 8000 A $\text{ROWUCM5.K} = \text{SWITCH}(\text{MIN}(\text{ROWMSNL.K}, \text{ROWSCAP.K}, \text{CLIP}(\text{ROWTOCM.K} - \text{ROWPSLM.K},$
 8010 X $0, \text{ROWTOCM.K}, \text{ROWPSLM.K}) , 0, \text{ROWCDS}-5)$
 8020 A $\text{ROWUCM.K} = \text{ROWSPS.K} * (\text{ROWUCM1.K} + \text{ROWUCM2.K} + \text{ROWUCM3.K} + \text{ROWUCM4.K} + \text{ROWUCM5.K})$
 8030 NOTE
 8040 A $\text{ROWUCL1.K} = \text{SWITCH}(\text{MIN}(\text{ROWMSNL.K}, \text{ROWSCAP.K}, \text{ROWSRFL.K} * \text{ROWSPS.K} * \text{ROWMF.K} * \text{ROWTOCL.K} / (1 + \text{ROWSRFL.K} * \text{ROWMF.K}) , 0, \text{ROWCDS}-1)$
 8050 X
 8060 A $\text{ROWUCL2.K} = \text{SWITCH}(\text{MIN}(\text{ROWMSNL.K}, \text{ROWSCAP.K}, \text{CLIP}(\text{ROWAS.K}, 0, \text{ROWTOCL.K},$
 8070 X $\text{ROWPSLL.K}) , 0, \text{ROWCDS}-2)$
 8080 A $\text{ROWUCL3.K} = \text{SWITCH}(\text{MIN}(\text{ROWMSNL.K}, \text{ROWSCAP.K}, \text{CLIP}(\text{ROWTOCL.K}, 0, \text{ROWTOCL.K},$
 8090 X $\text{ROWPSLL.K}) , 0, \text{ROWCDS}-3)$
 8100 A $\text{ROWUCL4.K} = \text{SWITCH}(\text{MIN}(\text{ROWMSNL.K}, \text{ROWSCAP.K}, \text{CLIP}(\text{MIN}(\text{ROWTOCL.K}, \text{ROWAS.K}) ,$
 8110 X $0, \text{ROWTOCL.K}, \text{ROWPSLL.K}) , 0, \text{ROWCDS}-4)$
 8120 A $\text{ROWUCL5.K} = \text{SWITCH}(\text{MIN}(\text{ROWMSNL.K}, \text{ROWSCAP.K}, \text{CLIP}(\text{ROWTOCL.K} - \text{ROWPSLL.K},$
 8130 X $0, \text{ROWTOCL.K}, \text{ROWPSLL.K}) , 0, \text{ROWCDS}-5)$
 8140 A $\text{ROWUCL.K} = \text{ROWSPS.K} * (\text{ROWUCL1.K} + \text{ROWUCL2.K} + \text{ROWUCL3.K} + \text{ROWUCL4.K} + \text{ROWUCL5.K})$
 8150 NOTE
 8160 A $\text{ROWPSH1.K} = \text{SWITCH}(\text{ROWFPSL} * 8.76 / \text{ROWCRFB.K}, 0, \text{ROWPKGS}-1)$
 8170 A $\text{ROWPSH2.K} = \text{SWITCH}(\text{ROWICNH.K}, 0, \text{ROWPKGS}-2)$
 8180 A $\text{ROWPSLH.K} = \text{ROWPSH1.K} + \text{ROWPSH2.K}$
 8190 NOTE
 8200 A $\text{ROWPSM1.K} = \text{SWITCH}(\text{ROWFPSL} * 8.76 / \text{ROWCRFB.K}, 0, \text{ROWPKGS}-1)$
 8210 A $\text{ROWPSM2.K} = \text{SWITCH}(\text{ROWICNM.K}, 0, \text{ROWPKGS}-2)$
 8220 A $\text{ROWPSLM.K} = \text{ROWPSM1.K} + \text{ROWPSM2.K}$
 8230 NOTE
 8240 A $\text{ROWPSL1.K} = \text{SWITCH}(\text{ROWFPSL} * 8.76 / \text{ROWCRFB.K}, 0, \text{ROWPKGS}-1)$
 8250 A $\text{ROWPSL2.K} = \text{SWITCH}(\text{ROWICNL.K}, 0, \text{ROWPKGS}-2)$
 8260 A $\text{ROWPSLL.K} = \text{ROWPSL1.K} + \text{ROWPSL2.K}$
 8270 NOTE
 8280 C $\text{ROWSPSY} = 3000$
 8290 C $\text{ROWSPCY} = 3000$
 8300 A $\text{ROWSPS.K} = \text{CLIP}(1, 0, \text{TIME.K}, \text{ROWSPSY}) * \text{CLIP}(1, 0, \text{ROWSPCY}, \text{TIME.K})$
 8310 C $\text{ROWRSSY} = 3000$
 8320 C $\text{ROWRSCY} = 3000$
 8330 A $\text{ROWRSS.K} = \text{CLIP}(1, 0, \text{TIME.K}, \text{ROWRSSY}) * \text{CLIP}(1, 0, \text{ROWRSCY}, \text{TIME.K})$
 8340 C $\text{ROWMSY} = 3000$
 8350 C $\text{ROWRCY} = 3000$
 8360 A $\text{ROWMS.K} = \text{CLIP}(1, 0, \text{TIME.K}, \text{ROWMSY}) * \text{CLIP}(1, 0, \text{ROWRCY}, \text{TIME.K})$
 8370 NOTE
 8380 NOTE PERFORMANCE STANDARDS POLICY SECTION
 8390 NOTE
 8400 C $\text{ROWPSSY} = 1988$
 8410 C $\text{ROWPCY} = 3000$
 8420 A $\text{ROWPSS.K} = \text{CLIP}(1, 0, \text{TIME.K}, \text{ROWPSSY}) * \text{CLIP}(1, 0, \text{ROWPCY}, \text{TIME.K})$
 8430 C $\text{ROWPS} = .357$
 8440 A $\text{ROWPSC.K} = \text{TABHL}(\text{ROWCCT}, (\text{ROWBU} - \text{ROWPS}), 0, .3, .05) * \text{ROWPSS.K}$
 8450 NOTE
 8460 NOTE INFORMATION PROGRAMS POLICY SECTION
 8470 NOTE
 8480 C $\text{ROWIMP} = .5$
 8490 C $\text{ROWIPSY} = 3000$
 8500 C $\text{ROWIPCY} = 3000$
 8510 A $\text{ROWIPS.K} = \text{CLIP}(1, 0, \text{TIME.K}, \text{ROWIPSY}) * \text{CLIP}(1, 0, \text{ROWIPCY}, \text{TIME.K})$
 8520 C $\text{ROWIUPR} = .35$
 8530 C $\text{ROWIPD} = 2$
 8540 C $\text{ROWICPP} = 200$
 8550 A $\text{ROWIPP.K} = \text{ROHO.K} * \text{ROWPR.K} * \text{ROWIUPR} * \text{ROWIPS.K}$
 8560 A $\text{ROWIAP.K} = \text{MIN}(\text{DLINF1}(\text{ROWIPP.K}, \text{ROWIPD}), \text{ROWIPP.K})$
 8570 N $\text{ROWIPP} = 0$
 8580 A $\text{ROWIAPR.K} = \text{ROWIAP.K} / (\text{ROHO.K} * \text{ROWPR.K})$
 8590 A $\text{ROWIUC.K} = (\text{ROWIPP.K} - \text{ROWIAP.K}) * \text{ROWICPP} * (1 + \text{ROWAC}) / \text{ROWIPD}$

8600 NOTE
 8610 A $ROWIPHR.K = RIPHDRB.K * ROWIMP$
 8620 A $ROWIPMR.K = RIPMDRB.K * ROWIMP$
 8630 A $ROWIPLR.K = RIPLDRB.K * ROWIMP$
 8640 NOTE
 8650 A $ROWIHR.K = (1 - ROWIAPR.K) * RIPHDRB.K + (ROWIAPR.K * ROWIPHR.K)$
 8660 A $ROWIMR.K = (1 - ROWIAPR.K) * RIPMDRB.K + (ROWIAPR.K * ROWIPMR.K)$
 8670 A $ROWIWR.K = (1 - ROWIAPR.K) * RIPLDRB.K + (ROWIAPR.K * ROWIPLR.K)$
 8680 NOTE
 8690 A $ROWIHRB.K = CLIP(RIPHDRB.K, ROWIHR.K, ROWIPSY, TIME.K)$
 8700 A $ROWIMDB.K = CLIP(RIPMDRB.K, ROWIMR.K, ROWIPSY, TIME.K)$
 8710 A $ROWILDB.K = CLIP(RIPLDRB.K, ROWIWR.K, ROWIPSY, TIME.K)$
 8720 NOTE
 8730 NOTE FINANCIAL INCENTIVES POLICY SECTION
 8740 NOTE
 8750 C $ROWFULR = .11$
 8760 C $ROWFISY = 3000$
 8770 C $ROWFICY = 3000$
 8780 C $ROWFAC = 0$
 8790 C $ROWFUCF = 0$
 8800 A $ROWFIS.K = CLIP(0, 1, ROWFISY, TIME.K) * CLIP(1, 0, ROWFICY, TIME.K)$
 8810 A $ROWFIM.K = TABHL(ROWFIMT, ROWFULR, 0, .11, .01)$
 8820 T $ROWFIMT = -.12 / -.1 / -.05 / .1 / .15 / .2 / .3 / .4 / .5 / .65 / .8 / 1.0$
 8830 A $ROWFI.K = 1 + (ROWFIS.K * (ROWFIM.K - 1))$
 8840 A $ROWFDR.K = RDRL * ROWFI.K$
 8850 C $ROWFUPR = 1$
 8860 C $ROWFPD = 2$
 8870 A $ROWFPP.K = ROHO.K * ROWPR.K * ROWFUPR * ROWFIS.K$
 8880 A $ROWFAP.K = MIN(DLINFL(ROWFPP.K, ROWFPD), ROWFPP.K)$
 8890 N $ROWFPP = 0$
 8900 A $ROWFAPR.K = ROWFAP.K / (ROHO.K * ROWPR.K)$
 8910 A $ROWFWR.K = (1 - ROWFAPR.K) * RDRL + (ROWFAPR.K * ROWFDR.K)$
 8920 A $ROWFWCF.K = ROWFUCF * ROWFAPR.K$
 8930 A $ROWFUEH.K = ROWPENH.K * ROWFWCF.K$
 8940 A $ROWFUEM.K = ROWPENM.K * ROWFWCF.K$
 8950 A $ROWFUEL.K = ROWPENL.K * ROWFWCF.K$
 8960 A $ROWFUE.K = (ROWFUEH.K + ROWFUEM.K + ROWFUEL.K) * (1 + ROWFAC)$
 8970 NOTE
 8980 NOTE MAINLINE STRUCTURE
 8990 NOTE
 9000 C $ROWFLL = .29$
 9010 C $ROWFLM = .42$
 9020 C $ROWFLH = .29$
 9030 C $ROWNCBH = .0200$
 9040 C $ROWNCBM = .0547$
 9050 C $ROWNCBL = .0454$
 9060 NOTE
 9070 NOTE
 9080 NOTE
 9090 A $ROWEWA.K = (1 - RIPAPR.K) + (RIPAPR.K * ROWBMA)$
 9100 NOTE
 9110 A $ROWDNO.K = ROHO.K * ROWPR.K * ROWBU$
 9120 NOTE
 9130 A $ROWDNOH.K = ROWFLH * ROWDNO.K * ROWEWA.K$
 9140 A $ROWDNOM.K = ROWFLM * ROWDNO.K * ROWEWA.K$
 9150 A $ROWDNOL.K = ROWFLL * ROWDNO.K * ROWEWA.K$
 9160 NOTE
 9170 A $ROWHD.K = ROWIHRB.K + ROWFWR.K$
 9180 A $ROWMD.K = ROWIMDB.K + ROWFWR.K$
 9190 A $ROWLD.K = ROWILDB.K + ROWFWR.K$
 9200 NOTE

9210 A $ROWCRFH.K = ROWHD.K / (1 - 1 / (1 + ROWHD.K)^{ROWSL})$
 9220 A $ROWCRFM.K = ROWMD.K / (1 - 1 / (1 + ROWMD.K)^{ROWSL})$
 9230 A $ROWCRFL.K = ROWLD.K / (1 - 1 / (1 + ROWLD.K)^{ROWSL})$
 9240 A $ROWCRFB.K = BPADR / (1 - 1 / (1 + BPADR)^{ROWSL})$
 9250 NOTE
 9260 A $ROWICNH.K = (RAPEU.K * 8.76 / ROWCRFH.K) / (1 - RTAXS)$
 9270 A $ROWICNM.K = (RAPEU.K * 8.76 / ROWCRFM.K) / (1 - RTAXS)$
 9280 A $ROWICNL.K = (RAPEU.K * 8.76 / ROWCRFL.K) / (1 - RTAXS)$
 9290 NOTE
 9300 A $ROWISNH.K = TABHL(ROWCST, ROWICNH.K, 0, 18000, 1000)$
 9310 A $ROWISNM.K = TABHL(ROWCST, ROWICNM.K, 0, 18000, 1000)$
 9320 A $ROWISNL.K = TABHL(ROWCST, ROWICNL.K, 0, 18000, 1000)$
 9330 NOTE
 9340 A $ROWSRFH.K = 1 - ROWRSS.K * TABHL(ROWRFT, ROWACSH.K / ROWISNH.K, .6, 1.4, .1)$
 9350 A $ROWSRFM.K = 1 - ROWRSS.K * TABHL(ROWRFT, ROWACSM.K / ROWISNM.K, .6, 1.4, .1)$
 9360 A $ROWSRFL.K = 1 - ROWRSS.K * TABHL(ROWRFT, ROWACSL.K / ROWISNL.K, .6, 1.4, .1)$
 9370 T $ROWRFT = 1 / .9 / .8 / .65 / .5 / .35 / .2 / .1 / 0$
 9380 NOTE
 9390 A $ROWMSNL.K = MAX(0, (RMCE.K - RAPEU.K) * 8.76 / ROWCRFB.K)$
 9400 NOTE
 9410 A $ROWUSH.K = ROWSRFH.K * ROWSPS.K * MIN(ROWMSNL.K, ROWSCAP.K,$
 9420 X $ROWMF.K * ROWICNH.K + ROWAS.K)$
 9430 A $ROWUSM.K = ROWSRFM.K * ROWSPS.K * MIN(ROWMSNL.K, ROWSCAP.K,$
 9440 X $ROWMF.K * ROWICNM.K + ROWAS.K)$
 9450 A $ROWUSL.K = ROWSRFL.K * ROWSPS.K * MIN(ROWMSNL.K, ROWSCAP.K,$
 9460 X $ROWMF.K * ROWICNL.K + ROWAS.K)$
 9470 NOTE
 9480 A $ROWICCH.K = ROWSTH.K$
 9490 A $ROWICCM.K = ROWSTM.K$
 9500 A $ROWICCL.K = ROWSTL.K$
 9510 NOTE
 9520 A $ROWICSH.K = TABHL(ROWCST, ROWICCH.K, 0, 18000, 1000)$
 9530 A $ROWICSM.K = TABHL(ROWCST, ROWICCM.K, 0, 18000, 1000)$
 9540 A $ROWICSL.K = TABHL(ROWCST, ROWICCL.K, 0, 18000, 1000)$
 9550 NOTE
 9560 A $ROWINCH.K = ROHO.K * ROWPR.K * ROWFLH * ROWICSH.K$
 9570 A $ROWINCM.K = ROHO.K * ROWPR.K * ROWFLM * ROWICSM.K$
 9580 A $ROWINCL.K = ROHO.K * ROWPR.K * ROWFLL * ROWICSL.K$
 9590 NOTE
 9600 A $ROWNINH.K = MAX(0, (ROWINCH.K - ROWNCH.K) / ROWSPPD)$
 9610 A $ROWNINM.K = MAX(0, (ROWINCM.K - ROWNCM.K) / ROWSPPD)$
 9620 A $ROWNINL.K = MAX(0, (ROWINCL.K - ROWNCL.K) / ROWSPPD)$
 9630 NOTE
 9640 A $ROWNIRH.K = ROWNRRH.JK * CLIP(0, 1, ROWNCH.K, ROWINCH.K)$
 9650 A $ROWNIRM.K = ROWNRRM.JK * CLIP(0, 1, ROWNCM.K, ROWINCM.K)$
 9660 A $ROWNIRL.K = ROWNRRL.JK * CLIP(0, 1, ROWNCL.K, ROWINCL.K)$
 9670 NOTE
 9680 R $ROWNCIH.KL = ROWNINH.K + ROWNIRH.K$
 9690 R $ROWNCIM.KL = ROWNINM.K + ROWNIRM.K$
 9700 R $ROWNCIL.KL = ROWNINL.K + ROWNIRL.K$
 9710 NOTE
 9720 NOTE
 9730 R $ROWNRRH.KL = VINTG(ROWNCIH.KJ, ROWSL, RHALT.K, ROWNCH.K, ROWNRSH.K,$
 9740 X $ROWNCBH)$
 9750 R $ROWNRRM.KL = VINTG(ROWNCIM.KJ, ROWSL, RHALT.K, ROWNCM.K, ROWNRSM.K,$
 9760 X $ROWNCBM)$
 9770 R $ROWNRRL.KL = VINTG(ROWNCIL.KJ, ROWSL, RHALT.K, ROWNCL.K, ROWNRSL.K,$
 9780 X $ROWNCBL)$
 9790 NOTE
 9800 A $ROWDH.K = ROWDNOH.K - ROWNCH.K$
 9810 A $ROWDM.K = ROWDNOM.K - ROWNCM.K$

9820 A ROWDL.K=ROWDNOL.K-ROWNCL.K
 9830 NOTE
 9840 A ROWACSH.K=(ROWNCH.K)/(ROHO.K*ROWPR.K*ROWFLH)
 9850 A ROWACSM.K=(ROWNCM.K)/(ROHO.K*ROWPR.K*ROWFLM)
 9860 A ROWACSL.K=(ROWNCL.K)/(ROHO.K*ROWPR.K*ROWFLL)
 9870 NOTE
 9880 A ROWTOCH.K=TABHL(ROWCCT,ROWACSH.K,0,.3,.05)
 9890 A ROWTOCM.K=TABHL(ROWCCT,ROWACSM.K,0,.3,.05)
 9900 A ROWTOCL.K=TABHL(ROWCCT,ROWACSL.K,0,.3,.05)
 9910 NOTE
 9920 A ROWPCH.K=MAX(0,(ROWTOCH.K-ROWUCH.K)*(1-RTAXS))
 9930 A ROWPCM.K=MAX(0,(ROWTOCM.K-ROWUCM.K)*(1-RTAXS))
 9940 A ROWPCL.K=MAX(0,(ROWTOCL.K-ROWUCL.K)*(1-RTAXS))
 9950 NOTE
 9960 A ROWTXH.K=(ROWTOCH.K-ROWUCH.K)*RTAXS
 9970 A ROWTXM.K=(ROWTOCM.K-ROWUCM.K)*RTAXS
 9980 A ROWTXL.K=(ROWTOCL.K-ROWUCL.K)*RTAXS
 9990 NOTE
 10000 A ROWUENH.K=ROWUCH.K*ROWNINH.K
 10010 A ROWUENM.K=ROWUCM.K*ROWNINM.K
 10020 A ROWUENL.K=ROWUCL.K*ROWNINL.K
 10030 NOTE
 10040 A ROWPENH.K=ROWPCH.K*ROWNINH.K*(1-ROWFWCF.K)
 10050 A ROWPENM.K=ROWPCM.K*ROWNINM.K*(1-ROWFWCF.K)
 10060 A ROWPENL.K=ROWPCL.K*ROWNINL.K*(1-ROWFWCF.K)
 10070 NOTE
 10080 A ROWTENH.K=ROWTXH.K*ROWNINH.K
 10090 A ROWTENM.K=ROWTXM.K*ROWNINM.K
 10100 A ROWTENL.K=ROWTXL.K*ROWNINL.K
 10110 NOTE
 10120 A ROWDUCH.K=DLINF3(ROWUCH.K,ROWSL)
 10130 A ROWDUCM.K=DLINF3(ROWUCM.K,ROWSL)
 10140 A ROWDUCL.K=DLINF3(ROWUCL.K,ROWSL)
 10150 NOTE
 10160 A ROWDPCH.K=DLINF3(ROWPCH.K,ROWSL)
 10170 A ROWDPCM.K=DLINF3(ROWPCM.K,ROWSL)
 10180 A ROWDPCL.K=DLINF3(ROWPCL.K,ROWSL)
 10190 NOTE
 10200 A ROWDTXH.K=DLINF3(ROWTXH.K,ROWSL)
 10210 A ROWDTXM.K=DLINF3(ROWTXM.K,ROWSL)
 10220 A ROWDTXL.K=DLINF3(ROWTXL.K,ROWSL)
 10230 NOTE
 10240 A ROWUERH.K=ROWNIRH.K*ROWDUCH.K*ROWRMS.K
 10250 A ROWUERM.K=ROWNIRM.K*ROWDUCM.K*ROWRMS.K
 10260 A ROWUERL.K=ROWNIRL.K*ROWDUCL.K*ROWRMS.K
 10270 NOTE
 10280 A ROWPERH.K=ROWNIRH.K*ROWDPCH.K+((1-ROWRMS.K)*(1-RTAXS))
 10290 X *ROWNIRH.K*ROWDUCH.K)
 10300 A ROWPERM.K=ROWNIRM.K*ROWDPCM.K+((1-ROWRMS.K)*(1-RTAXS))
 10310 X *ROWNIRM.K*ROWDUCM.K)
 10320 A ROWPERL.K=ROWNIRL.K*ROWDPCL.K+((1-ROWRMS.K)*(1-RTAXS))
 10330 X *ROWNIRL.K*ROWDUCL.K)
 10340 NOTE
 10350 A ROWTERH.K=ROWNIRH.K*ROWDTXH.K+((1-ROWRMS.K)*RTAXS
 10360 X *ROWNIRH.K*ROWDUCH.K)
 10370 A ROWTERM.K=ROWNIRM.K*ROWDTXM.K+((1-ROWRMS.K)*RTAXS
 10380 X *ROWNIRM.K*ROWDUCM.K)
 10390 A ROWTERL.K=ROWNIRL.K*ROWDTXL.K+((1-ROWRMS.K)*RTAXS
 10400 X *ROWNIRL.K*ROWDUCL.K)
 10410 NOTE
 10420 A ROWUEH.K=(ROWUENH.K+ROWUERH.K)*(1+ROWAC)

10430 A $ROWUEM.K = (ROWUENM.K + ROWUERM.K) * (1 + ROWAC)$
 10440 A $ROWUEL.K = (ROWUENL.K + ROWUERL.K) * (1 + ROWAC)$
 10450 A $ROWPEN.K = ROWPENH.K + ROWPENM.K + ROWPENL.K$
 10460 A $ROWTEN.K = ROWTENH.K + ROWTENM.K + ROWTENL.K$
 10470 A $ROWPER.K = ROWPERH.K + ROWPERM.K + ROWPERL.K$
 10480 A $ROWTER.K = ROWTERH.K + ROWTERM.K + ROWTERL.K$
 10490 NOTE
 10500 A $ROWUE.K = ROWUEH.K + ROWUEM.K + ROWUEL.K$
 10510 A $ROWPE.K = ROWPEN.K + ROWPER.K$
 10520 A $ROWTE.K = ROWTEN.K + ROWTER.K$
 10530 NOTE
 10540 L $ROWAUE.K = ROWAUE.J + DT * ROWAUEI.JK$
 10550 N $ROWAUE = 0$
 10560 R $ROWAUEI.KL = ROWUE.K + ROWFUE.K + ROWIUC.K$
 10570 NOTE
 10580 L $ROWTPE.K = ROWTPE.J + DT * ROWTPEI.JK$
 10590 N $ROWTPE = 0$
 10600 R $ROWTPEI.KL = ROWPE.K$
 10610 NOTE
 10620 A $ROWNC.K = ROWNCH.K + ROWNCM.K + ROWNCL.K$
 10630 NOTE
 10640 A $ROWICEO.K = RMCE.K * 8.76 / ROWCRFB.K$
 10650 A $ROWICSO.K = TABHL(ROWCST, ROWICEO.K, 0, 18000, 1000)$
 10660 NOTE
 10670 NOTE BEHAVIORAL FACTORS
 10680 NOTE
 10690 C $ROWNERH = .032$
 10700 C $ROWNERM = .032$
 10710 C $ROWNERL = .032$
 10720 C $ROWBSS = 0$
 10730 C $ROWHIGR = .019$
 10740 C $ROWHIHI = 6700$
 10750 C $ROWHIMI = 21000$
 10760 C $ROWHILI = 47000$
 10770 NOTE
 10780 A $ROWAENH.K = RAPEU.K * 8.76 * ((ROWBU * ROWBWA.K) - ROWACSH.K)$
 10790 A $ROWAENM.K = RAPEU.K * 8.76 * ((ROWBU * ROWBWA.K) - ROWACSM.K)$
 10800 A $ROWAENL.K = RAPEU.K * 8.76 * ((ROWBU * ROWBWA.K) - ROWACSL.K)$
 10810 NOTE
 10820 A $ROWHIH.K = ROWHIHI * EXP(ROWHIGR * DEMEGM * (TIME.K - 1984))$
 10830 A $ROWHIM.K = ROWHIMI * EXP(ROWHIGR * DEMEGM * (TIME.K - 1984))$
 10840 A $ROWHIL.K = ROWHILI * EXP(ROWHIGR * DEMEGM * (TIME.K - 1984))$
 10850 NOTE
 10860 A $ROWEIRH.K = ROWAENH.K / ROWHIH.K$
 10870 A $ROWEIRM.K = ROWAENM.K / ROWHIM.K$
 10880 A $ROWEIRL.K = ROWAENL.K / ROWHIL.K$
 10890 NOTE
 10900 A $ROWDMBH.K = SWITCH(1, TABHL(ROWDMBT, ROWEIRH.K / ROWNERH, 0, 2, .5), ROWBSS)$
 10910 A $ROWDMBM.K = SWITCH(1, TABHL(ROWDMBT, ROWEIRM.K / ROWNERM, 0, 2, .5), ROWBSS)$
 10920 A $ROWDMBL.K = SWITCH(1, TABHL(ROWDMBT, ROWEIRL.K / ROWNERL, 0, 2, .5), ROWBSS)$
 10930 T $ROWDMBT = 1/1/1/1/1$
 10940 NOTE
 10950 A $ROWNDH.K = ROWDH.K * ROWDMBH.K$
 10960 A $ROWNDM.K = ROWDM.K * ROWDMBM.K$
 10970 A $ROWNDL.K = ROWDL.K * ROWDMBL.K$
 10980 NOTE
 10990 A $ROWDBB.K = ROWDL.K + ROWDM.K + ROWDH.K$
 11000 A $ROWD.K = ROWNDL.K + ROWNDM.K + ROWNDH.K$
 11010 A $ROWCONS.K = ROWDNO.K - ROWD.K$
 11020 A $ROWRNC.K = (ROWAUE.K * ROWCRFB.K) / (87.6 * ROWCONS.K)$
 11030 NOTE

11040 NOTE ENERGY SERVICE COST
 11050 NOTE
 11060 C ROWBEC=310
 11070 A ROWRCRF.K=RDRL/(1-1/(1+RDRL)^ROWSL)
 11080 A ROWAACS.K=ROWACSH.K*ROWFLH+ROWACSM.K*ROWFLM+ROWACSL.K*ROWFLI
 11090 A ROWESC1.K=(ROWIPE.K+ROWBEC)*ROWRCRF.K
 11100 A ROWESC2.K=(ROWBU-ROWAACS.K)*RAPEU.K*8.76
 11110 A ROWESC.K=ROWESC1.K+ROWESC2.K
 11120 NOTE
 11130 NOTE OTHER USES
 11140 NOTE
 11150 T ROOCT=0/77/118/179/439/1783/3369/8985
 11160 T ROOCTST=0/.223/.241/.25/.257/.262/.284/.301/.304/.322/
 11170 X .324/.327/.33/.342/.347/.347/.348
 11180 T ROOCTCT=0/0/5/14/28/63/199/485
 11190 C ROOBU=.89
 11200 C ROOAC=.11
 11210 C ROOSL=10
 11220 C ROOSPPD=10
 11230 A ROOPR.K=TABHL(ROOPRT,TIME.K,1984,2004,5)
 11240 T ROOPRT=1.0/1.1/1.2/1.26/1.28
 11250 C ROOBMA=1.0
 11260 NOTE
 11270 NOTE SUBSIDY PROGRAMS POLICY SECTION
 11280 NOTE
 11290 C ROOSAS=0
 11300 C ROOSTS=0
 11310 C ROOCDS=0
 11320 C ROOPKGS=0
 11330 C ROOSFS=0
 11340 C ROOFCMS=0
 11350 C ROOFC=0
 11360 C ROOCCHI=188
 11370 C ROOCCMI=211
 11380 C ROOCCLI=228
 11390 C ROOCSHI=.0122
 11400 C ROOCSMI=.0137
 11410 C ROOCSLI=.01478
 11420 C ROODELC=100
 11430 C ROOFPSL=0
 11440 NOTE
 11450 A ROOAS5.K=SWITCH(ROOSFS,0,ROOSAS-5)
 11460 A ROOAS6.K=SWITCH(BPAVC.K,0,ROOSAS-6)
 11470 A ROOAS7.K=SWITCH(MAX(0,BPAVC.K-RAPEU.K),0,ROOSAS-7)
 11480 A ROOAS.K=(ROOAS5.K+ROOAS6.K+ROOAS7.K)*8.76/ROOCRFB.K
 11490 NOTE
 11500 A ROOMF.K=SWITCH(ROOFCMS,0,ROOSAS-1)+SWITCH(ROOFCMS,0,ROOSAS-2)
 11510 X +SWITCH(ROOFCMS,0,ROOSAS-3)+SWITCH(ROOFCMS,0,ROOSAS-4)
 11520 NOTE
 11530 A ROOSC2.K=SWITCH(ROOFC,1E6,ROOSAS-2)
 11540 A ROOSC3.K=SWITCH(BPAVC.K,1E6,ROOSAS-3)
 11550 A ROOSC4.K=SWITCH(MAX(0,BPAVC.K-RAPEU.K),1E6,ROOSAS-4)
 11560 A ROOSCAP.K=(MIN(ROOSC2.K,ROOSC3.K,ROOSC4.K))*8.76/ROOCRFB.K
 11570 NOTE
 11580 A ROOSSH.K=TABHL(ROOCTST,ROOUSH.K,0,8000,500)
 11590 A ROOVAH.K=(ROOUSH.K-ROOCCHI)*(ROOSSH.K-ROOCSHI)/2
 11600 A ROODLSH.K=TABHL(ROOCTST,ROOICNH.K+ROOUSH.K+ROODELC,0,8000,500)
 11610 X -TABHL(ROOCTST,ROOICNH.K+ROOUSH.K,0,8000,500)
 11620 A ROOSLH.K=ROODELC/(MAX(.01,ROODLSH.K))
 11630 A ROOVCH.K=SQRT(MAX(2*ROOSLH.K*ROOVAH.K,0))
 11640 A ROOSTH.K=MAX(ROOICNH.K,ROOPSC.K,SWITCH(ROOUSH.K,0,ROOSTS-1))+

11650 X SWITCH (ROOUSH.K+ROOICNH.K, 0, ROOSTS-2)+SWITCH (ROOUSH.K+ROOICNH.K
11660 X +ROOVCH.K, 0, ROOSTS-3))
11670 NOTE
11680 A ROOSSM.K=TABHL (ROOCST, ROOUSH.K, 0, 8000, 500)
11690 A ROOVAM.K= (ROOUSH.K-ROOCCMI) * (ROOSSM.K-ROOCSMI) /2
11700 A ROODLSM.K=TABHL (ROOCST, ROOICNM.K+ROOUSH.K+ROODELC, 0, 8000, 500)
11710 X -TABHL (ROOCST, ROOICNM.K+ROOUSH.K, 0, 8000, 500)
11720 A ROOSLM.K=ROODELC/ (MAX (.01, ROODLSM.K))
11730 A ROOVCM.K=SQRT (MAX (2*ROOSLM.K*ROOVAM.K, 0))
11740 A ROOSTM.K=MAX (ROOICNM.K, ROOPSC.K, SWITCH (ROOUSH.K, 0, ROOSTS-1)+
11750 X SWITCH (ROOUSH.K+ROOICNM.K, 0, ROOSTS-2)+SWITCH (ROOUSH.K+ROOICNM.K
11760 X +ROOVCM.K, 0, ROOSTS-3))
11770 NOTE
11780 A ROOSSL.K=TABHL (ROOCST, ROOUSH.K, 0, 8000, 500)
11790 A ROOVAL.K= (ROOUSH.K-ROOCCLI) * (ROOSSL.K-ROOCSLI) /2
11800 A ROODLSL.K=TABHL (ROOCST, ROOICNL.K+ROOUSH.K+ROODELC, 0, 8000, 500)
11810 X -TABHL (ROOCST, ROOICNL.K+ROOUSH.K, 0, 8000, 500)
11820 A ROOSLL.K=ROODELC/ (MAX (.01, ROODLSL.K))
11830 A ROOVCL.K=SQRT (MAX (2*ROOSLL.K*ROOVAL.K, 0))
11840 A ROOSTL.K=MAX (ROOICNL.K, ROOPSC.K, SWITCH (ROOUSH.K, 0, ROOSTS-1)+
11850 X SWITCH (ROOUSH.K+ROOICNL.K, 0, ROOSTS-2)+SWITCH (ROOUSH.K+ROOICNL.K
11860 X +ROOVCL.K, 0, ROOSTS-3))
11870 NOTE
11880 A ROOUCH1.K=SWITCH (MIN (ROOMSNL.K, ROOSCAP.K, ROOSRFH.K*ROOSPS.K*
11890 X ROOMF.K*ROOTCCH.K/ (1+ROOSRFH.K*ROOMF.K)), 0, ROOCDS-1)
11900 A ROOUCH2.K=SWITCH (MIN (ROOMSNL.K, ROOSCAP.K, CLIP (ROOAS.K, 0, ROOTCCH.K,
11910 X ROOPSLH.K)), 0, ROOCDS-2)
11920 A ROOUCH3.K=SWITCH (MIN (ROOMSNL.K, ROOSCAP.K, CLIP (ROOTCCH.K, 0, ROOTCCH.K,
11930 X ROOPSLH.K)), 0, ROOCDS-3)
11940 A ROOUCH4.K=SWITCH (MIN (ROOMSNL.K, ROOSCAP.K, CLIP (MIN (ROOTCCH.K, ROOAS.K) ,
11950 X 0, ROOTCCH.K, ROOPSLH.K)), 0, ROOCDS-4)
11960 A ROOUCH5.K=SWITCH (MIN (ROOMSNL.K, ROOSCAP.K, CLIP (ROOTCCH.K-ROOPSLH.K,
11970 X 0, ROOTCCH.K, ROOPSLH.K)), 0, ROOCDS-5)
11980 A ROOUCH.K=ROOSPS.K* (ROOUCH1.K+ROOUCH2.K+ROOUCH3.K+ROOUCH4.K+ROOUCH5.K)
11990 NOTE
12000 A ROOUCM1.K=SWITCH (MIN (ROOMSNL.K, ROOSCAP.K, ROOSRFM.K*ROOSPS.K*
12010 X ROOMF.K*ROOTCCM.K/ (1+ROOSRFM.K*ROOMF.K)), 0, ROOCDS-1)
12020 A ROOUCM2.K=SWITCH (MIN (ROOMSNL.K, ROOSCAP.K, CLIP (ROOAS.K, 0, ROOTCCM.K,
12030 X ROOPSLM.K)), 0, ROOCDS-2)
12040 A ROOUCM3.K=SWITCH (MIN (ROOMSNL.K, ROOSCAP.K, CLIP (ROOTCCM.K, 0, ROOTCCM.K,
12050 X ROOPSLM.K)), 0, ROOCDS-3)
12060 A ROOUCM4.K=SWITCH (MIN (ROOMSNL.K, ROOSCAP.K, CLIP (MIN (ROOTCCM.K, ROOAS.K) ,
12070 X 0, ROOTCCM.K, ROOPSLM.K)), 0, ROOCDS-4)
12080 A ROOUCM5.K=SWITCH (MIN (ROOMSNL.K, ROOSCAP.K, CLIP (ROOTCCM.K-ROOPSLM.K,
12090 X 0, ROOTCCM.K, ROOPSLM.K)), 0, ROOCDS-5)
12100 A ROOUCM.K=ROOSPS.K* (ROOUCM1.K+ROOUCM2.K+ROOUCM3.K+ROOUCM4.K+ROOUCM5.K)
12110 NOTE
12120 A ROOUC11.K=SWITCH (MIN (ROOMSNL.K, ROOSCAP.K, ROOSRFL.K*ROOSPS.K*
12130 X ROOMF.K*ROOTCCL.K/ (1+ROOSRFL.K*ROOMF.K)), 0, ROOCDS-1)
12140 A ROOUC12.K=SWITCH (MIN (ROOMSNL.K, ROOSCAP.K, CLIP (ROOAS.K, 0, ROOTCCL.K,
12150 X ROOPSL1.K)), 0, ROOCDS-2)
12160 A ROOUC13.K=SWITCH (MIN (ROOMSNL.K, ROOSCAP.K, CLIP (ROOTCCL.K, 0, ROOTCCL.K,
12170 X ROOPSL1.K)), 0, ROOCDS-3)
12180 A ROOUC14.K=SWITCH (MIN (ROOMSNL.K, ROOSCAP.K, CLIP (MIN (ROOTCCL.K, ROOAS.K) ,
12190 X 0, ROOTCCL.K, ROOPSL1.K)), 0, ROOCDS-4)
12200 A ROOUC15.K=SWITCH (MIN (ROOMSNL.K, ROOSCAP.K, CLIP (ROOTCCL.K-ROOPSL1.K,
12210 X 0, ROOTCCL.K, ROOPSL1.K)), 0, ROOCDS-5)
12220 A ROOUC1.K=ROOSPS.K* (ROOUC11.K+ROOUC12.K+ROOUC13.K+ROOUC14.K+ROOUC15.K)
12230 NOTE
12240 A ROOPSH1.K=SWITCH (ROOPPSL*8.76/TOOCRFB.K, 0, ROOPKGS-1)
12250 A ROOPSH2.K=SWITCH (ROOICNH.K, 0, ROOPKGS-2)

12260 A ROOPSLH.K=ROOPSH1.K+ROOPSH2.K
 12270 NOTE
 12280 A ROOPSM1.K=SWITCH(ROOFPSL*8.76/ROOCRFB.K,0,ROOPKGS-1)
 12290 A ROOPSM2.K=SWITCH(ROOICNM.K,0,ROOPKGS-2)
 12300 A ROOPSLM.K=ROOPSM1.K+ROOPSM2.K
 12310 NOTE
 12320 A ROOPSL1.K=SWITCH(ROOFPSL*8.76/ROOCRFB.K,0,ROOPKGS-1)
 12330 A ROOPSL2.K=SWITCH(ROOICNL.K,0,ROOPKGS-2)
 12340 A ROOPSLL.K=ROOPSL1.K+ROOPSL2.K
 12350 NOTE
 12360 C ROOSPSY=3000
 12370 C ROOSPCY=3000
 12380 A ROOSPS.K=CLIP(1,0,TIME.K,ROOSPSY)*CLIP(1,0,ROOSPCY,TIME.K)
 12390 C ROORSSY=3000
 12400 C ROORSCY=3000
 12410 A ROORSS.K=CLIP(1,0,TIME.K,ROORSSY)*CLIP(1,0,ROORSCY,TIME.K)
 12420 C ROORMSY=3000
 12430 C ROORMCY=3000
 12440 A ROORMS.K=CLIP(1,0,TIME.K,ROORMSY)*CLIP(1,0,ROORMCY,TIME.K)
 12450 NOTE
 12460 NOTE PERFORMANCE STANDARDS POLICY SECTION
 12470 NOTE
 12480 C ROOPPIY=1988
 12490 C ROOPPI2Y=1988
 12500 C ROOPPI3Y=1988
 12510 A ROOPPI1S.K=CLIP(1,0,TIME.K,ROOPPIY)
 12520 A ROOPPI2S.K=ROOPPI1S.K*CLIP(1,0,TIME.K,ROOPPI2Y)
 12530 A ROOPPI3S.K=ROOPPI2S.K*CLIP(1,0,TIME.K,ROOPPI3Y)
 12540 A ROOPPER.K=ROOPPI1S.K+ROOPPI2S.K+ROOPPI3S.K
 12550 NOTE
 12560 C ROOPCFD=0
 12570 C ROOPCF1=.3
 12580 C ROOPCF2=.8
 12590 C ROOPCF3=1
 12600 A ROOPCF.K=SWITCH(ROOPCFD,0,ROOPPER.K)+SWITCH(ROOPCF1,0,ROOPPER.K-1)
 12610 X +SWITCH(ROOPCF2,0,ROOPPER.K-2)+SWITCH(ROOPCF3,0,ROOPPER.K-3)
 12620 NOTE
 12630 A ROOPS.K=TABHL(ROOPST,TIME.K-ROOASDT,1988,1993,5)
 12640 T ROOPST=.74/.699
 12650 C ROOASDT=0
 12660 A ROOPSC.K=TABHL(ROOCT,(ROOBU-ROOPS.K)*ROOPCF.K,0,.35,.05)
 12670 NOTE
 12680 NOTE INFORMATION PROGRAMS POLICY SECTION
 12690 NOTE
 12700 C ROOIMP=.5
 12710 C ROOIPSY=3000
 12720 C ROOIPCY=3000
 12730 A ROOIPS.K=CLIP(1,0,TIME.K,ROOIPSY)*CLIP(1,0,ROOIPCY,TIME.K)
 12740 C ROOIUPR=.35
 12750 C ROOIPD=2
 12760 C ROOICPP=200
 12770 A ROOIPP.K=ROHO.K*ROOPR.K*ROOIUPR*ROOIPS.K
 12780 A ROOIAP.K=MIN(DLINF1(ROOIPP.K,ROOIPD),ROOIPP.K)
 12790 N ROOIPP=0
 12800 A ROOIAPR.K=ROOIAP.K/(ROHO.K*ROOPR.K)
 12810 A ROOIUC.K=(ROOIPP.K-ROOIAP.K)*ROOICPP*(1+ROOAC)/ROOIPD
 12820 NOTE
 12830 A ROOIPHR.K=RIPHDRB.K*ROOIMP
 12840 A ROOIPMR.K=RIPMDRB.K*ROOIMP
 12850 A ROOIPLR.K=RIPLDRB.K*ROOIMP
 12860 NOTE

12870 A $ROOIWHR.K = ((1 - ROOIAPR.K) * RIPHDRB.K) + (ROOIAPR.K * ROOIPHR.K)$
12880 A $ROOIWMR.K = ((1 - ROOIAPR.K) * RIPMDRB.K) + (ROOIAPR.K * ROOIPMR.K)$
12890 A $ROOIWLR.K = ((1 - ROOIAPR.K) * RIPLDRB.K) + (ROOIAPR.K * ROOIPLR.K)$
12900 NOTE
12910 A $ROOIHDB.K = CLIP(RIPHDRB.K, ROOIWHR.K, ROOIPSY, TIME.K)$
12920 A $ROOIMDB.K = CLIP(RIPMDRB.K, ROOIWMR.K, ROOIPSY, TIME.K)$
12930 A $ROOILDB.K = CLIP(RIPLDRB.K, ROOIWLR.K, ROOIPSY, TIME.K)$
12940 NOTE
12950 NOTE FINANCIAL INCENTIVES POLICY SECTION
12960 NOTE
12970 C $ROOFULR=.11$
12980 C $ROOFISY=3000$
12990 C $ROOFICY=3000$
13000 C $ROOFAC=0$
13010 C $ROOFUCF=0$
13020 A $ROOFIS.K = CLIP(0, 1, ROOFISY, TIME.K) * CLIP(1, 0, ROOFICY, TIME.K)$
13030 A $ROOFIM.K = TABHL(ROOFIMT, ROOFULR, 0, .11, .01)$
13040 T $ROOFIMT=-.12/- .1/- .05/.1/.15/.2/.3/.4/.5/.65/.8/1.0$
13050 A $ROOFI.K = 1 + (ROOFIS.K * (ROOFIM.K - 1))$
13060 A $ROOFDR.K = RDRL * ROOFI.K$
13070 C $ROOFUPR=1$
13080 C $ROOFPD=2$
13090 A $ROOFPP.K = ROHO.K * ROOPR.K * ROOFUPR * ROOFIS.K$
13100 A $ROOFAP.K = MIN(DLINFL(ROOFPP.K, ROOFPD), ROOFPP.K)$
13110 N $ROOFPP=0$
13120 A $ROOFAPR.K = ROOFAP.K / (ROHO.K * ROOPR.K)$
13130 A $ROOFWDR.K = ((1 - ROOFAPR.K) * RDRL) + (ROOFAPR.K * ROOFDR.K)$
13140 A $ROOFWCF.K = ROOFUCF * ROOFAPR.K$
13150 A $ROOFUEH.K = ROOPENH.K * ROOFWCF.K$
13160 A $ROOFUEM.K = ROOPENM.K * ROOFWCF.K$
13170 A $ROOFUEL.K = ROOPENL.K * ROOFWCF.K$
13180 A $ROOFUE.K = (ROOFUEH.K + ROOFUEM.K + ROOFUEL.K) * (1 + ROOFAC)$
13190 NOTE
13200 NOTE MAINLINE STRUCTURE
13210 NOTE
13220 C $ROOFLI=.29$
13230 C $ROOFLM=.42$
13240 C $ROOFLH=.29$
13250 C $ROONCBH=.0110$
13260 C $ROONCBM=.0179$
13270 C $ROONCBL=.0133$
13280 NOTE
13290 NOTE
13300 NOTE
13310 A $ROOBWA.K = (1 - RIPAPR.K) + (RIPAPR.K * ROOBMA)$
13320 NOTE
13330 A $ROODNO.K = ROHO.K * ROOPR.K * ROOBU$
13340 NOTE
13350 A $ROODNOH.K = ROOFLH * ROODNO.K * ROOBWA.K$
13360 A $ROODNOM.K = ROOFLM * ROODNO.K * ROOBWA.K$
13370 A $ROODNOL.K = ROOFLI * ROODNO.K * ROOBWA.K$
13380 NOTE
13390 A $ROOHD.K = ROOIHDB.K + ROOFWDR.K$
13400 A $ROOMD.K = ROOIMDB.K + ROOFWDR.K$
13410 A $ROOLD.K = ROOILDB.K + ROOFWDR.K$
13420 NOTE
13430 A $ROOCRFB.K = ROOHD.K / (1 - 1 / (1 + ROOHD.K) ^ ROOSL)$
13440 A $ROOCRFM.K = ROOMD.K / (1 - 1 / (1 + ROOMD.K) ^ ROOSL)$
13450 A $ROOCRFL.K = ROOLD.K / (1 - 1 / (1 + ROOLD.K) ^ ROOSL)$
13460 A $ROOCRFB.K = BPADR / (1 - 1 / (1 + BPADR) ^ ROOSL)$
13470 NOTE

13480 A $ROOICNH.K = (RAPEU.K * 8.76 / ROOCRFB.K) / (1 - RTAXS)$
13490 A $ROOICNM.K = (RAPEU.K * 8.76 / ROOCRFB.K) / (1 - RTAXS)$
13500 A $ROOICNL.K = (RAPEU.K * 8.76 / ROOCRFB.K) / (1 - RTAXS)$
13510 NOTE
13520 A $ROOISNH.K = TABHL(ROOCST, ROOICNH.K, 0, 8000, 500)$
13530 A $ROOISNM.K = TABHL(ROOCST, ROOICNM.K, 0, 8000, 500)$
13540 A $ROOISNL.K = TABHL(ROOCST, ROOICNL.K, 0, 8000, 500)$
13550 NOTE
13560 A $ROOSRFH.K = 1 - ROORSS.K * TABHL(ROORFT, ROOACSH.K / ROOISNH.K, .6, 1.4, .1)$
13570 A $ROOSRFM.K = 1 - ROORSS.K * TABHL(ROORFT, ROOACSM.K / ROOISNM.K, .6, 1.4, .1)$
13580 A $ROOSRFL.K = 1 - ROORSS.K * TABHL(ROORFT, ROOACSL.K / ROOISNL.K, .6, 1.4, .1)$
13590 T $ROORFT = 1 / .9 / .8 / .65 / .5 / .35 / .2 / .1 / 0$
13600 NOTE
13610 A $ROOMSNL.K = MAX(0, (RMCE.K - RAPEU.K) * 8.76 / ROOCRFB.K)$
13620 NOTE
13630 A $ROOUSH.K = ROOSRFH.K * ROOSPS.K * MIN(ROOMSNL.K, ROOSCAP.K,$
13640 X $ROOMF.K * ROOICNH.K + ROOAS.K)$
13650 A $ROOUSM.K = ROOSRFM.K * ROOSPS.K * MIN(ROOMSNL.K, ROOSCAP.K,$
13660 X $ROOMF.K * ROOICNM.K + ROOAS.K)$
13670 A $ROOUSL.K = ROOSRFL.K * ROOSPS.K * MIN(ROOMSNL.K, ROOSCAP.K,$
13680 X $ROOMF.K * ROOICNL.K + ROOAS.K)$
13690 NOTE
13700 A $ROOICCH.K = ROOSTH.K$
13710 A $ROOICCM.K = ROOSTM.K$
13720 A $ROOICCL.K = ROOSTL.K$
13730 NOTE
13740 A $ROOICSH.K = TABHL(ROOCST, ROOICCH.K, 0, 8000, 500)$
13750 A $ROOICSM.K = TABHL(ROOCST, ROOICCM.K, 0, 8000, 500)$
13760 A $ROOICSL.K = TABHL(ROOCST, ROOICCL.K, 0, 8000, 500)$
13770 NOTE
13780 A $ROOINCH.K = ROHO.K * ROOPR.K * ROOFLH * ROOICSH.K$
13790 A $ROOINCM.K = ROHO.K * ROOPR.K * ROOFLM * ROOICSM.K$
13800 A $ROOINCL.K = ROHO.K * ROOPR.K * ROOFL * ROOICSL.K$
13810 NOTE
13820 A $ROONINH.K = MAX(0, (ROOINCH.K - ROONCH.K) / ROOSPPD)$
13830 A $ROONINM.K = MAX(0, (ROOINCM.K - ROONCM.K) / ROOSPPD)$
13840 A $ROONINL.K = MAX(0, (ROOINCL.K - ROONCL.K) / ROOSPPD)$
13850 NOTE
13860 A $ROONIRH.K = ROONRRH.K * CLIP(0, 1, ROONCH.K, ROOINCH.K)$
13870 A $ROONIRM.K = ROONRRM.K * CLIP(0, 1, ROONCM.K, ROOINCM.K)$
13880 A $ROONIRL.K = ROONRRL.K * CLIP(0, 1, ROONCL.K, ROOINCL.K)$
13890 NOTE
13900 R $ROONCIH.KL = ROONINH.K + ROONIRH.K$
13910 R $ROONCIM.KL = ROONINM.K + ROONIRM.K$
13920 R $ROONCIL.KL = ROONINL.K + ROONIRL.K$
13930 NOTE
13940 NOTE
13950 R $ROONRRH.KL = VINTG(ROONCIH.K, ROOSL, RHALT.K, ROONCH.K, ROONRSH.K,$
13960 X $ROONCBH)$
13970 R $ROONRRM.KL = VINTG(ROONCIM.K, ROOSL, RHALT.K, ROONCM.K, ROONRSM.K,$
13980 X $ROONCBM)$
13990 R $ROONRRL.KL = VINTG(ROONCIL.K, ROOSL, RHALT.K, ROONCL.K, ROONRSL.K,$
14000 X $ROONCBL)$
14010 NOTE
14020 A $ROODH.K = ROODNOH.K - ROONCH.K$
14030 A $ROODM.K = ROODNOM.K - ROONCM.K$
14040 A $ROODL.K = ROODNOL.K - ROONCL.K$
14050 NOTE
14060 A $ROOACSH.K = (ROONCH.K) / (ROHO.K * ROOPR.K * ROOFLH)$
14070 A $ROOACSM.K = (ROONCM.K) / (ROHO.K * ROOPR.K * ROOFLM)$
14080 A $ROOACSL.K = (ROONCL.K) / (ROHO.K * ROOPR.K * ROOFL)$

14090 NOTE
14100 A $ROOTCCH.K = TABHL(ROOCCT, ROOACSH.K, 0, .35, .05)$
14110 A $ROOTCCM.K = TABHL(ROOCCT, ROOACSM.K, 0, .35, .05)$
14120 A $ROOTCCL.K = TABHL(ROOCCT, ROOACSL.K, 0, .35, .05)$
14130 NOTE
14140 A $ROOPCH.K = MAX(0, (ROOTCCH.K - ROOUCH.K) * (1 - RTAXS))$
14150 A $ROOPCM.K = MAX(0, (ROOTCCM.K - ROOUCM.K) * (1 - RTAXS))$
14160 A $ROOPCL.K = MAX(0, (ROOTCCL.K - ROOUCL.K) * (1 - RTAXS))$
14170 NOTE
14180 A $ROOTXH.K = (ROOTCCH.K - ROOUCH.K) * RTAXS$
14190 A $ROOTXM.K = (ROOTCCM.K - ROOUCM.K) * RTAXS$
14200 A $ROOTXL.K = (ROOTCCL.K - ROOUCL.K) * RTAXS$
14210 NOTE
14220 A $ROOUEH.K = ROOUCH.K * ROONINH.K$
14230 A $ROOUEM.K = ROOUCM.K * ROONINM.K$
14240 A $ROOUEL.K = ROOUCL.K * ROONINL.K$
14250 NOTE
14260 A $ROOPENH.K = ROOPCH.K * ROONINH.K * (1 - ROOFWCF.K)$
14270 A $ROOPENM.K = ROOPCM.K * ROONINM.K * (1 - ROOFWCF.K)$
14280 A $ROOPENL.K = ROOPCL.K * ROONINL.K * (1 - ROOFWCF.K)$
14290 NOTE
14300 A $ROOTENH.K = ROOTXH.K * ROONINH.K$
14310 A $ROOTENM.K = ROOTXM.K * ROONINM.K$
14320 A $ROOTENL.K = ROOTXL.K * ROONINL.K$
14330 NOTE
14340 A $ROODUCH.K = DLINF3(ROOUCH.K, ROOSL)$
14350 A $ROODUCM.K = DLINF3(ROOUCM.K, ROOSL)$
14360 A $ROODUCL.K = DLINF3(ROOUCL.K, ROOSL)$
14370 NOTE
14380 A $ROODPCH.K = DLINF3(ROOPCH.K, ROOSL)$
14390 A $ROODPCM.K = DLINF3(ROOPCM.K, ROOSL)$
14400 A $ROODPCL.K = DLINF3(ROOPCL.K, ROOSL)$
14410 NOTE
14420 A $ROODTXH.K = DLINF3(ROOTXH.K, ROOSL)$
14430 A $ROODTXM.K = DLINF3(ROOTXM.K, ROOSL)$
14440 A $ROODTXL.K = DLINF3(ROOTXL.K, ROOSL)$
14450 NOTE
14460 A $ROOUEH.K = ROONIRH.K * ROODUCH.K * ROORMS.K$
14470 A $ROOUEM.K = ROONIRM.K * ROODUCM.K * ROORMS.K$
14480 A $ROOUEL.K = ROONIRL.K * ROODUCL.K * ROORMS.K$
14490 NOTE
14500 A $ROOPERH.K = ROONIRH.K * ROODPCH.K + ((1 - ROORMS.K) * (1 - RTAXS))$
14510 X $* ROONIRH.K * ROODUCH.K)$
14520 A $ROOPERM.K = ROONIRM.K * ROODPCM.K + ((1 - ROORMS.K) * (1 - RTAXS))$
14530 X $* ROONIRM.K * ROODUCM.K)$
14540 A $ROOPERL.K = ROONIRL.K * ROODPCL.K + ((1 - ROORMS.K) * (1 - RTAXS))$
14550 X $* ROONIRL.K * ROODUCL.K)$
14560 NOTE
14570 A $ROOTERH.K = ROONIRH.K * ROODTXH.K + ((1 - ROORMS.K) * RTAXS)$
14580 X $* ROONIRH.K * ROODUCH.K)$
14590 A $ROOTERM.K = ROONIRM.K * ROODTXM.K + ((1 - ROORMS.K) * RTAXS)$
14600 X $* ROONIRM.K * ROODUCM.K)$
14610 A $ROOTERL.K = ROONIRL.K * ROODTXL.K + ((1 - ROORMS.K) * RTAXS)$
14620 X $* ROONIRL.K * ROODUCL.K)$
14630 NOTE
14640 A $ROOUEH.K = (ROOUEH.K + ROOUEH.K) * (1 + ROOAC)$
14650 A $ROOUEM.K = (ROOUEM.K + ROOUEM.K) * (1 + ROOAC)$
14660 A $ROOUEL.K = (ROOUEL.K + ROOUEL.K) * (1 + ROOAC)$
14670 A $ROOPEN.K = ROOPENH.K + ROOPENM.K + ROOPENL.K$
14680 A $ROOTEN.K = ROOTENH.K + ROOTENM.K + ROOTENL.K$
14690 A $ROOPER.K = ROOPERH.K + ROOPERM.K + ROOPERL.K$

14700 A ROOTER.K=ROOTERH.K+ROOTERM.K+ROOTERL.K
14710 NOTE
14720 A ROOUE.K=ROOUEH.K+ROOUEM.K+ROOUEL.K
14730 A ROOPE.K=ROOPEN.K+ROOPER.K
14740 A ROOTE.K=ROOTEN.K+ROOTER.K
14750 NOTE
14760 L ROOAUE.K=ROOAUE.J+DT*ROOAUEI.JK
14770 N ROOAUE=0
14780 R ROOAUEI.KL=ROOUE.K+ROOFUE.K+ROOIUC.K
14790 NOTE
14800 L ROOTPE.K=ROOTPE.J+DT*ROOTPEI.JK
14810 N ROOTPE=0
14820 R ROOTPEI.KL=ROOPE.K
14830 NOTE
14840 A ROONC.K=ROONCH.K+ROONCM.K+ROONCL.K
14850 NOTE
14860 A ROOICEO.K=RMCE.K*8.76/ROOCRFB.K
14870 A ROOICSO.K=TABHL(ROOCST,ROOICEO.K,0,8000,500)
14880 NOTE
14890 NOTE BEHAVIORAL FACTORS
14900 NOTE
14910 C ROONERH=.032
14920 C ROONERM=.032
14930 C ROONERL=.032
14940 C ROOBSS=0
14950 C ROOHIGR=.019
14960 C ROOHIHI=6700
14970 C ROOHIMI=21000
14980 C ROOHILI=47000
14990 NOTE
15000 A ROOAENH.K=RAPEU.K*8.76*((ROOBU*ROOEW.A.K)-ROOACSH.K)
15010 A ROOAENM.K=RAPEU.K*8.76*((ROOBU*ROOEW.A.K)-ROOACSM.K)
15020 A ROOAENL.K=RAPEU.K*8.76*((ROOBU*ROOEW.A.K)-ROOACSL.K)
15030 NOTE
15040 A ROOHIH.K=ROOHIHI*EXP(ROOHIGR*DEMEGM*(TIME.K-1984))
15050 A ROOHIM.K=ROOHIMI*EXP(ROOHIGR*DEMEGM*(TIME.K-1984))
15060 A ROOHIL.K=ROOHILI*EXP(ROOHIGR*DEMEGM*(TIME.K-1984))
15070 NOTE
15080 A ROOEIRH.K=ROOAENH.K/ROOHIH.K
15090 A ROOEIRM.K=ROOAENM.K/ROOHIM.K
15100 A ROOEIRL.K=ROOAENL.K/ROOHIL.K
15110 NOTE
15120 A ROODMBH.K=SWITCH(1,TABHL(ROODMBT,ROOEIRH.K/ROONERH,0,2,.5),ROOBSS)
15130 A ROODMBM.K=SWITCH(1,TABHL(ROODMBT,ROOEIRM.K/ROONERM,0,2,.5),ROOBSS)
15140 A ROODMBL.K=SWITCH(1,TABHL(ROODMBT,ROOEIRL.K/ROONERL,0,2,.5),ROOBSS)
15150 T ROODMBT=1/1/1/1
15160 NOTE
15170 A ROONDH.K=ROODH.K*ROODMBH.K
15180 A ROONDM.K=ROODM.K*ROODMBM.K
15190 A ROONDL.K=ROODL.K*ROODMBL.K
15200 NOTE
15210 A ROODBB.K=ROODL.K+ROODM.K+ROODH.K
15220 A ROOD.K=ROONDL.K+ROONDM.K+ROONDH.K
15230 A ROOCONS.K=ROODNO.K-ROOD.K
15240 A ROORNC.K=(ROOAUE.K*ROOCRFB.K)/(87.6*ROOCONS.K)
15250 NOTE
15260 NOTE ENERGY SERVICE COST
15270 NOTE
15280 C ROOBEC=0
15290 A ROORCRF.K=RDRL/(1-1/(1+RDRL)^ROSSL)
15300 A ROOAACS.K=ROOACSH.K*ROOFLH+ROOACSM.K*ROOFLM+ROOACSL.K*ROOFLI

15310 A $ROOESC1.K = (ROOTPE.K + ROOPEC) * ROORCF.K$
15320 A $ROOESC2.K = (ROOBU - ROOAACS.K) * RAPEU.K * 8.76$
15330 A $ROOESC.K = ROOESC1.K + ROOESC2.K$
15340 NOTE
15350 NOTE RESIDENTIAL SECTOR - NEW HOMES
15360 NOTE SPACE HEATING
15370 NOTE
15380 T $RNSCCT = 0/1108/1471/2170/2691/3274/3739/6152/24259$
15390 T $RNSCST = 0/.025/.248/.454/.607/.622/.691/.735/.740/.752/$
15400 X $.753/.755/.769/.769/.770/.770/.771/.772/.774/.776/.778$
15410 T $RNSTCCT = 0/106/243/430/674/975/1329/1827/2863$
15420 C $RNSBU = 1.015$
15430 C $RNSAC = .11$
15440 C $RNSSL = 30$
15450 A $RNSPR.K = TABHL(RNSPRT, TIME.K, 1984, 2004, 5)$
15460 T $RNSPRT = .666/.641/.672/.705/.708$
15470 C $RNSBMA = 1.0$
15480 C $RNSIRM = 1.156$
15490 NOTE
15500 NOTE SUBSIDY PROGRAMS POLICY SECTION
15510 NOTE
15520 C $RNSSAS = 0$
15530 C $RNSSTS = 2$
15540 C $RNSCDS = 0$
15550 C $RNSPKGS = 0$
15560 C $RNSSFS = 0$
15570 C $RNSFCMS = 0$
15580 C $RNSFC = 1E6$
15590 C $RNSCCI = 0$
15600 C $RNSCSI = 0$
15610 C $RNSDELC = 100$
15620 C $RNSFPSL = 0$
15630 NOTE
15640 A $RNSAS5.K = SWITCH(RNSSFS, 0, RNSSAS-5)$
15650 A $RNSAS6.K = SWITCH(BPAAVC.K, 0, RNSSAS-6)$
15660 A $RNSAS7.K = SWITCH(MAX(0, BPAAVC.K - RAPEU.K), 0, RNSSAS-7)$
15670 A $RNSAS.K = (RNSAS5.K + RNSAS6.K + RNSAS7.K) * 8.76 / RNSCRFB.K$
15680 NOTE
15690 A $RNSMF.K = SWITCH(RNSFCMS, 0, RNSSAS-1) + SWITCH(RNSFCMS, 0, RNSSAS-2)$
15700 X $+ SWITCH(RNSFCMS, 0, RNSSAS-3) + SWITCH(RNSFCMS, 0, RNSSAS-4)$
15710 NOTE
15720 A $RNSSC2.K = SWITCH(RNSFC, 1E6, RNSSAS-2)$
15730 A $RNSSC3.K = SWITCH(BPAAVC.K, 1E6, RNSSAS-3)$
15740 A $RNSSC4.K = SWITCH(MAX(0, BPAAVC.K - RAPEU.K), 1E6, RNSSAS-4)$
15750 A $RNSSCAP.K = (MIN(RNSSC2.K, RNSSC3.K, RNSSC4.K)) * 8.76 / RNSCRFB.K$
15760 NOTE
15770 A $RNSSS.K = TABHL(RNSCST, RNSUS.K, 0, 20000, 1000)$
15780 A $RNSVA.K = (RNSUS.K - RNSCCI) * (RNSSS.K - RNSCSI) / 2$
15790 A $RNSDLS.K = TABHL(RNSCST, RNSICN.K + RNSUS.K + RNSDELC, 0, 20000, 1000)$
15800 X $- TABHL(RNSCST, RNSICN.K + RNSUS.K, 0, 20000, 1000)$
15810 A $RNSSLP.K = RNSDELC / (MAX(.01, RNSDLS.K))$
15820 A $RNSVC.K = SQRT(MAX(2 * RNSSLP.K * RNSVA.K, 0))$
15830 A $RNSST.K = MAX(RNSICN.K, RNSPSC.K, SWITCH(RNSUS.K, 0, RNSSTS-1) +$
15840 X $SWITCH(RNSUS.K + RNSICN.K, 0, RNSSTS-2) + SWITCH(RNSUS.K$
15850 X $+ RNSVC.K, 0, RNSSTS-3))$
15860 NOTE
15870 NOTE PROPORTIONAL SUBSIDY COSTS
15880 NOTE
15890 A $RNSCSP.K = TABHL(RNSCST, (RNSFCMS / (1 + RNSFCMS)) *$
15900 X $RNSSCAP.K, 0, 20000, 1000)$
15910 A $RNSUUC1.K = (MIN(TABHL(RNSTCCT, RNSCSP.K, 0, .8, .1), TABHL($

15920 X $RNSTOCT, RNSICS.K, 0, .8, .1) * (RNSFCMS / (1 + RNSFCMS)) +$
15930 X $MAX(0, RNSICS.K - RNSCSP.K) * RNSSCAP.K$
15940 A $RNSUC1.K = SWITCH(MIN(RNSMSNL.K, RNSSCAP.K, RNSUUC1.K / RNSICS.K),$
15950 X $0, RNSCDS-1)$
15960 NOTE
15970 NOTE ADDITIVE SHARE, FLAT RATE
15980 NOTE
15990 A $RNSUUC2.K = RNSAS.K * MAX(0, RNSICS.K - TABHL(RNSCST, RNSPSC.K,$
16000 X $0, 20000, 1000))$
16010 A $RNSUC2.K = SWITCH(MIN(RNSMSNL.K, RNSSCAP.K, RNSUUC2.K / RNSICS.K),$
16020 X $0, RNSCDS-2)$
16030 NOTE
16040 NOTE ADDITIVE SHARE, TOTAL COST
16050 NOTE
16060 A $RNSUUC3.K = MAX(0, TABHL(RNSTOCT, TABHL(RNSCST, RNSAS.K, 0, 20000, 1000),$
16070 X $0, .8, .1) - TABHL(RNSTOCT, TABHL(RNSCST, RNSPSC.K, 0, 20000, 1000),$
16080 X $0, .8, .1))$
16090 A $RNSUC3.K = SWITCH(MIN(RNSMSNL.K, RNSSCAP.K, RNSUUC3.K / RNSICS.K),$
16100 X $0, RNSCDS-3)$
16110 NOTE
16120 NOTE ADDITIVE SHARE, TOTAL COST TO CAP
16130 NOTE
16140 A $RNSUC4.K = 0$
16150 NOTE
16160 NOTE ADDITIVE SHARE, COST SHARING, FIXED PARTICIPANT COST
16170 NOTE
16180 A $RNSUUC5.K = MAX(0, TABHL(RNSTOCT, TABHL(RNSCST, RNSAS.K, 0, 20000, 1000),$
16190 X $0, .8, .1) - TABHL(RNSTOCT, TABHL(RNSCST, RNSPSL.K, 0, 20000, 1000),$
16200 X $0, .8, .1)) - RNSPSL.K * MAX(0, RNSICS.K - TABHL(RNSCST, RNSPSL.K,$
16210 X $0, 20000, 1000))$
16220 A $RNSUC5.K = SWITCH(MIN(RNSMSNL.K, RNSSCAP.K, RNSUUC5.K / RNSICS.K),$
16230 X $0, RNSCDS-5)$
16240 NOTE
16250 NOTE A $RNSUC.K = RNSSPS.K * (RNSUC1.K + RNSUC2.K + RNSUC3.K + RNSUC4.K + RNSUC5.K)$
16260 A $RNSUC.K = 271.51 * RNSSPS.K$
16270 NOTE
16280 A $RNSPS1.K = SWITCH(RNSFPSL * 8.76 / RNSCRFB.K, 0, RNSPKGS-1)$
16290 A $RNSPS2.K = SWITCH(RNSICN.K, 0, RNSPKGS-2)$
16300 A $RNSPSL.K = RNSPS1.K + RNSPS2.K$
16310 NOTE
16320 C $RNSSPSY = 1988$
16330 C $RNSSPCY = 3000$
16340 A $RNSSPS.K = CLIP(1, 0, TIME.K, RNSSPSY) * CLIP(1, 0, RNSSPCY, TIME.K)$
16350 C $RNSRSSY = 3000$
16360 C $RNSRSCY = 3000$
16370 A $RNSRSS.K = CLIP(1, 0, TIME.K, RNSRSSY) * CLIP(1, 0, RNSRSCY, TIME.K)$
16380 C $RNSRMSY = 3000$
16390 C $RNSRMCY = 3000$
16400 A $RNSRMS.K = CLIP(1, 0, TIME.K, RNSRMSY) * CLIP(1, 0, RNSRMCY, TIME.K)$
16410 NOTE
16420 NOTE PERFORMANCE STANDARDS POLICY SECTION
16430 NOTE
16440 C $RNSPP1Y = 1989$
16450 C $RNSPP2Y = 1989$
16460 C $RNSPP3Y = 3000$
16470 A $RNSPP1S.K = CLIP(1, 0, TIME.K, RNSPP1Y)$
16480 A $RNSPP2S.K = RNSPP1S.K * CLIP(1, 0, TIME.K, RNSPP2Y)$
16490 A $RNSPP3S.K = RNSPP2S.K * CLIP(1, 0, TIME.K, RNSPP3Y)$
16500 A $RNSPPER.K = RNSPP1S.K + RNSPP2S.K + RNSPP3S.K$
16510 NOTE
16520 C $RNSPCFD = 0$

16530 C RNSPCF1=.3
16540 C RNSPCF2=.8
16550 C RNSPCF3=1
16560 A $RNSPCF.K = SWITCH(RNSPCFD, 0, RNSPPER.K) + SWITCH(RNSPCF1, 0, RNSPPER.K-1)$
16570 X $+ SWITCH(RNSPCF2, 0, RNSPPER.K-2) + SWITCH(RNSPCF3, 0, RNSPPER.K-3)$
16580 NOTE
16590 A $RNSPS.K = TABHL(RNSPST, TIME.K - RNSASDT, 1984, 2004, 20)$
16600 T $RNSPST = .294/.294$
16610 NOTE
16620 A $RNSPSC.K = TABHL(RNSOCT, (RNSEU - RNSPS.K) * RNSPCF.K, 0, .8, .1)$
16630 C $RNSASDT = 0$
16640 NOTE
16650 NOTE INFORMATION PROGRAMS POLICY SECTION
16660 NOTE
16670 C $RNSIMP = .5$
16680 C $RNSIPSY = 3000$
16690 C $RNSIPCY = 3000$
16700 A $RNSIPS.K = CLIP(1, 0, TIME.K, RNSIPSY) * CLIP(1, 0, RNSIPCY, TIME.K)$
16710 C $RNSIUPR = .35$
16720 C $RNSIPD = 2$
16730 C $RNSICPP = 200$
16740 A $RNSIPP.K = RNHO.K * RNSPR.K * RNSIUPR * RNSIPS.K$
16750 A $RNSIAP.K = MIN(DLINFL(RNSIPP.K, RNSIPD), RNSIPP.K)$
16760 N $RNSIPP = 0$
16770 A $RNSIAPR.K = RNSIAP.K / (RNHO.K * RNSPR.K)$
16780 A $RNSIUC.K = (RNSIPP.K - RNSIAP.K) * RNSICPP * (1 + RNSAC) / RNSIPD$
16790 A $RNSIPR.K = RIPNDRB.K * RNSIMP$
16800 A $RNSIWR.K = ((1 - RNSIAPR.K) * RIPNDRB.K) + (RNSIAPR.K * RNSIPR.K)$
16810 A $RNSIDB.K = CLIP(RIPNDRB.K, RNSIWR.K, RNSIPSY, TIME.K)$
16820 NOTE
16830 NOTE FINANCIAL INCENTIVES POLICY SECTION
16840 NOTE
16850 C $RNSFULR = .11$
16860 C $RNSFISY = 3000$
16870 C $RNSFICY = 3000$
16880 C $RNSFAC = 0$
16890 C $RNSFUCF = 0$
16900 A $RNSFIS.K = CLIP(0, 1, RNSFISY, TIME.K) * CLIP(1, 0, RNSFICY, TIME.K)$
16910 A $RNSFIM.K = TABHL(RNSFIMT, RNSFULR, 0, .11, .01)$
16920 T $RNSFIMT = .12 / -.1 / -.05 / .1 / .15 / .2 / .3 / .4 / .5 / .65 / .8 / 1.0$
16930 A $RNSFI.K = 1 + (RNSFIS.K * (RNSFIM.K - 1))$
16940 A $RNSFDR.K = RDRL * RNSFI.K$
16950 C $RNSFUPR = 1$
16960 C $RNSFPD = 2$
16970 A $RNSFPP.K = RNHO.K * RNSPR.K * RNSFUPR * RNSFIS.K$
16980 A $RNSFAP.K = MIN(DLINFL(RNSFPP.K, RNSFPD), RNSFPP.K)$
16990 N $RNSFPP = 0$
17000 A $RNSFAPR.K = RNSFAP.K / (RNHO.K * RNSPR.K)$
17010 A $RNSFWDR.K = ((1 - RNSFAPR.K) * RDRL) + (RNSFAPR.K * RNSFDR.K)$
17020 A $RNSFWCF.K = RNSFUCF * RNSFAPR.K$
17030 A $RNSFUE.K = (RNSPEN.K * RNSFWCF.K) * (1 + RNSFAC)$
17040 NOTE
17050 NOTE MAINLINE STRUCTURE
17060 NOTE
17070 A $RNSEWA.K = (1 - RIPAPR.K) + (RIPAPR.K * RNSEMA)$
17080 A $RNSDNO.K = RNHO.K * RNSPR.K * RNSEU$
17090 A $RNSDR.K = RNSIDB.K + RNSFWDR.K$
17100 A $RNSCRF.K = RNSDR.K / (1 - 1 / (1 + RNSDR.K) ^ RNSSL)$
17110 A $RNSCRFB.K = BPADR / (1 - 1 / (1 + BPADR) ^ RNSSL)$
17120 A $RNSICN.K = (RAPEU.K * RNSIRM * 8.76 / RNSCRF.K) / (1 - RTAXS)$
17130 A $RNSISN.K = TABHL(RNSCST, RNSICN.K, 0, 20000, 1000)$

17140 A $RNSSRF.K = 1 - RNSRSS.K * TABHL(RNSRFT, RNSACS.K / RNSISN.K, .6, 1.4, .1)$
17150 T $RNSRFT = 1/.9/.8/.65/.5/.35/.2/.1/0$
17160 A $RNSMSNL.K = MAX(0, (RMCE.K - (RAPEU.K * RNSIRM)) * 8.76 / RNSCRFB.K)$
17170 A $RNSUS.K = RNSSRF.K * RNSSPS.K * MIN(RNSMSNL.K, RNSSCAP.K,$
17180 X $RNSMF.K * RNSICN.K + RNSAS.K)$
17190 A $RNSICC.K = RNSST.K$
17200 A $RNSICS.K = TABHL(RNSCST, RNSICC.K, 0, 20000, 1000)$
17210 A $RNSNIN.K = RNHS.K * RNSICS.K$
17220 A $RNSNIR.K = (RNSNC.K / RNSSL) * CLIP(0, 1, RNSACS.K, RNSICS.K)$
17230 R $RNSNCI.KL = RNSNIN.K + RNSNIR.K$
17240 N $RNSNCI = 0$
17250 R $RNSNRR.KL = DELAY3P(RNSNCI.JK, RNSSL, RNSNC.K)$
17260 A $RNSD.K = RNSDNO.K * RNSEWA.K - (RNSNC.K * RNSPR.K)$
17270 A $RNSACS.K = (RNSNC.K * RNSPR.K) / (RNHO.K * RNSPR.K)$
17280 A $RNSTCC.K = TABHL(RNSCCT, RNSACS.K, 0, .8, .1)$
17290 A $RNSPC.K = MAX(0, (TABHL(RNSTCCT, RNSICS.K, 0, .8, .1) / RNSICS.K -$
17300 X $RNSUC.K) * (1 - RTAXS))$
17310 A $RNSTXC.K = MAX(0, (TABHL(RNSTCCT, RNSICS.K, 0, .8, .1) / RNSICS.K -$
17320 X $RNSUC.K) * RTAXS)$
17330 A $RNSUEN.K = RNSPR.K * RNSUC.K * RNSNIN.K$
17340 A $RNSPEN.K = RNSPR.K * RNSPC.K * RNSNIN.K * (1 - RNSFWCF.K)$
17350 A $RNSTEN.K = RNSPR.K * RNSTXC.K * RNSNIN.K$
17360 A $RNSDUC.K = DLINF3(RNSUC.K, RNSSL)$
17370 A $RNSDPC.K = DLINF3(RNSPC.K, RNSSL)$
17380 A $RNSDTX.K = DLINF3(RNSTXC.K, RNSSL)$
17390 A $RNSUER.K = RNSPR.K * RNSNIR.K * RNSDUC.K * RNSRMS.K$
17400 A $RNSPER.K = (RNSNIR.K * RNSDPC.K + ((1 - RNSRMS.K) * (1 - RTAXS)$
17410 X $* RNSNIR.K * RNSDUC.K)) * RNSPR.K$
17420 A $RNSTER.K = (RNSNIR.K * RNSDTX.K + ((1 - RNSRMS.K) * RTAXS$
17430 X $* RNSNIR.K * RNSDUC.K)) * RNSPR.K$
17440 A $RNSUE.K = (RNSUEN.K + RNSUER.K) * (1 + RNSAC)$
17450 A $RNSPE.K = RNSPEN.K + RNSPER.K$
17460 A $RNSTE.K = RNSTEN.K + RNSTER.K$
17470 NOTE
17480 L $RNSAUE.K = RNSAUE.J + DT * RNSAUEI.JK$
17490 N $RNSAUE = 0$
17500 R $RNSAUEI.KL = RNSUE.K + RNSFUE.K + RNSIUC.K$
17510 NOTE
17520 A $RNSICEO.K = RMCE.K * 8.76 / RNSCRFB.K$
17530 A $RNSICSO.K = TABHL(RNSCST, RNSICEO.K, 0, 20000, 1000)$
17540 NOTE
17550 L $RNSTPE.K = RNSTPE.J + DT * RNSTPEI.JK$
17560 N $RNSTPE = 0$
17570 R $RNSTPEI.KL = RNSPE.K$
17580 NOTE
17590 NOTE
17600 NOTE BEHAVIORAL FACTORS
17610 NOTE
17620 C $RNSEIRN = .0125$
17630 C $RNSHIGR = .019$
17640 C $RNSHII = 21000$
17650 A $RNSAEN.K = RAPEU.K * RNSIRM * 8.76 * ((RNSEU * RNSEWA.K) - RNSACS.K)$
17660 A $RNSHI.K = TABHL(RNSHIT, TIME.K, 1984, 2004, 5) * DEMEGM$
17670 T $RNSHIT = 26419/28445/29541/30455/31433$
17680 A $RNSEIR.K = RNSAEN.K / RNSHI.K$
17690 A $RNSDMB.K = SWITCH(1, TABHL(RNSDMBT, RNSEIR.K / RNSEIRN, 0, 2, .1), ROSBSS)$
17700 T $RNSDMBT = 1.2/1.2/1.2/1.2/1.2/1.19/1.17/1.14/1.1/1.05/1$
17710 X $/.95/.91/.89/.87/.85/.84/.83/.82/.81/.8$
17720 A $RNSND.K = RNSD.K * RNSDMB.K$
17730 A $RNSCONS.K = RNSDNO.K - RNSND.K$
17740 A $RNSRNC.K = (RNSAUE.K * RNSCRFB.K) / (87.6 * MAX(.01, RNSCONS.K))$

17750 NOTE
 17760 NOTE ENERGY SERVICE COST
 17770 NOTE
 17780 C $RNSBEC=1300$
 17790 A $RNSRCRF.K=RDRL/(1-1/(1+RDRL)^{RNSSL})$
 17800 A $RNSESC.K=(RNSTPE.K+RNSBEC)*RNSRCRF.K+RAPEU.K*8.76*(RNSBU-RNSACS.K)$
 17810 NOTE
 17820 NOTE WATER HEATING
 17830 NOTE
 17840 T $RNWCCT=0/432/457/1680/9246/14064/21118$
 17850 T $RNWCST=0/.122/.159/.171/.172/.173/.174/.175/.176/.177/$
 17860 X $.238/.240/.242/.244/.250/.256/.263/.269/.276$
 17870 T $RNWTCT=0/20/43/98/377/857/1835$
 17880 C $RNWBU=.45$
 17890 C $RNWAC=.11$
 17900 C $RNWSL=13$
 17910 A $RNWPR.K=TABHL(RNWPRT, TIME.K, 1984, 2004, 5)$
 17920 T $RNWPRT=.924/.908/.903/.898/.878$
 17930 C $RNWBMA=1.0$
 17940 NOTE
 17950 NOTE SUBSIDY PROGRAMS POLICY SECTION
 17960 NOTE
 17970 C $RNWSAS=0$
 17980 C $RNWSTS=2$
 17990 C $RNWCDS=0$
 18000 C $RNWPKG=0$
 18010 C $RNWSFS=0$
 18020 C $RNWFMS=0$
 18030 C $RNWF=1E6$
 18040 C $RNWCCI=0$
 18050 C $RNWC=0$
 18060 C $RNWDLC=100$
 18070 C $RNWFPSL=0$
 18080 NOTE
 18090 A $RNWS5.K=SWITCH(RNWSFS, 0, RNWSAS-5)$
 18100 A $RNWS6.K=SWITCH(BPAAVC.K, 0, RNWSAS-6)$
 18110 A $RNWS7.K=SWITCH(MAX(0, BPAAVC.K-RAPEU.K), 0, RNWSAS-7)$
 18120 A $RNWS.K=(RNWS5.K+RNWS6.K+RNWS7.K)*8.76/RNWCRCFB.K$
 18130 NOTE
 18140 A $RNWMF.K=SWITCH(RNWFMS, 0, RNWSAS-1)+SWITCH(RNWFMS, 0, RNWSAS-2)$
 18150 X $+SWITCH(RNWFMS, 0, RNWSAS-3)+SWITCH(RNWFMS, 0, RNWSAS-4)$
 18160 NOTE
 18170 A $RNWSC2.K=SWITCH(RNWF, 1E6, RNWSAS-2)$
 18180 A $RNWSC3.K=SWITCH(BPAAVC.K, 1E6, RNWSAS-3)$
 18190 A $RNWSC4.K=SWITCH(MAX(0, BPAAVC.K-RAPEU.K), 1E6, RNWSAS-4)$
 18200 A $RNWSCAP.K=(MIN(RNWSC2.K, RNWSC3.K, RNWSC4.K))*8.76/RNWCRCFB.K$
 18210 NOTE
 18220 A $RNWSS.K=TABHL(RNWCST, RNWUS.K, 0, 18000, 1000)$
 18230 A $RNWVA.K=(RNWUS.K-RNWCCI)*(RNWSS.K-RNWC)/2$
 18240 A $RNWDLS.K=TABHL(RNWCST, RNWICN.K+RNWUS.K+RNWDLC, 0, 18000, 1000)$
 18250 X $-TABHL(RNWCST, RNWICN.K+RNWUS.K, 0, 18000, 1000)$
 18260 A $RNWSLP.K=RNWDLC/(MAX(.01, RNWDLS.K))$
 18270 A $RNWVC.K=SQRT(MAX(2*RNWSLP.K*RNWVA.K, 0))$
 18280 A $RNWST.K=MAX(RNWICN.K, RNWPSC.K, SWITCH(RNWUS.K, 0, RNWSTS-1)+$
 18290 X $SWITCH(RNWUS.K+RNWICN.K, 0, RNWSTS-2)+SWITCH(RNWUS.K$
 18300 X $+RNWVC.K, 0, RNWSTS-3))$
 18310 NOTE
 18320 NOTE
 18330 A $RNWCSP.K=TABHL(RNWCST, (RNWFMS/(1+RNWFMS))*$
 18340 X $RNWSCAP.K, 0, 18000, 1000)$
 18350 A $RNWUCL.K=(MIN(TABHL(RNWTCT, RNWCSP.K, 0, .3, .05), TABHL($

18360 X $RNWTCT, RNWICS.K, 0, .3, .05) * (RNWFCMS / (1 + RNWFCMS)) +$
18370 X $MAX(0, RNWICS.K - RNWCSP.K) * RNWSCAP.K$
18380 A $RNWUC1.K = SWITCH(MIN(RNWMNL.K, RNWSCAP.K, RNWUC1.K / RNWICS.K),$
18390 X $0, RNWCDS-1)$
18400 NOTE
18410 NOTE ADDITIVE SHARE, FLAT RATE
18420 NOTE
18430 A $RNWUC2.K = RNWAS.K * MAX(0, RNWICS.K - TABHL(RNWCST, RNWPSK.K,$
18440 X $0, 18000, 1000))$
18450 A $RNWUC2.K = SWITCH(MIN(RNWMNL.K, RNWSCAP.K, RNWUC2.K / RNWICS.K),$
18460 X $0, RNWCDS-2)$
18470 NOTE
18480 NOTE ADDITIVE SHARE, TOTAL COST
18490 NOTE
18500 A $RNWUC3.K = MAX(0, TABHL(RNWTCT, TABHL(RNWCST, RNWAS.K, 0, 18000, 1000),$
18510 X $0, .3, .05) - TABHL(RNWTCT, TABHL(RNWCST, RNWPSK.K, 0, 18000, 1000),$
18520 X $0, .3, .05))$
18530 A $RNWUC3.K = SWITCH(MIN(RNWMNL.K, RNWSCAP.K, RNWUC3.K / RNWICS.K),$
18540 X $0, RNWCDS-3)$
18550 NOTE
18560 NOTE ADDITIVE SHARE, TOTAL COST TO CAP
18570 NOTE
18580 A $RNWUC4.K = 0$
18590 NOTE
18600 NOTE ADDITIVE SHARE, COST SHARING, FIXED PARTICIPANT COST
18610 NOTE
18620 A $RNWUC5.K = MAX(0, TABHL(RNWTCT, TABHL(RNWCST, RNWAS.K, 0, 18000, 1000),$
18630 X $0, .3, .05) - TABHL(RNWTCT, TABHL(RNWCST, RNWPSL.K, 0, 18000, 1000),$
18640 X $0, .3, .05)) - RNWPSL.K * MAX(0, RNWICS.K - TABHL(RNWCST, RNWPSL.K,$
18650 X $0, 18000, 1000))$
18660 A $RNWUC5.K = SWITCH(MIN(RNWMNL.K, RNWSCAP.K, RNWUC5.K / RNWICS.K),$
18670 X $0, RNWCDS-5)$
18680 NOTE
18690 A $RNWUC.K = RNWSPS.K * (RNWUC1.K + RNWUC2.K + RNWUC3.K + RNWUC4.K + RNWUC5.K)$
18700 NOTE
18710 A $RNWPS1.K = SWITCH(RNWFPSL * 8.76 / RNWCRFB.K, 0, RNWPKGS-1)$
18720 A $RNWPS2.K = SWITCH(RNWICN.K, 0, RNWPKGS-2)$
18730 A $RNWPSL.K = RNWPS1.K + RNWPS2.K$
18740 NOTE
18750 C $RNWSPSY = 3000$
18760 C $RNWSPCY = 3000$
18770 A $RNWSPS.K = CLIP(1, 0, TIME.K, RNWSPSY) * CLIP(1, 0, RNWSPCY, TIME.K)$
18780 C $RNWRSSY = 3000$
18790 C $RNWRSCY = 3000$
18800 A $RNWRSS.K = CLIP(1, 0, TIME.K, RNWRSSY) * CLIP(1, 0, RNWRSCY, TIME.K)$
18810 C $RNWRMSY = 3000$
18820 C $RNWRMCY = 3000$
18830 A $RNWRMS.K = CLIP(1, 0, TIME.K, RNWRMSY) * CLIP(1, 0, RNWRMCY, TIME.K)$
18840 NOTE
18850 NOTE PERFORMANCE STANDARDS POLICY SECTION
18860 NOTE
18870 C $RNWPSSY = 1988$
18880 C $RNWPSCY = 3000$
18890 A $RNWPSS.K = CLIP(1, 0, TIME.K, RNWPSSY) * CLIP(1, 0, RNWPSCY, TIME.K)$
18900 C $RNWP = .342$
18910 A $RNWPSC.K = TABHL(RNWCCT, (RNWBU - RNWPS), 0, .3, .05) * RNWPSS.K$
18920 NOTE
18930 NOTE INFORMATION PROGRAMS POLICY SECTION
18940 NOTE
18950 C $RNWIMP = .5$
18960 C $RNWIPLY = 3000$

18970 C $RWIPCY=3000$
 18980 A $RWIPS.K=CLIP(1,0,TIME.K,RWIPSY)*CLIP(1,0,RWIPCY,TIME.K)$
 18990 C $RWUIPR=.35$
 19000 C $RWIPD=2$
 19010 C $RWICPP=200$
 19020 A $RWIPP.K=RNHO.K*RWPR.K*RWUIPR*RWIPS.K$
 19030 A $RWIAIP.K=MIN(DLINFL(RWIPP.K,RWIPD),RWIPP.K)$
 19040 N $RWIPP=0$
 19050 A $RWIAIPR.K=RWIAIP.K/(RNHO.K*RWPR.K)$
 19060 A $RWUIUC.K=(RWIPP.K-RWIAIP.K)*RWICPP*(1+RWAC)/RWIPD$
 19070 A $RWIPR.K=RIPNDRB.K*RWIMP$
 19080 A $RWIIWR.K=((1-RWIAIPR.K)*RIPNDRB.K)+(RWIAIPR.K*RWIPR.K)$
 19090 A $RWIDB.K=CLIP(RIPNDRB.K,RWIIWR.K,RWIPSY,TIME.K)$
 19100 NOTE
 19110 NOTE FINANCIAL INCENTIVES POLICY SECTION
 19120 NOTE
 19130 C $RWFULR=.11$
 19140 C $RWFISY=3000$
 19150 C $RWFICY=3000$
 19160 C $RWFAC=0$
 19170 C $RWFUCF=0$
 19180 A $RWFIS.K=CLIP(0,1,RWFISY,TIME.K)*CLIP(1,0,RWFICY,TIME.K)$
 19190 A $RWFIM.K=TABHL(RWFMIT,RWFULR,0,.11,.01)$
 19200 T $RWFMIT=-.12/-.1/-.05/.1/.15/.2/.3/.4/.5/.65/.8/1.0$
 19210 A $RWFI.K=1+(RWFIS.K*(RWFIM.K-1))$
 19220 A $RWFDR.K=RDRL*RWFI.K$
 19230 C $RWFUPR=1$
 19240 C $RWFPPD=2$
 19250 A $RWFPP.K=RNHO.K*RWPR.K*RWFUPR*RWFIS.K$
 19260 A $RWFAP.K=MIN(DLINFL(RWFPP.K,RWFPPD),RWFPP.K)$
 19270 N $RWFPP=0$
 19280 A $RWFAPR.K=RWFAP.K/(RNHO.K*RWPR.K)$
 19290 A $RWFWDR.K=((1-RWFAPR.K)*RDRL)+(RWFAPR.K*RWFWDR.K)$
 19300 A $RWFWCF.K=RWFUCF*RWFAPR.K$
 19310 A $RWFUE.K=(RWPEN.K*RWFWCF.K)*(1+RWFAC)$
 19320 NOTE
 19330 NOTE MAINLINE STRUCTURE
 19340 NOTE
 19350 A $RWBEWA.K=(1-RIPAPR.K)+(RIPAPR.K*RWBEWA)$
 19360 A $RWDNO.K=RNHO.K*RWPR.K*RWBEU$
 19370 A $RWDR.K=RWIDB.K+RWFWDR.K$
 19380 A $RWCRF.K=RWDR.K/(1-1/(1+RWDR.K)^{RWWSL})$
 19390 A $RWCRFB.K=BPADR/(1-1/(1+BPADR)^{RWWSL})$
 19400 A $RWICN.K=(RAPEU.K*8.76/RWCRF.K)/(1-RTAXS)$
 19410 A $RWISN.K=TABHL(RWCST,RWICN.K,0,18000,1000)$
 19420 A $RWSRF.K=1-RWRSS.K*TABHL(RWRFRT,RWACS.K/RWISN.K,.6,1.4,.1)$
 19430 T $RWRFRT=1/.9/.8/.65/.5/.35/.2/.1/0$
 19440 A $RWMSNL.K=MAX(0,(RMCE.K-RAPEU.K)*8.76/RWCRFB.K)$
 19450 A $RWUS.K=RWSRF.K*RWSPS.K*MIN(RWMSNL.K,RWSCAP.K,$
 19460 X $RWWMF.K*RWICN.K+RWAS.K)$
 19470 A $RWICC.K=RWST.K$
 19480 A $RWICS.K=TABHL(RWCST,RWICC.K,0,18000,1000)$
 19490 A $RWNIN.K=RNHS.K*RWICS.K$
 19500 A $RWNIR.K=(RWNC.K/RWWSL)*CLIP(0,1,RWACS.K,RWICS.K)$
 19510 R $RWNCI.KL=RWNIN.K+RWNIR.K$
 19520 N $RWNCI=0$
 19530 R $RWNRR.KL=DELAY3P(RWNCI.JK,RWWSL,RWNC.K)$
 19540 A $RWD.K=RWDNO.K*RWBEWA.K-(RWNC.K*RWPR.K)$
 19550 A $RWACS.K=(RWNC.K*RWPR.K)/(RNHO.K*RWPR.K)$
 19560 A $RWTCC.K=TABHL(RWCCT,RWACS.K,0,.3,.05)$
 19570 A $RWPC.K=MAX(0,(TABHL(RWTCC,K,RWICS.K,0,.3,.05)/RWICS.K-$

19580 X $RNWUC.K) * (1 - RTAXS))$
 19590 A $RNWTXC.K = MAX(0, (TABHL(RNWTOCT, RNWICS.K, 0, .3, .05) / RNWICS.K -$
 19600 X $RNWUC.K) * RTAXS)$
 19610 A $RNWUEN.K = RNWPR.K * RNWUC.K * RNWNIN.K$
 19620 A $RNWPEN.K = RNWPR.K * RNWPC.K * RNWNIN.K * (1 - RNWFWCF.K)$
 19630 A $RNWTEN.K = RNWPR.K * RNWTXC.K * RNWNIN.K$
 19640 A $RNWDUC.K = DLINEF3(RNWUC.K, RNWSL)$
 19650 A $RNWDPC.K = DLINEF3(RNWP.C.K, RNWSL)$
 19660 A $RNWDIX.K = DLINEF3(RNWTXC.K, RNWSL)$
 19670 A $RNWUER.K = RNWPR.K * RNWNIR.K * RNWDUC.K * RNWRMS.K$
 19680 A $RNWPEN.K = (RNWNIR.K * RNWDPC.K + ((1 - RNWRMS.K) * (1 - RTAXS)$
 19690 X $* RNWNIR.K * RNWDUC.K)) * RNWPR.K$
 19700 A $RNWTEN.K = (RNWNIR.K * RNWDIX.K + ((1 - RNWRMS.K) * RTAXS$
 19710 X $* RNWNIR.K * RNWDUC.K)) * RNWPR.K$
 19720 A $RNWUE.K = (RNWUEN.K + RNWUER.K) * (1 + RNWAC)$
 19730 A $RNWPE.K = RNWPEN.K + RNWPER.K$
 19740 A $RNWTE.K = RNWTEN.K + RNWTER.K$
 19750 NOTE
 19760 L $RNWAUE.K = RNWAUE.J + DT * RNWAUEI.JK$
 19770 N $RNWAUE = 0$
 19780 R $RNWAUEI.KL = RNWUE.K + RNWFUE.K + RNWIUC.K$
 19790 NOTE
 19800 NOTE ACCUMULATE PARTICIPANTS EXPENDITURES
 19810 NOTE
 19820 L $RNWTPE.K = RNWTPE.J + DT * RNWTPEI.JK$
 19830 N $RNWTPE = 0$
 19840 R $RNWTPEI.KL = RNWPE.K$
 19850 NOTE
 19860 NOTE
 19870 A $RNWICEO.K = RMCE.K * 8.76 / RNWCRFB.K$
 19880 A $RNWICSO.K = TABHL(RNWCST, RNWICEO.K, 0, 18000, 1000)$
 19890 NOTE
 19900 NOTE BEHAVIORAL FACTORS
 19910 NOTE
 19920 C $RNWEIRN = .032$
 19930 C $RNWHIGR = .019$
 19940 C $RNWHII = 21000$
 19950 A $RNWAEN.K = RAPEU.K * 8.76 * ((RNWBU * RNWEWA.K) - RNWACS.K)$
 19960 A $RNWHI.K = RNWHII * EXP(RNWHIGR * DEMEGM * (TIME.K - 1984))$
 19970 A $RNWEIR.K = RNWAEN.K / RNWHI.K$
 19980 A $RNWDMB.K = SWITCH(1, TABHL(RNWDMBT, RNWEIR.K / RNWEIRN, 0, 2, .5), ROWBSS)$
 19990 T $RNWDMBT = 1/1/1/1/1$
 20000 A $RNWND.K = RNWD.K * RNWDMB.K$
 20010 A $RNWCONS.K = RNWDNO.K - RNWND.K$
 20020 A $RNWRNC.K = (RNWAUE.K * RNWCRFB.K) / (87.6 * MAX(.01, RNWCONS.K))$
 20030 NOTE
 20040 NOTE ENERGY SERVICE COST
 20050 NOTE
 20060 C $RNBEC = 310$
 20070 A $RNWRCRF.K = RDRL / (1 - 1 / (1 + RDRL) ^ RNSSL)$
 20080 A $RNWESC.K = (RNWTPE.K + RNBEC) * RNWRCRF.K + RAPEU.K * 8.76 * (RNWBU - RNWACS.K)$
 20090 NOTE
 20100 NOTE OTHER USES
 20110 NOTE
 20120 T $RNOCCT = 0/77/118/179/439/1075/3227/9113$
 20130 T $RNOCST = 0/.223/.248/.257/.258/.263/.285/.304/.307/.324/$
 20140 X $.326/.327/.329/.341/.346/.347/.347$
 20150 T $RNOTCCT = 0/0/5/14/28/61/192/478$
 20160 C $RNOBU = .942$
 20170 C $RNOAC = .11$
 20180 C $RNOSL = 10$

20190 A $RNOPR.K = TABHL(RNOPRT, TIME.K, 1984, 2004, 5)$
 20200 T $RNOPRT = 1.1/1.15/1.2/1.26/1.28$
 20210 C $RNOBMA = 1.0$
 20220 NOTE
 20230 NOTE SUBSIDY PROGRAMS POLICY SECTION
 20240 NOTE
 20250 C $RNOSAS = 0$
 20260 C $RNOSTS = 2$
 20270 C $RNOCDS = 0$
 20280 C $RNOPKGS = 0$
 20290 C $RNOSFS = 0$
 20300 C $RNOFCMS = 0$
 20310 C $RNOFC = 1E6$
 20320 C $RNOCCI = 0$
 20330 C $RNOCSI = 0$
 20340 C $RNODELC = 100$
 20350 C $RNOFPSL = 0$
 20360 NOTE
 20370 A $RNOAS5.K = SWITCH(RNOSFS, 0, RNOSAS-5)$
 20380 A $RNOAS6.K = SWITCH(BPAAVC.K, 0, RNOSAS-6)$
 20390 A $RNOAS7.K = SWITCH(MAX(0, BPAAVC.K - RAPEU.K), 0, RNOSAS-7)$
 20400 A $RNOAS.K = (RNOAS5.K + RNOAS6.K + RNOAS7.K) * 8.76 / RNOCRFB.K$
 20410 NOTE
 20420 A $RNOMF.K = SWITCH(RNOFCMS, 0, RNOSAS-1) + SWITCH(RNOFCMS, 0, RNOSAS-2)$
 20430 X $+ SWITCH(RNOFCMS, 0, RNOSAS-3) + SWITCH(RNOFCMS, 0, RNOSAS-4)$
 20440 NOTE
 20450 A $RNOSC2.K = SWITCH(RNOFC, 1E6, RNOSAS-2)$
 20460 A $RNOSC3.K = SWITCH(BPAAVC.K, 1E6, RNOSAS-3)$
 20470 A $RNOSC4.K = SWITCH(MAX(0, BPAAVC.K - RAPEU.K), 1E6, RNOSAS-4)$
 20480 A $RNOSCAP.K = (MIN(RNOSC2.K, RNOSC3.K, RNOSC4.K)) * 8.76 / RNOCRFB.K$
 20490 NOTE
 20500 A $RNOSS.K = TABHL(RNOCST, RNOUS.K, 0, 8000, 500)$
 20510 A $RNOVA.K = (RNOUS.K - RNOCCI) * (RNOSS.K - RNOCST) / 2$
 20520 A $RNODLS.K = TABHL(RNOCST, RNOICN.K + RNOUS.K + RNODELC, 0, 8000, 500)$
 20530 X $- TABHL(RNOCST, RNOICN.K + RNOUS.K, 0, 8000, 500)$
 20540 A $RNOSLP.K = RNODELC / (MAX(.01, RNODLS.K))$
 20550 A $RNOVC.K = SQRT(MAX(2 * RNOSLP.K * RNOVA.K, 0))$
 20560 A $RNOST.K = MAX(RNOICN.K, RNOPSC.K, SWITCH(RNOUS.K, 0, RNOSTS-1) +$
 20570 X $SWITCH(RNOUS.K + RNOICN.K, 0, RNOSTS-2) + SWITCH(RNOUS.K$
 20580 X $+ RNOVC.K, 0, RNOSTS-3))$
 20590 NOTE
 20600 A $RNOCSP.K = TABHL(RNOCST, (RNOFCMS / (1 + RNOFCMS)) *$
 20610 X $RNOSCAP.K, 0, 8000, 500)$
 20620 A $RNOUUC1.K = (MIN(TABHL(RNOTCCT, RNOCSP.K, 0, .35, .05), TABHL($
 20630 X $RNOTCCT, RNOICS.K, 0, .35, .05)) * (RNOFCMS / (1 + RNOFCMS))) +$
 20640 X $MAX(0, RNOICS.K - RNOCSP.K) * RNOSCAP.K$
 20650 A $RNOUC1.K = SWITCH(MIN(RNOMSNL.K, RNOSCAP.K, RNOUUC1.K / RNOICS.K),$
 20660 X $0, RNOCDS-1)$
 20670 NOTE
 20680 NOTE ADDITIVE SHARE, FLAT RATE
 20690 NOTE
 20700 A $RNOUUC2.K = RNOAS.K * MAX(0, RNOICS.K - TABHL(RNOCST, RNOPSC.K,$
 20710 X $0, 8000, 500))$
 20720 A $RNOUC2.K = SWITCH(MIN(RNOMSNL.K, RNOSCAP.K, RNOUUC2.K / RNOICS.K),$
 20730 X $0, RNOCDS-2)$
 20740 NOTE
 20750 NOTE ADDITIVE SHARE, TOTAL COST
 20760 NOTE
 20770 A $RNOUUC3.K = MAX(0, TABHL(RNOTCCT, TABHL(RNOCST, RNOAS.K, 0, 8000, 500),$
 20780 X $0, .35, .05) - TABHL(RNOTCCT, TABHL(RNOCST, RNOPSC.K, 0, 8000, 500),$
 20790 X $0, .35, .05))$

20800 A RNOUC3.K=SWITCH(MIN(RNOMSNL.K,RNOSCAP.K,RNOUC3.K/RNOICS.K),
 20810 X 0,RNOCD5-3)
 20820 NOTE
 20830 NOTE ADDITIVE SHARE, TOTAL COST TO CAP
 20840 NOTE
 20850 A RNOUC4.K=0
 20860 NOTE
 20870 NOTE ADDITIVE SHARE, COST SHARING, FIXED PARTICIPANT COST
 20880 NOTE
 20890 A RNOUC5.K=MAX(0,TABHL(RNOTOCT,TABHL(RNOCST,RNOAS.K,0,8000,500),
 20900 X 0,.35,.05)-TABHL(RNOTOCT,TABHL(RNOCST,RNOPSL.K,0,8000,500),
 20910 X 0,.35,.05))-RNOPSL.K*MAX(0,RNOICS.K-TABHL(RNOCST,RNOPSL.K,
 20920 X 0,8000,500))
 20930 A RNOUC5.K=SWITCH(MIN(RNOMSNL.K,RNOSCAP.K,RNOUC5.K/RNOICS.K),
 20940 X 0,RNOCD5-5)
 20950 NOTE
 20960 A RNOUC.K=RNOSPS.K*(RNOUC1.K+RNOUC2.K+RNOUC3.K+RNOUC4.K+RNOUC5.K)
 20970 NOTE
 20980 A RNOPS1.K=SWITCH(RNOFFPSL*8.76/RNOCRFB.K,0,RNOPKGS-1)
 20990 A RNOPS2.K=SWITCH(RNOICN.K,0,RNOPKGS-2)
 21000 A RNOPSL.K=RNOPS1.K+RNOPS2.K
 21010 NOTE
 21020 C RNOSPSY=3000
 21030 C RNOSPCY=3000
 21040 A RNOSPS.K=CLIP(1,0,TIME.K,RNOSPSY)*CLIP(1,0,RNOSPCY,TIME.K)
 21050 C RNORSSY=3000
 21060 C RNORSCY=3000
 21070 A RNORSS.K=CLIP(1,0,TIME.K,RNORSSY)*CLIP(1,0,RNORSCY,TIME.K)
 21080 C RNORMSY=3000
 21090 C RNORMCY=3000
 21100 A RNORMS.K=CLIP(1,0,TIME.K,RNORMSY)*CLIP(1,0,RNORMCY,TIME.K)
 21110 NOTE
 21120 NOTE PERFORMANCE STANDARDS POLICY SECTION
 21130 NOTE
 21140 C RNOPPIY=1988
 21150 C RNOPP2Y=1988
 21160 C RNOPP3Y=1988
 21170 A RNOPPLS.K=CLIP(1,0,TIME.K,RNOPPIY)
 21180 A RNOPP2S.K=RNOPPLS.K*CLIP(1,0,TIME.K,RNOPP2Y)
 21190 A RNOPP3S.K=RNOPP2S.K*CLIP(1,0,TIME.K,RNOPP3Y)
 21200 A RNOPPER.K=RNOPPLS.K+RNOPP2S.K+RNOPP3S.K
 21210 NOTE
 21220 C RNOPCFD=0
 21230 C RNOPCF1=.3
 21240 C RNOPCF2=.8
 21250 C RNOPCF3=1
 21260 A RNOPCF.K=SWITCH(RNOPCFD,0,RNOPPER.K)+SWITCH(RNOPCF1,0,RNOPPER.K-1)
 21270 X +SWITCH(RNOPCF2,0,RNOPPER.K-2)+SWITCH(RNOPCF3,0,RNOPPER.K-3)
 21280 NOTE
 21290 A RNOPS.K=TABHL(RNOPST,TIME.K-RNOASDT,1988,1993,5)
 21300 T RNOPST=.792/.751
 21310 NOTE
 21320 A RNOPSC.K=TABHL(RNOCCT,(RNOBU-RNOPS.K)*RNOPCF.K,0,.35,.05)
 21330 C RNOASDT=0
 21340 NOTE
 21350 NOTE INFORMATION PROGRAMS POLICY SECTION
 21360 NOTE
 21370 C RNOIMP=.5
 21380 C RNOIPSY=3000
 21390 C RNOIPCY=3000
 21400 A RNOIPS.K=CLIP(1,0,TIME.K,RNOIPSY)*CLIP(1,0,RNOIPCY,TIME.K)

21410 C $RNOIUPR=.35$
21420 C $RNOIPD=2$
21430 C $RNOICPP=200$
21440 A $RNOIPP.K=RHO.K*RNOPR.K*RNOIUPR*RNOIPS.K$
21450 A $RNOIAP.K=MIN(DLINF1(RNOIPP.K,RNOIPD),RNOIPP.K)$
21460 N $RNOIPP=0$
21470 A $RNOIAPR.K=RNOIAP.K/(RHO.K*RNOPR.K)$
21480 A $RNOIUC.K=(RNOIPP.K-RNOIAP.K)*RNOICPP*(1+RNOAC)/RNOIPD$
21490 A $RNOIPR.K=RIPNDRB.K*RNOIMP$
21500 A $RNOIWR.K=((1-RNOIAPR.K)*RIPNDRB.K)+(RNOIAPR.K*RNOIPR.K)$
21510 A $RNOIDB.K=CLIP(RIPNDRB.K,RNOIWR.K,RNOIPSY,TIME.K)$
21520 NOTE
21530 NOTE FINANCIAL INCENTIVES POLICY SECTION
21540 NOTE
21550 C $RNOFULR=.11$
21560 C $RNOFISY=3000$
21570 C $RNOFICY=3000$
21580 C $RNOFAC=0$
21590 C $RNOFUCF=0$
21600 A $RNOFIS.K=CLIP(0,1,RNOFISY,TIME.K)*CLIP(1,0,RNOFICY,TIME.K)$
21610 A $RNOFIM.K=TABHL(RNOFIMT,RNOFULR,0,.11,.01)$
21620 T $RNOFIMT=-.12/-.1/-.05/.1/.15/.2/.3/.4/.5/.65/.8/1.0$
21630 A $RNOFI.K=1+(RNOFIS.K*(RNOFIM.K-1))$
21640 A $RNOFDR.K=RDRL*RNOFI.K$
21650 C $RNOFUPR=1$
21660 C $RNOFPD=2$
21670 A $RNOFPP.K=RHO.K*RNOPR.K*RNOFUPR*RNOFIS.K$
21680 A $RNOFAP.K=MIN(DLINF1(RNOFPP.K,RNOFPD),RNOFPP.K)$
21690 N $RNOFPP=0$
21700 A $RNOFAPR.K=RNOFAP.K/(RHO.K*RNOPR.K)$
21710 A $RNOFWDR.K=((1-RNOFAPR.K)*RDRL)+(RNOFAPR.K*RNOFDR.K)$
21720 A $RNOFWCF.K=RNOFUCF*RNOFAPR.K$
21730 A $RNOFUE.K=(RNOFPP.K*RNOFWCF.K)*(1+RNOFAC)$
21740 NOTE
21750 NOTE MAINLINE STRUCTURE
21760 NOTE
21770 A $RNOEWA.K=(1-RIPAPR.K)+(RIPAPR.K*RNOEWA.K)$
21780 A $RNODNO.K=RHO.K*RNOPR.K*RNOBU$
21790 A $RNODR.K=RNOIDB.K+RNOFWDR.K$
21800 A $RNOCRF.K=RNODR.K/(1-1/(1+RNODR.K)^{RNOISL})$
21810 A $RNOCRFB.K=BPADR/(1-1/(1+BPADR)^{RNOISL})$
21820 A $RNOICN.K=(RAPEU.K*8.76/RNOCRF.K)/(1-RTAXS)$
21830 A $RNOISN.K=TABHL(RNOCST,RNOICN.K,0,8000,500)$
21840 A $RNOSRF.K=1-RNORSS.K*TABHL(RNORFT,RNOACS.K/RNOISN.K,.6,1.4,.1)$
21850 T $RNORFT=1/.9/.8/.65/.5/.35/.2/.1/0$
21860 A $RNOMSNI.K=MAX(0,(RMCE.K-RAPEU.K)*8.76/RNOCRFB.K)$
21870 A $RNOUS.K=RNOSRF.K*RNOISN.K*MIN(RNOMSNI.K,RNOSCAP.K,$
21880 X $RNOF.K*RNOICN.K+RNOAS.K)$
21890 A $RNOICC.K=RNOST.K$
21900 A $RNONIN.K=RNHS.K*RNOICS.K$
21910 A $RNOICS.K=TABHL(RNOCST,RNOICC.K,0,8000,500)$
21920 A $RNONIR.K=(RNONC.K/RNOSL)*CLIP(0,1,RNOACS.K,RNOICS.K)$
21930 R $RNONCI.KL=RNONIN.K+RNONIR.K$
21940 N $RNONCI=0$
21950 R $RNONRR.KL=DELAY3P(RNONCI.JK,RNOSL,RNONC.K)$
21960 A $RNOD.K=RNODNO.K*RNOEWA.K-(RNONC.K*RNOPR.K)$
21970 A $RNOACS.K=(RNONC.K*RNOPR.K)/(RHO.K*RNOPR.K)$
21980 A $RNOTCC.K=TABHL(RNOCCT,RNOACS.K,0,.35,.05)$
21990 A $RNOFC.K=MAX(0,(TABHL(RNOTCCT,RNOICS.K,0,.35,.05)/RNOICS.K-$
22000 X $RNOUC.K)*(1-RTAXS))$
22010 A $RNOTXC.K=MAX(0,(TABHL(RNOTCCT,RNOICS.K,0,.35,.05)/RNOICS.K-$

22020 X $RNOUC.K) * RTAXS)$
 22030 A $RNOUEN.K = RNOPR.K * RNOUC.K * RNONIN.K$
 22040 A $RNOPEN.K = RNOPR.K * RNOPC.K * RNONIN.K * (1 - RNOFWCF.K)$
 22050 A $RNOTEN.K = RNOPR.K * RNOTXC.K * RNONIN.K$
 22060 A $RNODUC.K = DLINF3(RNOUC.K, RNOVL)$
 22070 A $RNODPC.K = DLINF3(RNOPC.K, RNOVL)$
 22080 A $RNODTX.K = DLINF3(RNOTXC.K, RNOVL)$
 22090 A $RNOUER.K = RNOPR.K * RNONIR.K * RNODUC.K * RNORMS.K$
 22100 A $RNOPER.K = (RNONIR.K * RNODPC.K + (1 - RNORMS.K) * (1 - RTAXS)$
 22110 X $* RNONIR.K * RNODUC.K) * RNOPR.K$
 22120 A $RNOTER.K = (RNONIR.K * RNODTX.K + (1 - RNORMS.K) * RTAXS$
 22130 X $* RNONIR.K * RNODUC.K) * RNOPR.K$
 22140 A $RNOUE.K = (RNOUEN.K + RNOUER.K) * (1 + RNOAC)$
 22150 A $RNOPE.K = RNOPE.N.K + RNOPE.R.K$
 22160 A $RNOTE.K = RNOTEN.K + RNOTER.K$
 22170 NOTE
 22180 L $RNOAUE.K = RNOAUE.J + DT * RNOAUEI.JK$
 22190 N $RNOAUE = 0$
 22200 R $RNOAUEI.KL = RNOUE.K + RNOFUE.K + RNOIUC.K$
 22210 NOTE
 22220 NOTE ACCUMULATE PARTICIPANTS EXPENDITURES
 22230 NOTE
 22240 L $RNOTPE.K = RNOTPE.J + DT * RNOTPEI.JK$
 22250 N $RNOTPE = 0$
 22260 R $RNOTPEI.KL = RNOPE.K$
 22270 NOTE
 22280 NOTE
 22290 A $RNOICEO.K = RMCE.K * 8.76 / RNOCRFB.K$
 22300 A $RNOICSO.K = TABHL(RNOCST, RNOICEO.K, 0, 8000, 500)$
 22310 NOTE
 22320 NOTE BEHAVIORAL FACTORS
 22330 NOTE
 22340 C $RNOEIRN = .032$
 22350 C $RNOHIGR = .019$
 22360 C $RNOHII = 21000$
 22370 A $RNOAEN.K = RAPEU.K * 8.76 * ((RNOBU * RNOBWA.K) - RNOACS.K)$
 22380 A $RNOHI.K = RNOHII * EXP(RNOHIGR * DEMEGM * (TIME.K - 1984))$
 22390 A $RNOEIR.K = RNOAEN.K / RNOHI.K$
 22400 A $RNODMB.K = SWITCH(1, TABHL(RNODMBT, RNOEIR.K / RNOEIRN, 0, 2, .5), ROOBSS)$
 22410 T $RNODMBT = 1/1/1/1/1$
 22420 A $RNOND.K = RNOD.K * RNODMB.K$
 22430 A $RNOCONS.K = RNODNO.K - RNOND.K$
 22440 A $RNORNC.K = (RNOAUE.K * RNOCRFB.K) / (87.6 * MAX(.01, RNOCONS.K))$
 22450 NOTE
 22460 NOTE ENERGY SERVICE COST
 22470 NOTE
 22480 C $RNOBEC = 0$
 22490 A $RNORCRF.K = RDRL / (1 - 1 / (1 + RDRL) ^ RNOVL)$
 22500 A $RNOESC.K = (RNOTPE.K + RNOBEC) * RNORCRF.K + RAPEU.K * 8.76 * (RNOBU - RNOACS.K)$
 22510 NOTE
 22520 NOTE *****
 22530 NOTE
 22540 NOTE COMMERCIAL SECTOR DEMAND FOR ELECTRICITY
 22550 NOTE
 22560 NOTE *****
 22570 NOTE
 22580 NOTE
 22590 NOTE
 22600 C $CSDR = .03$
 22610 C $CDRL = .05$
 22620 C $CDRB = .20$

22630 C CTAXS=0
 22640 A CMCE.K=500
 22650 C CAPSW=0
 22660 A CAPEU.K=SWITCH(CAPE.K,TABHL(CAPET,TIME.K,1984,2004,4),CAPSW)
 22670 T CAPET=27/26.406/26.173/26.081/25.741/25.872
 22680 A COBO.K=TABHL(COBOT,TIME.K,1984,2024,5)
 22690 T COBOT=1.334/1.297/1.242/1.181/1.126/1.074/1.024/.976/.930
 22700 A CNBO.K=DEMEGM*TABHL(CNBOT,TIME.K,1984,2024,5)
 22710 T CNBOT=.001/.229/.486/.735/.981/1.309/1.748/2.332/3.113
 22720 A CNBS.K=CNBO.K-DLINF3(CNBO.K,1)
 22730 A CHALT.K=50
 22740 A CBUILD.K=COBO.K+CNBO.K
 22750 NOTE
 22760 A CSD.K=COSD.K+CNSD.K
 22770 A CND.K=COND.K+CNND.K
 22780 A CD.K=CSD.K+CND.K
 22790 NOTE
 22800 A CSUE.K=COSUE.K+CNSUE.K
 22810 A CNUE.K=CONUE.K+CNNUE.K
 22820 A CUE.K=CNUE.K+CSUE.K+CIPUC.K+CSIUC.K+CNIUC.K
 22830 A CNEWUE.K=CNUE.K+CNSUE.K
 22840 A COLDUE.K=CONUE.K+COSUE.K
 22850 A CSIUC.K=COSIUC.K+CNSIUC.K
 22860 A CNIUC.K=CONIUC.K+CNNIUC.K
 22870 NOTE
 22880 A CSPE.K=COSPE.K+CNSPE.K
 22890 A CNPE.K=CONPE.K+CNNPE.K
 22900 A CPE.K=CSPE.K+CNPE.K
 22910 NOTE
 22920 A CSTE.K=COSTE.K+CNSTE.K
 22930 A CNTE.K=CONTE.K+CNNTE.K
 22940 A CTE.K=CSTE.K+CNTE.K
 22950 NOTE
 22960 A CNNC.K=CONNC.K+(CNNNC.K*CNNPR.K)
 22970 A CSNC.K=COSNC.K+(CNSNC.K*CNSPR.K)
 22980 A CNC.K=CNNC.K+CSNC.K
 22990 A COLDNC.K=COSNC.K+CONNC.K
 23000 A CNEWNC.K=CNC.K-COLDNC.K
 23010 NOTE
 23020 NOTE INFORMATION PROGRAMS POLICY SECTION - ALL SERVICE CATEGORIES
 23030 NOTE
 23040 C CIPMP=.5
 23050 C CIPAC=.11
 23060 C CIPPSY=3000
 23070 C CIPPCY=3000
 23080 A CIPPS.K=CLIP(1,0,TIME.K,CIPPSY)*CLIP(1,0,CIPPCY,TIME.K)
 23090 C CIPUPR=.35
 23100 C CIPPD=2
 23110 C CIPCPP=100
 23120 A CIPPP.K=CBUILD.K*CIPUPR*CIPPS.K
 23130 A CIPAP.K=MIN(DLINF1(CIPPP.K,CIPPD),CIPPP.K)
 23140 N CIPPP=0
 23150 A CIPAPR.K=CIPAP.K/CBUILD.K
 23160 A CIPUC.K=(CIPPP.K-CIPAP.K)*CIPCPP*(1+CIPAC)/CIPPD
 23170 L CIPAUC.K=CIPAUC.J+DT*CIPAUCI.JK
 23180 N CIPAUC=0
 23190 R CIPAUCI.KI=CIPUC.K
 23200 A CIPPR.K=CDRB*CIPMP
 23210 A CIPWR.K=((1-CIPAPR.K)*CDRB)+(CIPAPR.K*CIPPR.K)
 23220 A CIPDRB.K=CLIP(CDRB,CIPWR.K,CIPPSY,TIME.K)
 23230 NOTE

23240 NOTE COMMERCIAL SECTOR - OLD BUILDINGS
 23250 NOTE SUBSTITUTABLE
 23260 NOTE
 23270 T COSOCT=0/161/322/483/645/1174/2775/6485/10053/12316/14580/
 23280 X 16843/27743/30007/32271/34534/36798/39061/41325/43588
 23290 T COSCST=0/.310/.477/.535/.543/.576/.612/.632/.645/.653/.655/
 23300 X .657/.674/.701/.727/.733/.733/.733/.753/.776/.798
 23310 T COSTOCT=0/141/282/627/2539/5973/15958/19392/22826/26260/29694
 23320 C COSBU=2.47
 23330 C COSAC=.11
 23340 C COSSL=30
 23350 A COSPR.K=TABHL(COSPR.T,TIME.K,1984,2004,4)
 23360 T COSPR.T=.498/.537/.545/.627/.681/.609
 23370 C COSBMA=1.0
 23380 NOTE
 23390 NOTE SUBSIDY PROGRAMS POLICY SECTION
 23400 NOTE
 23410 C COSSASD=0
 23420 C COSSAS1=2
 23430 C COSSAS2=0
 23440 C COSSAS3=5
 23450 A COSSAS.K=SWITCH(COSSASD,0,COSSPER.K)+SWITCH(COSSAS1,0,COSSPER.K-1)
 23460 X +SWITCH(COSSAS2,0,COSSPER.K-2)+SWITCH(COSSAS3,0,COSSPER.K-3)
 23470 C COSSTSD=2
 23480 C COSSTS1=1
 23490 C COSSTS2=2
 23500 C COSSTS3=2
 23510 A COSSTS.K=SWITCH(COSSTSD,0,COSSPER.K)+SWITCH(COSSTS1,0,COSSPER.K-1)
 23520 X +SWITCH(COSSTS2,0,COSSPER.K-2)+SWITCH(COSSTS3,0,COSSPER.K-3)
 23530 C COSCDS=0
 23540 C COSCDS1=1
 23550 C COSCDS2=0
 23560 C COSCDS3=3
 23570 A COSCDS.K=SWITCH(COSCDS,0,COSSPER.K)+SWITCH(COSCDS1,0,COSSPER.K-1)
 23580 X +SWITCH(COSCDS2,0,COSSPER.K-2)+SWITCH(COSCDS3,0,COSSPER.K-3)
 23590 C COSPKSD=0
 23600 C COSPKS1=0
 23610 C COSPKS2=0
 23620 C COSPKS3=0
 23630 A COSPKS.K=SWITCH(COSPKSD,0,COSSPER.K)+SWITCH(COSPKS1,0,COSSPER.K-1)
 23640 X +SWITCH(COSPKS2,0,COSSPER.K-2)+SWITCH(COSPKS3,0,COSSPER.K-3)
 23650 C COSSFSD=0
 23660 C COSSFS1=0
 23670 C COSSFS2=0
 23680 C COSSFS3=40
 23690 A COSSFS.K=SWITCH(COSSFSD,0,COSSPER.K)+SWITCH(COSSFS1,0,COSSPER.K-1)
 23700 X +SWITCH(COSSFS2,0,COSSPER.K-2)+SWITCH(COSSFS3,0,COSSPER.K-3)
 23710 C COSFMSD=0
 23720 C COSFMS1=1.2
 23730 C COSFMS2=0
 23740 C COSFMS3=0
 23750 A COSFMS.K=SWITCH(COSFMSD,0,COSSPER.K)+SWITCH(COSFMS1,0,COSSPER.K-1)
 23760 X +SWITCH(COSFMS2,0,COSSPER.K-2)+SWITCH(COSFMS3,0,COSSPER.K-3)
 23770 C COSFCD=0
 23780 C COSFC1=6
 23790 C COSFC2=40
 23800 C COSFC3=40
 23810 A COSFC.K=SWITCH(COSFCD,0,COSSPER.K)+SWITCH(COSFC1,0,COSSPER.K-1)
 23820 X +SWITCH(COSFC2,0,COSSPER.K-2)+SWITCH(COSFC3,0,COSSPER.K-3)
 23830 C COSCCI=6
 23840 C COSCSI=.1499

23850 C COSDEL=100
 23860 C COSFPLD=0
 23870 C COSFPL1=0
 23880 C COSFPL2=0
 23890 C COSFPL3=0
 23900 A COSFPL.K=SWITCH(COSFPLD,0,COSSPER.K)+SWITCH(COSFPL1,0,COSSPER.K-1)
 23910 X +SWITCH(COSFPL2,0,COSSPER.K-2)+SWITCH(COSFPL3,0,COSSPER.K-3)
 23920 NOTE
 23930 A COSAS5.K=SWITCH(COSSFS.K,0,COSSAS.K-5)
 23940 A COSAS6.K=SWITCH(BPAAVC.K,0,COSSAS.K-6)
 23950 A COSAS7.K=SWITCH(MAX(0,BPAAVC.K-CAPEU.K),0,COSSAS.K-7)
 23960 A COSAS.K=(COSAS5.K+COSAS6.K+COSAS7.K)*8.76/COSCRFB.K
 23970 NOTE
 23980 A COSMF.K=SWITCH(COSFMS.K,0,COSSAS.K-1)+SWITCH(COSFMS.K,0,COSSAS.K-2)
 23990 X +SWITCH(COSFMS.K,0,COSSAS.K-3)+SWITCH(COSFMS.K,0,COSSAS.K-4)
 24000 NOTE
 24010 A COSSC2.K=SWITCH(COSFC.K,1E6,COSSAS.K-2)
 24020 A COSSC3.K=SWITCH(BPAAVC.K,1E6,COSSAS.K-3)
 24030 A COSSC4.K=SWITCH(MAX(0,BPAAVC.K-CAPEU.K),1E6,COSSAS.K-4)
 24040 A COSSCAP.K=(MIN(COSSC2.K,COSSC3.K,COSSC4.K))*8.76/COSCRFB.K
 24050 NOTE
 24060 A COSSS.K=TABHL(COSCST,COSUS.K,0,10000,500)
 24070 A COSVA.K=(COSUS.K-COSCCI)*(COSSS.K-COSCST)/2
 24080 A COSDLS.K=TABHL(COSCST,COSICN.K+COSUS.K+COSDEL,0,10000,500)
 24090 X -TABHL(COSCST,COSICN.K+COSUS.K,0,10000,500)
 24100 A COSSLP.K=COSDEL/(MAX(.01,COSDLS.K))
 24110 A COSVC.K=SQR(2*COSSLP.K*COSVA.K,0)
 24120 A COSST.K=MAX(COSICN.K,COSPSC.K,SWITCH(COSUS.K,0,COSSTS.K-1)+
 24130 X SWITCH(COSUS.K+COSICN.K,0,COSSTS.K-2)+SWITCH(COSUS.K
 24140 X +COSVC.K,0,COSSTS.K-3))
 24150 NOTE
 24160 A COSUC1.K=SWITCH(MIN(COSMSNL.K,COSSCAP.K,CLIP(COSSPLS.K*
 24170 X COSMF.K*COSTCC.K/(1+COSMF.K),0,COSTCC.K,COSPSL.K)),0,COSCD.S.K-1)
 24180 A COSUC2.K=SWITCH(MIN(COSMSNL.K,COSSCAP.K,CLIP(COSAS.K,0,COSTCC.K,
 24190 X COSPSL.K)),0,COSCD.S.K-2)
 24200 A COSUC3.K=SWITCH(MIN(COSMSNL.K,COSSCAP.K,CLIP(COSTCC.K,0,COSTCC.K,
 24210 X COSPSL.K)),0,COSCD.S.K-3)
 24220 A COSUC4.K=SWITCH(MIN(COSMSNL.K,COSSCAP.K,CLIP(MIN(COSTCC.K,COSAS.K),
 24230 X 0,COSTCC.K,COSPSL.K)),0,COSCD.S.K-4)
 24240 A COSUC5.K=SWITCH(MIN(COSMSNL.K,COSSCAP.K,CLIP(COSTCC.K-COSPSL.K,
 24250 X 0,COSTCC.K,COSPSL.K)),0,COSCD.S.K-5)
 24260 A COSUC.K=COSSPLS.K*(COSUC1.K+COSUC2.K+COSUC3.K+COSUC4.K+COSUC5.K)
 24270 NOTE
 24280 A COSPS1.K=SWITCH(COSFPL.K*8.76/COSCRFB.K,0,COSPKS.K-1)
 24290 A COSPS2.K=SWITCH(COSICN.K,0,COSPKS.K-2)
 24300 A COSPSL.K=COSPS1.K+COSPS2.K
 24310 NOTE
 24320 A COSSRI.K=TABHL(COSTCCT,COSCSI,0,2,.2)
 24330 A COSSRN.K=TABHL(COSTCCT,COSISN.K,0,2,.2)
 24340 A COSSRC.K=TABHL(COSTCCT,COSICS.K,0,2,.2)
 24350 A COSSRM.K=(COSSRN.K-COSSRI.K)/(COSSRC.K-COSSRI.K)
 24360 A COSSRS.K=(COSISN.K-COSCSI)/(COSICS.K-COSCSI)
 24370 NOTE
 24380 C COSSPIY=1984
 24390 C COSSP2Y=1988
 24400 C COSSP3Y=3000
 24410 A COSSP1S.K=CLIP(1,0,TIME.K,COSSPIY)
 24420 A COSSP2S.K=COSSP1S.K*CLIP(1,0,TIME.K,COSSP2Y)
 24430 A COSSP3S.K=COSSP2S.K*CLIP(1,0,TIME.K,COSSP3Y)
 24440 A COSSPER.K=COSSP1S.K+COSSP2S.K+COSSP3S.K
 24450 C COSRMSY=1984

24460 C COSRM CY=3000
 24470 A COSRMS.K=CLIP(1,0,TIME.K,COSRMSY)*CLIP(1,0,COSRM CY,TIME.K)
 24480 NOTE
 24490 NOTE PERFORMANCE STANDARDS POLICY SECTION
 24500 NOTE
 24510 C COSPSSY=3000
 24520 C COSPSCY=3000
 24530 A COSPSS.K=CLIP(1,0,TIME.K,COSPSSY)*CLIP(1,0,COSPSCY,TIME.K)
 24540 C COSPS=0.0
 24550 A COSPSC.K=TABHL(COSCCT,(COSEU-COSPS),0,1.9,.1)*COSPSS.K
 24560 NOTE
 24570 NOTE INFORMATION PROGRAMS POLICY SECTION
 24580 NOTE
 24590 C COSIMP=.5
 24600 C COSIPSY=3000
 24610 C COSIPCY=3000
 24620 A COSIPS.K=CLIP(1,0,TIME.K,COSIPSY)*CLIP(1,0,COSIPCY,TIME.K)
 24630 C COSIUPR=.35
 24640 C COSIPD=2
 24650 C COSICPP=200
 24660 A COSIPP.K=COBO.K*COSPR.K*COSIPS.K*COSIUPR
 24670 A COSIAP.K=MIN(DLINF1(COSIPP.K,COSIPD),COSIPP.K)
 24680 N COSIPP=0
 24690 A COSIAPR.K=COSIAP.K/(COBO.K*COSPR.K)
 24700 A COSIUC.K=(COSIPP.K-COSIAP.K)*COSICPP*(1+COSAC)/COSIPD
 24710 A COSIPR.K=CIPDRB.K*COSIMP
 24720 A COSIWR.K=((1-COSIAPR.K)*CIPDRB.K)+(COSIAPR.K*COSIPR.K)
 24730 A COSIDB.K=CLIP(CIPDRB.K,COSIWR.K,COSIPSY,TIME.K)
 24740 NOTE
 24750 NOTE MAINLINE STRUCTURE
 24760 NOTE
 24770 C COSNCE=.01428
 24780 NOTE
 24790 NOTE
 24800 NOTE
 24810 A COSEWA.K=(1-CIPAPR.K)+(CIPAPR.K*COSEBMA)
 24820 A COSDNO.K=COBO.K*COSPR.K*COSEU
 24830 A COSDR.K=COSIDB.K+CDRL
 24840 A COSCRF.K=COSDR.K/(1-1/(1+COSDR.K)^COSL)
 24850 A COSCRFB.K=BPADR/(1-1/(1+BPADR)^COSL)
 24860 A COSICN.K=(CAPEU.K*8.76/COSCRF.K)/(1-CTAXS)
 24870 A COSISN.K=TABHL(COSCST,COSICN.K,0,10000,500)
 24880 A COSMSNL.K=MAX(0,(CMCE.K-CAPEU.K)*8.76/COSCRFB.K)
 24890 A COSUS.K=COSPLS.K*MIN(COSMSNL.K,COSCAP.K,
 24900 X COSMF.K*COSICN.K+COSAS.K)
 24910 A COSICC.K=COSST.K
 24920 A COSICS.K=TABHL(COSCST,COSICC.K,0,10000,500)
 24930 A COSINC.K=COBO.K*COSPR.K*COSICS.K
 24940 A COSNIN.K=MAX(0,(COSINC.K-COSNC.K)/COSPPD.K)
 24950 A COSNIR.K=COSNRR.JK*CLIP(0,1,COSNC.K,COSINC.K)
 24960 R COSNCI.KL=COSNIN.K+COSNIR.K
 24970 R COSNRR.KL=VINTG(COSNCI.K,COSL,CHALT.K,COSNC.K,COSNRS.K,
 24980 X COSNCE)
 24990 A COSD.K=COSDNO.K*COSEWA.K-COSNC.K
 25000 A COSCONS.K=COSDNO.K-COSD.K
 25010 A COSACS.K=COSNC.K/(COBO.K*COSPR.K)
 25020 A COSTCC.K=TABHL(COSCCT,COSACS.K,0,1.9,.1)
 25030 A COSPC.K=MAX(0,(COSTCC.K-COSUC.K)*(1-CTAXS))
 25040 A COSTXC.K=(COSTCC.K-COSUC.K)*CTAXS
 25050 A COSUEN.K=COSUC.K*COSNIN.K
 25060 A COSPEN.K=COSPC.K*COSNIN.K

25070 A $COSTEN.K = COSTXC.K * COSNIN.K$
 25080 A $COSDUC.K = DLINF3(COSUC.K, COSSL)$
 25090 A $COSDPC.K = DLINF3(COSPC.K, COSSL)$
 25100 A $COSDTX.K = DLINF3(COSTXC.K, COSSL)$
 25110 A $COSUER.K = COSNIR.K * COSDUC.K * COSRMS.K$
 25120 A $COSPER.K = COSNIR.K * COSDPC.K + ((1 - COSRMS.K) * (1 - CTAXS)$
 25130 X $* COSNIR.K * COSDUC.K)$
 25140 A $COSTER.K = COSNIR.K * COSDTX.K + ((1 - COSRMS.K) * CTAXS$
 25150 X $* COSNIR.K * COSDUC.K)$
 25160 A $COSUE.K = (COSUEN.K + COSUER.K) * (1 + COSAC)$
 25170 A $COSPE.K = COSPEN.K + COSPER.K$
 25180 A $COSTE.K = COSTEN.K + COSTER.K$
 25190 NOTE
 25200 L $COSAUE.K = COSAUE.J + DT * COSAUEI.JK$
 25210 N $COSAUE = 0$
 25220 R $COSAUEI.KL = COSUE.K + COSIUC.K$
 25230 NOTE
 25240 L $COSTPE.K = COSTPE.J + DT * COSTPEI.JK$
 25250 N $COSTPE = 0$
 25260 R $COSTPEI.KL = COSPE.K$
 25270 A $COSICEO.K = CMCE.K * 8.76 / COSCRFB.K$
 25280 A $COSICSO.K = TABHL(COSCST, COSICEO.K, 0, 10000, 500)$
 25290 A $COSRNC.K = (COSAUE.K * COSCRFB.K) / (87.6 * COSCONS.K)$
 25300 NOTE
 25310 NOTE PAYBACK TIME OF CONSERVATION AND PARTICIPATION DELAY
 25320 NOTE
 25330 C $COSPMYSY = 3000$
 25340 C $COSFCPP = .2309$
 25350 C $COSNPDD = 15$
 25360 C $COSNPD1 = 15$
 25370 C $COSNPD2 = 22$
 25380 C $COSNPD3 = 5$
 25390 A $COSNPD.K = SWITCH(COSNPDD, 0, COSSPER.K) + SWITCH(COSNPD1, 0, COSSPER.K - 1)$
 25400 X $+ SWITCH(COSNPD2, 0, COSSPER.K - 2) + SWITCH(COSNPD3, 0, COSSPER.K - 3)$
 25410 C $COSNCPT = .025$
 25420 A $COSFMPP.K = CLIP(COSFCPP, 1, COSSPLS.K, .01)$
 25430 A $COSITPC.K = TABHL(COSTCCT, COSICS.K, 0, 2, .2) * COSFMPP.K$
 25440 A $COSCPT.K = COSITPC.K / ((COSICS.K - COSCSI) / COSRCRF.K * 8.76 * CAPEU.K)$
 25450 A $COSPD.M.K = TABHL(COSPD.MT, COSCPT.K / COSNCPT, 0, 8, .5)$
 25460 T $COSPD.MT = .33 / .7 / 1 / 1.17 / 1.33 / 1.43 / 1.5 / 1.6 / 1.69 /$
 25470 X $1.74 / 1.79 / 1.82 / 1.88 / 1.92 / 1.96 / 1.98 / 2.0$
 25480 A $COSIPPD.K = CLIP(COSNPD.K * COSPD.M.K, COSNPD.K, TIME.K, COSPMYSY)$
 25490 A $COSSPPD.K = CLIP(COSIPPD.K, COSSL, COSCPT.K, 0)$
 25500 NOTE
 25510 NOTE ENERGY SERVICE COST
 25520 NOTE
 25530 C $COSBEC = 5900$
 25540 A $COSRCRF.K = CDRL / (1 - 1 / (1 + CDRL) ^ COSSL)$
 25550 A $COSESC.K = (COSTPE.K + COSBEC) * COSRCRF.K + CAPEU.K * 8.76 * (COSBU - COSACS.K)$
 25560 NOTE
 25570 NOTE
 25580 NOTE NON-SUBSTITUTABLE
 25590 NOTE
 25600 T $CONCCT = 0 / 1405 / 1761 / 2044 / 2266 / 2443 / 2665 / 3141 / 3677 / 4333 / 5239 /$
 25610 X $6369 / 7499 / 8628 / 9758 / 16148$
 25620 T $CONCST = 0 / .0001 / .004 / .025 / .057 / .106 / .134 / .155 / .170 / .184 / .195 /$
 25630 X $.205 / .213 / .222 / .231 / .240 / .249 / .258 / .267 / .275 / .284$
 25640 T $CONTCCT = 0 / 86 / 207 / 366 / 601 / 1123 / 2620$
 25650 C $CONBU = .83$
 25660 C $CONAC = .11$
 25670 C $CONSL = 15$

25680 C CONSPD=15
 25690 A CONPR.K=TABHL(CONPRT,TIME.K,1984,2004,5)
 25700 T CONPRT=1.0/1.0/1.0/1.0/1.0
 25710 C CONEMA=1.0
 25720 NOTE
 25730 NOTE SUBSIDY PROGRAMS POLICY SECTION
 25740 NOTE
 25750 C CONSASD=0
 25760 C CONSAS1=2
 25770 C CONSAS2=0
 25780 C CONSAS3=5
 25790 A CONSAS.K=SWITCH(CONSASD,0,CONSPER.K)+SWITCH(CONSAS1,0,CONSPER.K-1)
 25800 X +SWITCH(CONSAS2,0,CONSPER.K-2)+SWITCH(CONSAS3,0,CONSPER.K-3)
 25810 C CONSTSD=2
 25820 C CONSTS1=2
 25830 C CONSTS2=2
 25840 C CONSTS3=2
 25850 A CONSTS.K=SWITCH(CONSTSD,0,CONSPER.K)+SWITCH(CONSTS1,0,CONSPER.K-1)
 25860 X +SWITCH(CONSTS2,0,CONSPER.K-2)+SWITCH(CONSTS3,0,CONSPER.K-3)
 25870 C CONCDSD=0
 25880 C CONCDS1=1
 25890 C CONCDS2=0
 25900 C CONCDS3=3
 25910 A CONCDS.K=SWITCH(CONCDS1,0,CONSPER.K)+SWITCH(CONCDS2,0,CONSPER.K-1)
 25920 X +SWITCH(CONCDS3,0,CONSPER.K-2)
 25930 C CONPKSD=0
 25940 C CONPKS1=0
 25950 C CONPKS2=0
 25960 C CONPKS3=0
 25970 A CONPKS.K=SWITCH(CONPKSD,0,CONSPER.K)+SWITCH(CONPKS1,0,CONSPER.K-1)
 25980 X +SWITCH(CONPKS2,0,CONSPER.K-2)+SWITCH(CONPKS3,0,CONSPER.K-3)
 25990 C CONSFSD=0
 26000 C CONSFS1=0
 26010 C CONSFS2=0
 26020 C CONSFS3=40
 26030 A CONSFS.K=SWITCH(CONSFSD,0,CONSPER.K)+SWITCH(CONSFS1,0,CONSPER.K-1)
 26040 X +SWITCH(CONSFS2,0,CONSPER.K-2)+SWITCH(CONSFS3,0,CONSPER.K-3)
 26050 C CONFMSD=0
 26060 C CONFMS1=1.2
 26070 C CONFMS2=0
 26080 C CONFMS3=0
 26090 A CONFMS.K=SWITCH(CONFMSD,0,CONSPER.K)+SWITCH(CONFMS1,0,CONSPER.K-1)
 26100 X +SWITCH(CONFMS2,0,CONSPER.K-2)+SWITCH(CONFMS3,0,CONSPER.K-3)
 26110 C CONFCD=0
 26120 C CONFCL=9.78
 26130 C CONFCL2=40
 26140 C CONFCL3=40
 26150 A CONFCL.K=SWITCH(CONFCD,0,CONSPER.K)+SWITCH(CONFCL1,0,CONSPER.K-1)
 26160 X +SWITCH(CONFCL2,0,CONSPER.K-2)+SWITCH(CONFCL3,0,CONSPER.K-3)
 26170 C CONCCI=38
 26180 C CONCSI=.0300
 26190 C CONDEL=100
 26200 C CONFPLD=0
 26210 C CONFPL1=0
 26220 C CONFPL2=0
 26230 C CONFPL3=0
 26240 A CONFPL.K=SWITCH(CONFPLD,0,CONSPER.K)+SWITCH(CONFPL1,0,CONSPER.K-1)
 26250 X +SWITCH(CONFPL2,0,CONSPER.K-2)+SWITCH(CONFPL3,0,CONSPER.K-3)
 26260 NOTE
 26270 A CONAS5.K=SWITCH(CONSFS.K,0,CONSAS.K-5)
 26280 A CONAS6.K=SWITCH(BPAVC.K,0,CONSAS.K-6)

26290 A CONAS7.K=SWITCH(MAX(0,BPAVC.K-CAPEU.K),0,CONSAS.K-7)
 26300 A CONAS.K=(CONAS5.K+CONAS6.K+CONAS7.K)*8.76/CONCRFB.K
 26310 NOTE
 26320 A CONMF.K=SWITCH(CONFMS.K,0,CONSAS.K-1)+SWITCH(CONFMS.K,0,CONSAS.K-2)
 26330 X +SWITCH(CONFMS.K,0,CONSAS.K-3)+SWITCH(CONFMS.K,0,CONSAS.K-4)
 26340 NOTE
 26350 A CONSC2.K=SWITCH(CONFC.K,1E6,CONSAS.K-2)
 26360 A CONSC3.K=SWITCH(BPAVC.K,1E6,CONSAS.K-3)
 26370 A CONSC4.K=SWITCH(MAX(0,BPAVC.K-CAPEU.K),1E6,CONSAS.K-4)
 26380 A CONSCAP.K=(MIN(CONSC2.K,CONSC3.K,CONSC4.K))*8.76/CONCRFB.K
 26390 NOTE
 26400 A CONSS.K=TABHL(CONCST,CONUS.K,0,10000,500)
 26410 A CONVA.K=(CONUS.K-CONCCI)*(CONSS.K-CONCSI)/2
 26420 A CONDLS.K=TABHL(CONCST,CONICN.K+CONUS.K+CONDEL,0,10000,500)
 26430 X -TABHL(CONCST,CONICN.K+CONUS.K,0,10000,500)
 26440 A CONSLP.K=CONDEL/(MAX(.01,CONDLS.K))
 26450 A CONVC.K=SQRT(MAX(2*CONSLP.K*CONVA.K,0))
 26460 A CONST.K=MAX(CONICN.K,CONPSC.K,SWITCH(CONUS.K,0,CONSTS.K-1)+
 26470 X SWITCH(CONUS.K+CONICN.K,0,CONSTS.K-2)+SWITCH(CONUS.K
 26480 X +CONVC.K,0,CONSTS.K-3))
 26490 NOTE
 26500 A CONUC1.K=SWITCH(MIN(CONMSNL.K,CONSCAP.K,CLIP(CONSPLS.K*
 26510 X CONMF.K*CONTC.C.K/(1+CONMF.K),0,CONTC.C.K,CONPSL.K)),0,CONCDS.K-1)
 26520 A CONUC2.K=SWITCH(MIN(CONMSNL.K,CONSCAP.K,CLIP(CONAS.K,0,CONTC.C.K,
 26530 X CONPSL.K)),0,CONCDS.K-2)
 26540 A CONUC3.K=SWITCH(MIN(CONMSNL.K,CONSCAP.K,CLIP(CONTC.C.K,0,CONTC.C.K,
 26550 X CONPSL.K)),0,CONCDS.K-3)
 26560 A CONUC4.K=SWITCH(MIN(CONMSNL.K,CONSCAP.K,CLIP(MIN(CONTC.C.K,CONAS.K),
 26570 X 0,CONTC.C.K,CONPSL.K)),0,CONCDS.K-4)
 26580 A CONUC5.K=SWITCH(MIN(CONMSNL.K,CONSCAP.K,CLIP(CONTC.C.K-CONPSL.K,
 26590 X 0,CONTC.C.K,CONPSL.K)),0,CONCDS.K-5)
 26600 A CONUC.K=CONSPLS.K*(CONUC1.K+CONUC2.K+CONUC3.K+CONUC4.K+CONUC5.K)
 26610 NOTE
 26620 A CONPS1.K=SWITCH(CONFPL.K*8.76/CONCRFB.K,0,CONPKS.K-1)
 26630 A CONPS2.K=SWITCH(CONICN.K,0,CONPKS.K-2)
 26640 A CONPSL.K=CONPS1.K+CONPS2.K
 26650 NOTE
 26660 A CONSRI.K=TABHL(CONTCCT,CONCSI,0,.3,.05)
 26670 A CONSRN.K=TABHL(CONTCCT,CONISN.K,0,.3,.05)
 26680 A CONSRC.K=TABHL(CONTCCT,CONICS.K,0,.3,.05)
 26690 A CONSRM.K=(CONSRN.K-CONSRI.K)/(CONSRC.K-CONSRI.K)
 26700 A CONSR.S.K=(CONISN.K-CONCSI)/(CONICS.K-CONCSI)
 26710 NOTE
 26720 C CONSP1Y=1984
 26730 C CONSP2Y=1988
 26740 C CONSP3Y=3000
 26750 A CONSP1S.K=CLIP(1,0,TIME.K,CONSP1Y)
 26760 A CONSP2S.K=CONSP1S.K*CLIP(1,0,TIME.K,CONSP2Y)
 26770 A CONSP3S.K=CONSP2S.K*CLIP(1,0,TIME.K,CONSP3Y)
 26780 A CONSPER.K=CONSP1S.K+CONSP2S.K+CONSP3S.K
 26790 C CONRMSY=1984
 26800 C CONRMCY=3000
 26810 A CONRMS.K=CLIP(1,0,TIME.K,CONRMSY)*CLIP(1,0,CONRMCY,TIME.K)
 26820 NOTE
 26830 NOTE PERFORMANCE STANDARDS POLICY SECTION
 26840 NOTE
 26850 C CONPSSY=3000
 26860 C CONPSCY=3000
 26870 A CONPSS.K=CLIP(1,0,TIME.K,CONPSSY)*CLIP(1,0,CONPSCY,TIME.K)
 26880 C CONPS=0.0
 26890 A CONPSC.K=TABHL(CONCCT,(CONBU-CONPS),0,.3,.02)*CONPSS.K

26900 NOTE
 26910 NOTE INFORMATION PROGRAMS POLICY SECTION
 26920 NOTE
 26930 C $CONIMP=.5$
 26940 C $CONIPSY=3000$
 26950 C $CONIPCY=3000$
 26960 A $CONIPS.K=CLIP(1,0,TIME.K,CONIPSY)*CLIP(1,0,CONIPCY,TIME.K)$
 26970 C $CONIUPR=.35$
 26980 C $CONIPD=2$
 26990 C $CONICPP=200$
 27000 A $CONIPP.K=COBO.K*CONPR.K*CONIPS.K*CONIUPR$
 27010 A $CONIAP.K=MIN(DLINF1(CONIPP.K,CONIPD),CONIPP.K)$
 27020 N $CONIPP=0$
 27030 A $CONIAPR.K=CONIAP.K/(COBO.K*CONPR.K)$
 27040 A $CONIUC.K=(CONIPP.K-CONIAP.K)*CONICPP*(1+CONAC)/CONIPD$
 27050 A $CONIPR.K=CIPDRB.K*CONIMP$
 27060 A $CONIWR.K=((1-CONIAPR.K)*CIPDRB.K)+(CONIAPR.K*CONIPR.K)$
 27070 A $CONIDB.K=CLIP(CIPDRB.K,CONIWR.K,CONIPSY,TIME.K)$
 27080 NOTE
 27090 NOTE MAINLINE STRUCTURE
 27100 NOTE
 27110 C $CONNCB=.00572$
 27120 NOTE
 27130 NOTE
 27140 NOTE
 27150 A $CONBWA.K=(1-CIPAPR.K)+(CIPAPR.K*CONBMA)$
 27160 A $CONDNO.K=COBO.K*CONPR.K*CONBU$
 27170 A $CONDR.K=CONIDB.K+CDRL$
 27180 A $CONCRF.K=CONDR.K/(1-1/(1+CONDR.K)^{CONSL})$
 27190 A $CONCRFB.K=BPADR/(1-1/(1+BPADR)^{CONSL})$
 27200 A $CONICN.K=(CAPEU.K*8.76/CONCRF.K)/(1-CTAXS)$
 27210 A $CONISN.K=TABHL(CONCST,CONICN.K,0,10000,500)$
 27220 A $CONMSNL.K=MAX(0,(CMCE.K-CAPEU.K)*8.76/CONCRFB.K)$
 27230 A $CONUS.K=CONSPLS.K*MIN(CONMSNL.K,CONSCAP.K,$
 27240 X $CONMF.K*CONICN.K+CONAS.K)$
 27250 A $CONICC.K=CONST.K$
 27260 A $CONICS.K=TABHL(CONCST,CONICC.K,0,10000,500)$
 27270 A $CONINC.K=COBO.K*CONPR.K*CONICS.K$
 27280 A $CONNIN.K=MAX(0,(CONINC.K-CONNK.K)/CONSPPD)$
 27290 A $CONNIR.K=CONNRR.JK*CLIP(0,1,CONNK.K,CONNINC.K)$
 27300 R $CONNCI.KL=CONNIN.K+CONNIR.K$
 27310 R $CONNRR.KL=VINIG(CONNCI.KJ,CONSL,CHALT.K,CONNK.K,CONNRS.K,$
 27320 X $CONNCB)$
 27330 A $COND.K=CONDNO.K*CONBWA.K-CONNK.K$
 27340 A $CONCONS.K=CONDNO.K-COND.K$
 27350 A $CONACS.K=CONNK.K/(COBO.K*CONPR.K)$
 27360 A $CONICC.K=TABHL(CONCCT,CONACS.K,0,.3,.02)$
 27370 A $CONPC.K=(CONICC.K-CONUC.K)*(1-CTAXS)$
 27380 A $CONTXC.K=(CONICC.K-CONUC.K)*CTAXS$
 27390 A $CONUEN.K=CONUC.K*CONNIN.K$
 27400 A $CONPEN.K=CONPC.K*CONNIN.K$
 27410 A $CONTEN.K=CONTXC.K*CONNIN.K$
 27420 A $CONDUC.K=DLINF3(CONUC.K,CONSL)$
 27430 A $CONDPC.K=DLINF3(CONPC.K,CONSL)$
 27440 A $CONDTX.K=DLINF3(CONTXC.K,CONSL)$
 27450 A $CONUER.K=CONNIR.K*CONDUC.K*CONRMS.K$
 27460 A $CONPER.K=CONNIR.K*CONDPC.K+((1-CONRMS.K)*(1-CTAXS)$
 27470 X $*CONNIR.K*CONDUC.K)$
 27480 A $CONTER.K=CONNIR.K*CONDTX.K+((1-CONRMS.K)*CTAXS$
 27490 X $*CONNIR.K*CONDUC.K)$
 27500 A $CONUE.K=(CONUEN.K+CONUER.K)*(1+CONAC)$

27510 A $CONPE.K = CONPEN.K + CONPER.K$
 27520 A $CONTE.K = CONTEN.K + CONTER.K$
 27530 NOTE
 27540 L $CONAUE.K = CONAUE.J + DT * CONAJEI.JK$
 27550 N $CONAUE = 0$
 27560 R $CONAJEI.KL = CONUE.K + CONIUC.K$
 27570 NOTE
 27580 A $CONICEO.K = CMCE.K * 8.76 / CONCRFB.K$
 27590 A $CONICSO.K = TABHL(CONCST, CONICEO.K, 0, 10000, 500)$
 27600 A $CONRNC.K = (CONAUE.K * CONCRFB.K) / (87.6 * CONCONS.K)$
 27610 NOTE
 27620 NOTE COMMERCIAL SECTOR - NEW BUILDINGS
 27630 NOTE SUBSTITUTABLE
 27640 NOTE
 27650 T $CNSOCT = 0 / 233 / 508 / 1250 / 2200 / 5273 / 8317 / 16622 / 19666 / 22710 /$
 27660 X $25754 / 28798 / 31843 / 34887 / 37931 / 40975$
 27670 T $CNSCST = 0 / .040 / .056 / .066 / .076 / .084 / .089 / .094 / .097 / .099 /$
 27680 X $.099 / .101 / .105 / .108 / .111 / .115 / .118 / .121 / .124 / .128 / .131$
 27690 T $CNSTOCT = 0 / 27 / 150 / 1034 / 1557 / 2080 / 2602$
 27700 C $CNSBU = 1.823$
 27710 C $CNSAC = .11$
 27720 C $CNSSL = 30$
 27730 A $CNSPR.K = TABHL(CNSPRT, TIME.K, 1984, 2004, 5)$
 27740 T $CNSPRT = .690 / .692 / .628 / .691 / .648$
 27750 C $CNSBMA = 1.0$
 27760 NOTE
 27770 NOTE SUBSIDY PROGRAMS POLICY SECTION
 27780 NOTE
 27790 C $CNSSAS = 1$
 27800 C $CNSSTS = 2$
 27810 C $CNSCDS = 1$
 27820 C $CNSPKGS = 2$
 27830 C $CNSSFS = 0$
 27840 C $CNSFCMS = 3$
 27850 C $CNSFC = 1E6$
 27860 C $CNSCCI = 0$
 27870 C $CNSCSI = 0$
 27880 C $CNSDELC = 100$
 27890 C $CNSFPSL = 0$
 27900 NOTE
 27910 A $CNSAS5.K = SWITCH(CNSSFS, 0, CNSSAS-5)$
 27920 A $CNSAS6.K = SWITCH(BPAAVC.K, 0, CNSSAS-6)$
 27930 A $CNSAS7.K = SWITCH(MAX(0, BPAAVC.K - CAPEU.K), 0, CNSSAS-7)$
 27940 A $CNSAS.K = (CNSAS5.K + CNSAS6.K + CNSAS7.K) * 8.76 / CONCRFB.K$
 27950 NOTE
 27960 A $CNSMF.K = SWITCH(CNSFCMS, 0, CNSSAS-1) + SWITCH(CNSFCMS, 0, CNSSAS-2)$
 27970 X $+ SWITCH(CNSFCMS, 0, CNSSAS-3) + SWITCH(CNSFCMS, 0, CNSSAS-4)$
 27980 NOTE
 27990 A $CNSSC2.K = SWITCH(CNSFC, 1E6, CNSSAS-2)$
 28000 A $CNSSC3.K = SWITCH(BPAAVC.K, 1E6, CNSSAS-3)$
 28010 A $CNSSC4.K = SWITCH(MAX(0, BPAAVC.K - CAPEU.K), 1E6, CNSSAS-4)$
 28020 A $CNSSCAP.K = (MIN(CNSSC2.K, CNSSC3.K, CNSSC4.K)) * 8.76 / CONCRFB.K$
 28030 NOTE
 28040 A $CNSSS.K = TABHL(CNSCST, CNSUS.K, 0, 10000, 500)$
 28050 A $CNSVA.K = (CNSUS.K - CNSCCI) * (CNSSS.K - CNSCSI) / 2$
 28060 A $CNSDLS.K = TABHL(CNSCST, CNSICN.K + CNSUS.K + CNSDELC, 0, 10000, 500)$
 28070 X $- TABHL(CNSCST, CNSICN.K + CNSUS.K, 0, 10000, 500)$
 28080 A $CNSSLP.K = CNSDELC / (MAX(.01, CNSDLS.K))$
 28090 A $CNSVC.K = SQRT(MAX(2 * CNSSLP.K * CNSVA.K, 0))$
 28100 A $CNSST.K = MAX(CNSICN.K, CNSPSC.K, SWITCH(CNSUS.K, 0, CNSSTS-1) +$
 28110 X $SWITCH(CNSUS.K + CNSICN.K, 0, CNSSTS-2) + SWITCH(CNSUS.K$

28120 X +CNSVC.K,0,CNSSTS-3))
 28130 NOTE
 28140 NOTE
 28150 A $CNSCSP.K = TABHL(CNSCST, (CNSFCMS / (1 + CNSFCMS)) *$
 28160 X $CNSSCAP.K, 0, 10000, 500)$
 28170 A $CNSUUC1.K = ((TABHL(CNSTCCT, MIN(CNSICS.K, CNSCSP.K), 0, .3, .05) -$
 28180 X $TABHL(CNSTCCT, CNPSLS.K, 0, .3, .05)) * (CNSFCMS / (1 + CNSFCMS))) +$
 28190 X $MAX(0, CNSICS.K - CNSCSP.K) * CNSSCAP.K$
 28200 A $CNSUC1.K = SWITCH(MIN(CNSMSNL.K, CNSSCAP.K, CNSUUC1.K / CNSICS.K),$
 28210 X $0, CNSCDS-1)$
 28220 NOTE
 28230 NOTE ADDITIVE SHARE, FLAT RATE
 28240 NOTE
 28250 A $CNSUUC2.K = CNSAS.K * MAX(0, CNSICS.K - TABHL(CNSCST, CNPSC.K,$
 28260 X $0, 10000, 500))$
 28270 A $CNSUC2.K = SWITCH(MIN(CNSMSNL.K, CNSSCAP.K, CNSUUC2.K / CNSICS.K),$
 28280 X $0, CNSCDS-2)$
 28290 NOTE
 28300 NOTE ADDITIVE SHARE, TOTAL COST
 28310 NOTE
 28320 A $CNSUUC3.K = MAX(0, TABHL(CNSTCCT, TABHL(CNSCST, CNSAS.K, 0, 10000, 500),$
 28330 X $0, .3, .05) - TABHL(CNSTCCT, TABHL(CNSCST, CNPSC.K, 0, 10000, 500),$
 28340 X $0, .3, .05))$
 28350 A $CNSUC3.K = SWITCH(MIN(CNSMSNL.K, CNSSCAP.K, CNSUUC3.K / CNSICS.K),$
 28360 X $0, CNSCDS-3)$
 28370 NOTE
 28380 NOTE ADDITIVE SHARE, TOTAL COST TO CAP
 28390 NOTE
 28400 A $CNSUC4.K = 0$
 28410 NOTE
 28420 NOTE ADDITIVE SHARE, COST SHARING, FIXED PARTICIPANT COST
 28430 NOTE
 28440 A $CNSUUC5.K = MAX(0, TABHL(CNSTCCT, TABHL(CNSCST, CNSAS.K, 0, 10000, 500),$
 28450 X $0, .3, .05) - TABHL(CNSTCCT, TABHL(CNSCST, CNPSL.K, 0, 10000, 500),$
 28460 X $0, .3, .05)) - CNPSL.K * MAX(0, CNSICS.K - TABHL(CNSCST, CNPSL.K,$
 28470 X $0, 10000, 500))$
 28480 A $CNSUC5.K = SWITCH(MIN(CNSMSNL.K, CNSSCAP.K, CNSUUC5.K / CNSICS.K),$
 28490 X $0, CNSCDS-5)$
 28500 NOTE
 28510 A $CNSUC.K = CNSSPS.K * (CNSUC1.K + CNSUC2.K + CNSUC3.K + CNSUC4.K + CNSUC5.K)$
 28520 NOTE
 28530 A $CNSPS1.K = SWITCH(CNSFPSL * 8.76 / CNSCRFB.K, 0, CNPKGS-1)$
 28540 A $CNSPS2.K = SWITCH(CNSICN.K, 0, CNPKGS-2)$
 28550 A $CNSPSL.K = CNSPS1.K + CNSPS2.K$
 28560 A $CNSPSLS.K = TABHL(CNSCST, CNPSL.K, 0, 10000, 500)$
 28570 NOTE
 28580 C $CNSSPSY = 1988$
 28590 C $CNSSPCY = 3000$
 28600 A $CNSSPS.K = CLIP(1, 0, TIME.K, CNSSPSY) * CLIP(1, 0, CNSSPCY, TIME.K)$
 28610 C $CNSRSSY = 3000$
 28620 C $CNSRSCY = 3000$
 28630 A $CNSRSS.K = CLIP(1, 0, TIME.K, CNSRSSY) * CLIP(1, 0, CNSRSCY, TIME.K)$
 28640 C $CNSRMSY = 3000$
 28650 C $CNSRMCY = 3000$
 28660 A $CNSRMS.K = CLIP(1, 0, TIME.K, CNSRMSY) * CLIP(1, 0, CNSRMCY, TIME.K)$
 28670 NOTE
 28680 NOTE PERFORMANCE STANDARDS POLICY SECTION
 28690 NOTE
 28700 C $CNSPP1Y = 3000$
 28710 C $CNSPP2Y = 3000$
 28720 C $CNSPP3Y = 3000$

28730 A CNSPP1S.K=CLIP(1,0,TIME.K,CNSPP1Y)
 28740 A CNSPP2S.K=CNSPP1S.K*CLIP(1,0,TIME.K,CNSPP2Y)
 28750 A CNSPP3S.K=CNSPP2S.K*CLIP(1,0,TIME.K,CNSPP3Y)
 28760 A CNSPPER.K=CNSPP1S.K+CNSPP2S.K+CNSPP3S.K
 28770 NOTE
 28780 C CNSPCFD=0
 28790 C CNSPCF1=.3
 28800 C CNSPCF2=.8
 28810 C CNSPCF3=1
 28820 A CNSPCF.K=SWITCH(CNSPCFD,0,CNSPPER.K)+SWITCH(CNSPCF1,0,CNSPPER.K-1)
 28830 X +SWITCH(CNSPCF2,0,CNSPPER.K-2)+SWITCH(CNSPCF3,0,CNSPPER.K-3)
 28840 NOTE
 28850 A CNSPS.K=TABHL(CNSPST,TIME.K-CNSASDT,1984,2004,20)
 28860 T CNSPST=1.545/1.545
 28870 NOTE
 28880 A CNSPSC.K=TABHL(CNSCCT,(CNSBU-CNSPS.K)*CNSPCF.K,0,.3,.02)
 28890 C CNSASDT=0
 28900 NOTE
 28910 NOTE INFORMATION PROGRAMS POLICY SECTION
 28920 NOTE
 28930 C CNSIMP=.5
 28940 C CNSIPSY=3000
 28950 C CNSIPCY=3000
 28960 A CNSIPS.K=CLIP(1,0,TIME.K,CNSIPSY)*CLIP(1,0,CNSIPCY,TIME.K)
 28970 C CNSIUPR=.35
 28980 C CNSIPD=2
 28990 C CNSICPP=200
 29000 A CNSIPP.K=CNBO.K*CNSPR.K*CNSIPS.K*CNSIUPR
 29010 A CNSIAP.K=MIN(DLINFL(CNSIPP.K,CNSIPD),CNSIPP.K)
 29020 N CNSIPP=0
 29030 A CNSIAPR.K=CNSIAP.K/(CNBO.K*CNSPR.K)
 29040 A CNSIUC.K=(CNSIPP.K-CNSIAP.K)*CNSICPP*(1+CNSAC)/CNSIPD
 29050 A CNSIPR.K=CIPDRB.K*CNSIMP
 29060 A CNSIWR.K=((1-CNSIAPR.K)*CIPDRB.K)+(CNSIAPR.K*CNSIPR.K)
 29070 A CNSIDB.K=CLIP(CIPDRB.K,CNSIWR.K,CNSIPSY,TIME.K)
 29080 NOTE
 29090 NOTE MAINLINE STRUCTURE
 29100 NOTE
 29110 A CNSEWA.K=(1-CIPAPR.K)+(CIPAPR.K*CNSBMA)
 29120 A CNSDNO.K=CNBO.K*CNSPR.K*CNSBU
 29130 A CNSDR.K=CNSIDB.K+CDRL
 29140 A CNSCRF.K=CNSDR.K/(1-1/(1+CNSDR.K)^CNSSSL)
 29150 A CNSCRFB.K=BPADR/(1-1/(1+BPADR)^CNSSSL)
 29160 A CNSICN.K=(CAPEU.K*8.76/CNSCRF.K)/(1-CTAXS)
 29170 A CNSISN.K=TABHL(CNSCST,CNSICN.K,0,10000,500)
 29180 A CNSSRF.K=1-CNSRSS.K*TABHL(CNSRFT,CNSACS.K/CNSISN.K,.6,1.4,.1)
 29190 T CNSRFT=1/.9/.8/.65/.5/.35/.2/.1/0
 29200 A CNSMSNL.K=MAX(0,(CMCE.K-CAPEU.K)*8.76/CNSCRFB.K)
 29210 A CNSUS.K=CNSSRF.K*CNSSPS.K*MIN(CNSMSNL.K,CNSSCAP.K,
 29220 X CNSMF.K*CNSICN.K+CNSAS.K)
 29230 A CNSICC.K=CNSST.K
 29240 A CNSICS.K=TABHL(CNSCST,CNSICC.K,0,10000,500)
 29250 A CNSNIN.K=CNBS.K*CNSICS.K
 29260 A CNSNIR.K=(CNSNC.K/CNSSSL)*CLIP(0,1,CNSACS.K,CNSICS.K)
 29270 R CNSNCI.KL=CNSNIN.K+CNSNIR.K
 29280 N CNSNCI=0
 29290 R CNSNRR.KL=DELAY3P(CNSNCI.K,CNSSSL,CNSNC.K)
 29300 A CNSD.K=CNSDNO.K*CNSEWA.K-(CNSNC.K*CNSPR.K)
 29310 A CNSCONS.K=CNSDNO.K-CNSD.K
 29320 A CNSACS.K=(CNSNC.K*CNSPR.K)/(CNBO.K*CNSPR.K)
 29330 A CNSTCC.K=TABHL(CNSCCT,CNSACS.K,0,.3,.02)

29340 A $CNSPC.K = \text{MAX}(0, (\text{TABHL}(\text{CNSTOCT}, \text{CNSICS.K}, 0, .3, .05) / \text{CNSICS.K} -$
 29350 X $\text{CNSUC.K}) * (1 - \text{CTAXS}))$
 29360 A $\text{CNSTXC.K} = \text{MAX}(0, (\text{TABHL}(\text{CNSTOCT}, \text{CNSICS.K}, 0, .3, .05) / \text{CNSICS.K} -$
 29370 X $\text{CNSUC.K}) * \text{CTAXS})$
 29380 A $\text{CNSUEN.K} = \text{CNSPR.K} * \text{CNSUC.K} * \text{CNSNIN.K}$
 29390 A $\text{CNSPEN.K} = \text{CNSPR.K} * \text{CNSPC.K} * \text{CNSNIN.K}$
 29400 A $\text{CNSTEN.K} = \text{CNSPR.K} * \text{CNSTXC.K} * \text{CNSNIN.K}$
 29410 A $\text{CNSDUC.K} = \text{DLINF3}(\text{CNSUC.K}, \text{CNSSL})$
 29420 A $\text{CNSDPC.K} = \text{DLINF3}(\text{CNSPC.K}, \text{CNSSL})$
 29430 A $\text{CNSTDIX.K} = \text{DLINF3}(\text{CNSTXC.K}, \text{CNSSL})$
 29440 A $\text{CNSUER.K} = \text{CNSPR.K} * \text{CNSNIR.K} * \text{CNSDUC.K} * \text{CNSRMS.K}$
 29450 A $\text{CNSPER.K} = (\text{CNSNIR.K} * \text{CNSDPC.K} + ((1 - \text{CNSRMS.K}) * (1 - \text{CTAXS}))$
 29460 X $* \text{CNSNIR.K} * \text{CNSDUC.K})) * \text{CNSPR.K}$
 29470 A $\text{CNSTER.K} = (\text{CNSNIR.K} * \text{CNSTDIX.K} + ((1 - \text{CNSRMS.K}) * \text{CTAXS}$
 29480 X $* \text{CNSNIR.K} * \text{CNSDUC.K})) * \text{CNSPR.K}$
 29490 A $\text{CNSUE.K} = (\text{CNSUEN.K} + \text{CNSUER.K}) * (1 + \text{CNSAC})$
 29500 A $\text{CNSPE.K} = \text{CNSPEN.K} + \text{CNSPER.K}$
 29510 A $\text{CNSTE.K} = \text{CNSTEN.K} + \text{CNSTER.K}$
 29520 NOTE
 29530 L $\text{CNSAUE.K} = \text{CNSAUE.J} + \text{DT} * \text{CNSAUEI.JK}$
 29540 N $\text{CNSAUE} = 0$
 29550 R $\text{CNSAUEI.KL} = \text{CNSUE.K} + \text{CNSIUC.K}$
 29560 NOTE
 29570 A $\text{CNSICEO.K} = \text{CMCE.K} * 8.76 / \text{CNSCRFB.K}$
 29580 A $\text{CNSICSO.K} = \text{TABHL}(\text{CNSCST}, \text{CNSICEO.K}, 0, 10000, 500)$
 29590 A $\text{CNSRNC.K} = (\text{CNSAUE.K} * \text{CNSCRFB.K}) / (87.6 * \text{MAX}(.01, \text{CNSCONS.K}))$
 29600 NOTE
 29610 NOTE NON-SUBSTITUTABLE
 29620 NOTE
 29630 T $\text{CNNCCT} = 0/1530/1787/2111/2440/3566/5188/23338/36280/$
 29640 X $49221/49221/49221/49221/49221/49221$
 29650 T $\text{CNNCST} = 0/.0001/.001/.018/.053/.084/.094/.099/.107/.113/$
 29660 X $.118/.121/.121/.122/.123/.124/.124/.125/.126/.127/.128$
 29670 T $\text{CNNTCCT} = 0/92/226/718/1241/1764/2287$
 29680 C $\text{CNNBU} = .665$
 29690 C $\text{CNNAC} = .11$
 29700 C $\text{CNNSL} = 15$
 29710 A $\text{CNNPR.K} = \text{TABHL}(\text{CNNPRT}, \text{TIME.K}, 1984, 2004, 5)$
 29720 T $\text{CNNPRT} = 1.0/1.0/1.0/1.0/1.0$
 29730 C $\text{CNNBMA} = 1.0$
 29740 NOTE
 29750 NOTE SUBSIDY PROGRAMS POLICY SECTION
 29760 NOTE
 29770 C $\text{CNSASD} = 0$
 29780 C $\text{CNSAS1} = 1$
 29790 C $\text{CNSAS2} = 1$
 29800 C $\text{CNSAS3} = 5$
 29810 A $\text{CNSAS.K} = \text{SWITCH}(\text{CNSASD}, 0, \text{CNSPER.K}) + \text{SWITCH}(\text{CNSAS1}, 0, \text{CNSPER.K} - 1)$
 29820 X $+ \text{SWITCH}(\text{CNSAS2}, 0, \text{CNSPER.K} - 2) + \text{SWITCH}(\text{CNSAS3}, 0, \text{CNSPER.K} - 3)$
 29830 C $\text{CNNSTD} = 2$
 29840 C $\text{CNNSTS1} = 2$
 29850 C $\text{CNNSTS2} = 2$
 29860 C $\text{CNNSTS3} = 2$
 29870 A $\text{CNNSTS.K} = \text{SWITCH}(\text{CNNSTD}, 0, \text{CNSPER.K}) + \text{SWITCH}(\text{CNNSTS1}, 0, \text{CNSPER.K} - 1)$
 29880 X $+ \text{SWITCH}(\text{CNNSTS2}, 0, \text{CNSPER.K} - 2) + \text{SWITCH}(\text{CNNSTS3}, 0, \text{CNSPER.K} - 3)$
 29890 C $\text{CNNCDS} = 0$
 29900 C $\text{CNNCDS1} = 1$
 29910 C $\text{CNNCDS2} = 1$
 29920 C $\text{CNNCDS3} = 3$
 29930 A $\text{CNNCDS.K} = \text{SWITCH}(\text{CNNCDS}, 0, \text{CNSPER.K}) + \text{SWITCH}(\text{CNNCDS1}, 0, \text{CNSPER.K} - 1)$
 29940 X $+ \text{SWITCH}(\text{CNNCDS2}, 0, \text{CNSPER.K} - 2) + \text{SWITCH}(\text{CNNCDS3}, 0, \text{CNSPER.K} - 3)$

29950 C CNNPKSD=0
 29960 C CNNPKS1=2
 29970 C CNNPKS2=0
 29980 C CNNPKS3=0
 29990 A $CNNPKS.K = SWITCH(CNNPKSD, 0, CNNSPER.K) + SWITCH(CNNPKS1, 0, CNNSPER.K-1)$
 30000 X $+SWITCH(CNNPKS2, 0, CNNSPER.K-2) + SWITCH(CNNPKS3, 0, CNNSPER.K-3)$
 30010 C CNNSFSD=0
 30020 C CNNSFS1=0
 30030 C CNNSFS2=0
 30040 C CNNSFS3=40
 30050 A $CNNSFS.K = SWITCH(CNNSFSD, 0, CNNSPER.K) + SWITCH(CNNSFS1, 0, CNNSPER.K-1)$
 30060 X $+SWITCH(CNNSFS2, 0, CNNSPER.K-2) + SWITCH(CNNSFS3, 0, CNNSPER.K-3)$
 30070 C CNNFMSD=0
 30080 C CNNFMS1=3
 30090 C CNNFMS2=1
 30100 C CNNFMS3=0
 30110 A $CNNFMS.K = SWITCH(CNNFMSD, 0, CNNSPER.K) + SWITCH(CNNFMS1, 0, CNNSPER.K-1)$
 30120 X $+SWITCH(CNNFMS2, 0, CNNSPER.K-2) + SWITCH(CNNFMS3, 0, CNNSPER.K-3)$
 30130 C CNNFCD=0
 30140 C CNNFC1=0
 30150 C CNNFC2=40
 30160 C CNNFC3=40
 30170 A $CNNFC.K = SWITCH(CNNFCD, 0, CNNSPER.K) + SWITCH(CNNFC1, 0, CNNSPER.K-1)$
 30180 X $+SWITCH(CNNFC2, 0, CNNSPER.K-2) + SWITCH(CNNFC3, 0, CNNSPER.K-3)$
 30190 C CNNCCI=0
 30200 C CNNCSI=0
 30210 C CNNDCLC=100
 30220 C CNNFPLD=0
 30230 C CNNFPL1=0
 30240 C CNNFPL2=0
 30250 C CNNFPL3=0
 30260 A $CNNFPL.K = SWITCH(CNNFPLD, 0, CNNSPER.K) + SWITCH(CNNFPL1, 0, CNNSPER.K-1)$
 30270 X $+SWITCH(CNNFPL2, 0, CNNSPER.K-2) + SWITCH(CNNFPL3, 0, CNNSPER.K-3)$
 30280 NOTE
 30290 A $CNNAS5.K = SWITCH(CNNSFS.K, 0, CNNSAS.K-5)$
 30300 A $CNNAS6.K = SWITCH(BPAAVC.K, 0, CNNSAS.K-6)$
 30310 A $CNNAS7.K = SWITCH(MAX(0, BPAAVC.K - CAPEU.K), 0, CNNSAS.K-7)$
 30320 A $CNNAS.K = (CNNAS5.K + CNNAS6.K + CNNAS7.K) * 8.76 / CNNCRFB.K$
 30330 NOTE
 30340 A $CNNMF.K = SWITCH(CNNFMS.K, 0, CNNSAS.K-1) + SWITCH(CNNFMS.K, 0, CNNSAS.K-2)$
 30350 X $+SWITCH(CNNFMS.K, 0, CNNSAS.K-3) + SWITCH(CNNFMS.K, 0, CNNSAS.K-4)$
 30360 NOTE
 30370 A $CNNSC2.K = SWITCH(CNNFC.K, LE6, CNNSAS.K-2)$
 30380 A $CNNSC3.K = SWITCH(BPAAVC.K, LE6, CNNSAS.K-3)$
 30390 A $CNNSC4.K = SWITCH(MAX(0, BPAAVC.K - CAPEU.K), LE6, CNNSAS.K-4)$
 30400 A $CNNSCAP.K = (MIN(CNNSC2.K, CNNSC3.K, CNNSC4.K)) * 8.76 / CNNCRFB.K$
 30410 NOTE
 30420 A $CNNSS.K = TABHL(CNNCST, CNNUS.K, 0, 10000, 500)$
 30430 A $CNNVA.K = (CNNUS.K - CNNCCI) * (CNNSS.K - CNNCSI) / 2$
 30440 A $CNNDL.S.K = TABHL(CNNCST, CNNICN.K + CNNUS.K + CNNDCLC, 0, 10000, 500)$
 30450 X $-TABHL(CNNCST, CNNICN.K + CNNUS.K, 0, 10000, 500)$
 30460 A $CNNSLP.K = CNNDCLC / (MAX(.01, CNNDL.S.K))$
 30470 A $CNNVC.K = SQRT(MAX(2 * CNNSLP.K * CNNVA.K, 0))$
 30480 A $CNNST.K = MAX(CNNICN.K, CNNPSC.K, SWITCH(CNNUS.K, 0, CNNSTS.K-1) +$
 30490 X $SWITCH(CNNUS.K + CNNICN.K, 0, CNNSTS.K-2) + SWITCH(CNNUS.K$
 30500 X $+CNNVC.K, 0, CNNSTS.K-3))$
 30510 NOTE
 30520 NOTE
 30530 A $CNNCSP.K = TABHL(CNNCST, (CNNFMS.K / (1 + CNNFMS.K)) *$
 30540 X $CNNSCAP.K, 0, 10000, 500)$
 30550 A $CNNUUC1.K = (TABHL(CNNICCT, MIN(CNNICS.K, CNNCSP.K), 0, .3, .05) -$

30560 X $TABHL(CNNTOCT, CNNPSLS.K, 0, .3, .05)) * (CNNFMS.K / (1 + CNNFMS.K)) +$
 30570 X $MAX(0, CNNICS.K - CNNCSP.K) * CNNSCAP.K$
 30580 A $CNNUC1.K = SWITCH(MIN(CNNMSNL.K, CNNSCAP.K, CNNUC1.K / CNNICS.K),$
 30590 X $0, CNNCDS.K - 1)$
 30600 NOTE
 30610 NOTE ADDITIVE SHARE, FLAT RATE
 30620 NOTE
 30630 A $CNNUC2.K = CNNAS.K * MAX(0, CNNICS.K - TABHL(CNNCST, CNNPSC.K,$
 30640 X $0, 10000, 500))$
 30650 A $CNNUC2.K = SWITCH(MIN(CNNMSNL.K, CNNSCAP.K, CNNUC2.K / CNNICS.K),$
 30660 X $0, CNNCDS.K - 2)$
 30670 NOTE
 30680 NOTE ADDITIVE SHARE, TOTAL COST
 30690 NOTE
 30700 A $CNNUC3.K = MAX(0, TABHL(CNNTOCT, TABHL(CNNCST, CNNAS.K, 0, 10000, 500),$
 30710 X $0, .3, .05) - TABHL(CNNTOCT, TABHL(CNNCST, CNNPSC.K, 0, 10000, 500),$
 30720 X $0, .3, .05))$
 30730 A $CNNUC3.K = SWITCH(MIN(CNNMSNL.K, CNNSCAP.K, CNNUC3.K / CNNICS.K),$
 30740 X $0, CNNCDS.K - 3)$
 30750 NOTE
 30760 NOTE ADDITIVE SHARE, TOTAL COST TO CAP
 30770 NOTE
 30780 A $CNNUC4.K = 0$
 30790 NOTE
 30800 NOTE ADDITIVE SHARE, COST SHARING, FIXED PARTICIPANT COST
 30810 NOTE
 30820 A $CNNUC5.K = MAX(0, TABHL(CNNTOCT, TABHL(CNNCST, CNNAS.K, 0, 10000, 500),$
 30830 X $0, .3, .05) - TABHL(CNNTOCT, TABHL(CNNCST, CNNPSL.K, 0, 10000, 500),$
 30840 X $0, .3, .05)) - CNNPSL.K * MAX(0, CNNICS.K - TABHL(CNNCST, CNNPSL.K,$
 30850 X $0, 10000, 500))$
 30860 A $CNNUC5.K = SWITCH(MIN(CNNMSNL.K, CNNSCAP.K, CNNUC5.K / CNNICS.K),$
 30870 X $0, CNNCDS.K - 5)$
 30880 NOTE
 30890 A $CNNUC.K = CNNSP1S.K * (CNNUC1.K + CNNUC2.K + CNNUC3.K + CNNUC4.K + CNNUC5.K)$
 30900 NOTE
 30910 A $CNNPS1.K = SWITCH(CNNFPL.K * 8.76 / CNNCRFB.K, 0, CNNPKS.K - 1)$
 30920 A $CNNPS2.K = SWITCH(CNNICN.K, 0, CNNPKS.K - 2)$
 30930 A $CNNPSL.K = CNNPS1.K + CNNPS2.K$
 30940 A $CNNPSLS.K = TABHL(CNNCST, CNNPSL.K, 0, 10000, 500)$
 30950 NOTE
 30960 C $CNNSP1Y = 1988$
 30970 C $CNNSP2Y = 3000$
 30980 C $CNNSP3Y = 3000$
 30990 A $CNNSP1S.K = CLIP(1, 0, TIME.K, CNNSP1Y)$
 31000 A $CNNSP2S.K = CNNSP1S.K * CLIP(1, 0, TIME.K, CNNSP2Y)$
 31010 A $CNNSP3S.K = CNNSP2S.K * CLIP(1, 0, TIME.K, CNNSP3Y)$
 31020 A $CNNSPER.K = CNNSP1S.K + CNNSP2S.K + CNNSP3S.K$
 31030 C $CNNRSSY = 3000$
 31040 C $CNNRSCY = 3000$
 31050 A $CNNRSS.K = CLIP(1, 0, TIME.K, CNNRSSY) * CLIP(1, 0, CNNRSCY, TIME.K)$
 31060 C $CNNRMSY = 3000$
 31070 C $CNNRM CY = 3000$
 31080 A $CNNRMS.K = CLIP(1, 0, TIME.K, CNNRMSY) * CLIP(1, 0, CNNRM CY, TIME.K)$
 31090 NOTE
 31100 NOTE PERFORMANCE STANDARDS POLICY SECTION
 31110 NOTE
 31120 C $CNNPP1Y = 3000$
 31130 C $CNNPP2Y = 3000$
 31140 C $CNNPP3Y = 3000$
 31150 A $CNNPP1S.K = CLIP(1, 0, TIME.K, CNNPP1Y)$
 31160 A $CNNPP2S.K = CNNPP1S.K * CLIP(1, 0, TIME.K, CNNPP2Y)$

31170 A $CNNPP3S.K = CNNPP2S.K * CLIP(1, 0, TIME.K, CNNPP3Y)$
31180 A $CNNPPER.K = CNNPPLS.K + CNNPP2S.K + CNNPP3S.K$
31190 NOTE
31200 C $CNNPCFD = 0$
31210 C $CNNPCF1 = .3$
31220 C $CNNPCF2 = .8$
31230 C $CNNPCF3 = 1$
31240 A $CNNPCF.K = SWITCH(CNNPCFD, 0, CNNPPER.K) + SWITCH(CNNPCF1, 0, CNNPPER.K - 1)$
31250 X $+ SWITCH(CNNPCF2, 0, CNNPPER.K - 2) + SWITCH(CNNPCF3, 0, CNNPPER.K - 3)$
31260 NOTE
31270 A $CNNPS.K = TABHL(CNNPST, TIME.K - CNNASDT, 1987, 1992, 5)$
31280 T $CNNPST = .401 / .401$
31290 NOTE
31300 A $CNNPSC.K = TABHL(CNNCCT, (CNNBU - CNNPS.K) * CNNPCF.K, 0, .28, .02)$
31310 C $CNNASDT = 0$
31320 NOTE
31330 NOTE INFORMATION PROGRAMS POLICY SECTION
31340 NOTE
31350 C $CNNIMP = .5$
31360 C $CNNIPSY = 3000$
31370 C $CNNIPCY = 3000$
31380 A $CNNIPS.K = CLIP(1, 0, TIME.K, CNNIPSY) * CLIP(1, 0, CNNIPCY, TIME.K)$
31390 C $CNNIUPR = .35$
31400 C $CNNIPD = 2$
31410 C $CNNICPP = 200$
31420 A $CNNIPP.K = CNBO.K * CNNPR.K * CNNIPS.K * CNNIUPR$
31430 A $CNNIAP.K = MIN(DLINFL(CNNIPP.K, CNNIPD), CNNIPP.K)$
31440 N $CNNIPP = 0$
31450 A $CNNIAPR.K = CNNIAP.K / (CNBO.K * CNNPR.K)$
31460 A $CNNIUC.K = (CNNIPP.K - CNNIAP.K) * CNNICPP * (1 + CNNAC) / CNNIPD$
31470 A $CNNIPR.K = CIPDRB.K * CNNIMP$
31480 A $CNNIWR.K = ((1 - CNNIAPR.K) * CIPDRB.K) + (CNNIAPR.K * CNNIPR.K)$
31490 A $CNNIDB.K = CLIP(CIPDRB.K, CNNIWR.K, CNNIPSY, TIME.K)$
31500 NOTE
31510 NOTE MAINLINE STRUCTURE
31520 NOTE
31530 A $CNNBWA.K = (1 - CIPAPR.K) + (CIPAPR.K * CNNBMA)$
31540 A $CNNBNO.K = CNBO.K * CNNPR.K * CNNBU$
31550 A $CNNDR.K = CNNIDB.K + CDRL$
31560 A $CNNCRF.K = CNNDR.K / (1 - 1 / (1 + CNNDR.K) ^ CNNSL)$
31570 A $CNNCRFB.K = BPADR / (1 - 1 / (1 + BPADR) ^ CNNSL)$
31580 A $CNNICN.K = (CAPEU.K * 8.76 / CNNCRF.K) / (1 - CTAXS)$
31590 A $CNNISN.K = TABHL(CNNCST, CNNICN.K, 0, 10000, 500)$
31600 A $CNNSRF.K = 1 - CNNRSS.K * TABHL(CNNRFT, CNNACS.K / CNNISN.K, .6, 1.4, .1)$
31610 T $CNNRFT = 1 / .9 / .8 / .65 / .5 / .35 / .2 / .1 / 0$
31620 A $CNNMSNL.K = MAX(0, (CMCE.K - CAPEU.K) * 8.76 / CNNCRFB.K)$
31630 A $CNNUS.K = CNNSRF.K * CNNSPIS.K * MIN(CNNMSNL.K, CNNSCAP.K,$
31640 X $CNNMF.K * CNNICN.K + CNNAS.K)$
31650 A $CNNICC.K = CNNST.K$
31660 A $CNNICS.K = TABHL(CNNCST, CNNICC.K, 0, 10000, 500)$
31670 A $CNNININ.K = CNBS.K * CNNICS.K$
31680 A $CNNNIR.K = (CNNNC.K / CNNSL) * CLIP(0, 1, CNNACS.K, CNNICS.K)$
31690 R $CNNNCI.KL = CNNNIN.K + CNNNIR.K$
31700 N $CNNNCI = 0$
31710 R $CNNNRR.KL = DELAY3P(CNNNCI.JK, CNNSL, CNNNC.K)$
31720 A $CNNND.K = CNNBNO.K * CNNBWA.K - (CNNNC.K * CNNPR.K)$
31730 A $CNNCONS.K = CNNBNO.K - CNNND.K$
31740 A $CNNACS.K = (CNNNC.K * CNNPR.K) / (CNBO.K * CNNPR.K)$
31750 A $CNNICC.K = TABHL(CNNCCT, CNNACS.K, 0, .28, .02)$
31760 A $CNNPC.K = MAX(0, (TABHL(CNNICCT, CNNICS.K, 0, .3, .05) / CNNICS.K -$
31770 X $CNNUC.K) * (1 - CTAXS))$

31780 A $CNNTXC.K = \text{MAX}(0, (\text{TABHL}(\text{CNNTOCT}, \text{CNNICS.K}, 0, .3, .05) / \text{CNNICS.K} -$
31790 X $\text{CNNUC.K}) * \text{CTAXS})$
31800 A $\text{CNNUEN.K} = \text{CNNPR.K} * \text{CNNUC.K} * \text{CNNNIN.K}$
31810 A $\text{CNNPEN.K} = \text{CNNPR.K} * \text{CNNPC.K} * \text{CNNNIN.K}$
31820 A $\text{CNNTEN.K} = \text{CNNPR.K} * \text{CNNTXC.K} * \text{CNNNIN.K}$
31830 A $\text{CNNDUC.K} = \text{DLINF3}(\text{CNNUC.K}, \text{CNNSL})$
31840 A $\text{CNNDPC.K} = \text{DLINF3}(\text{CNNPC.K}, \text{CNNSL})$
31850 A $\text{CNNDTX.K} = \text{DLINF3}(\text{CNNTXC.K}, \text{CNNSL})$
31860 A $\text{CNNUER.K} = \text{CNNPR.K} * \text{CNNNIR.K} * \text{CNNDUC.K} * \text{CNNRMS.K}$
31870 A $\text{CNNPER.K} = (\text{CNNNIR.K} * \text{CNNDPC.K} + ((1 - \text{CNNRMS.K}) * (1 - \text{CTAXS})$
31880 X $* \text{CNNNIR.K} * \text{CNNDUC.K})) * \text{CNNPR.K}$
31890 A $\text{CNNTER.K} = (\text{CNNNIR.K} * \text{CNNDTX.K} + ((1 - \text{CNNRMS.K}) * \text{CTAXS}$
31900 X $* \text{CNNNIR.K} * \text{CNNDUC.K})) * \text{CNNPR.K}$
31910 A $\text{CNNUE.K} = (\text{CNNUEN.K} + \text{CNNUER.K}) * (1 + \text{CNNAC})$
31920 A $\text{CNNPE.K} = \text{CNNPEN.K} + \text{CNNPER.K}$
31930 A $\text{CNNTTE.K} = \text{CNNTEN.K} + \text{CNNTER.K}$
31940 NOTE
31950 L $\text{CNNAUE.K} = \text{CNNAUE.J} + \text{DT} * \text{CNNAUEI.JK}$
31960 N $\text{CNNAUE} = 0$
31970 R $\text{CNNAUEI.KL} = \text{CNNUE.K} + \text{CNNIUC.K}$
31980 NOTE
31990 A $\text{CNNICEO.K} = \text{CMCE.K} * 8.76 / \text{CNNCRFB.K}$
32000 A $\text{CNNICSO.K} = \text{TABHL}(\text{CNNCST}, \text{CNNICEO.K}, 0, 10000, 500)$
32010 A $\text{CNNRNC.K} = (\text{CNNAUE.K} * \text{CNNCRFB.K}) / (87.6 * \text{MAX}(.01, \text{CNNCONS.K}))$
32020 NOTE
32030 NOTE *****
32040 NOTE
32050 NOTE INDUSTRIAL SECTOR DEMAND FOR ELECTRICITY
32060 NOTE
32070 NOTE *****
32080 NOTE
32090 NOTE
32100 NOTE
32110 C $\text{ISDR} = .03$
32120 C $\text{IDRL} = .05$
32130 C $\text{IDRB} = .05$
32140 C $\text{ITAXS} = 0$
32150 A $\text{IMCE.K} = 500$
32160 C $\text{IAPSW} = 0$
32170 A $\text{IAPEU.K} = \text{SWITCH}(\text{IAPE.K}, \text{TABHL}(\text{IAPET}, \text{TIME.K}, 1984, 2004, 4), \text{IAPSW})$
32180 T $\text{IAPET} = 18/17.406/17.173/17.081/16.741/16.872$
32190 NOTE
32200 A $\text{ID.K} = \text{IMDD.K} + \text{ILID.K} + \text{IOTD.K}$
32210 NOTE
32220 A $\text{IUE.K} = \text{IMDUE.K} + \text{ILIE.K} + \text{IOTUE.K}$
32230 A $\text{IPE.K} = \text{IMDPE.K} + \text{ILIE.K} + \text{IOTPE.K}$
32240 A $\text{ITE.K} = \text{IMDTE.K} + \text{ILITE.K} + \text{IOTTE.K}$
32250 NOTE
32260 A $\text{INC.K} = \text{IMDNC.K} + \text{ILINC.K} + \text{IOTNC.K}$
32270 NOTE
32280 NOTE INFORMATION PROGRAMS POLICY SECTION - ALL SERVICE CATEGORIES
32290 NOTE
32300 C $\text{IIPMP} = .5$
32310 C $\text{IIPPSY} = 3000$
32320 C $\text{IIPPCY} = 3000$
32330 A $\text{IIPPS.K} = \text{CLIP}(1, 0, \text{TIME.K}, \text{IIPPSY}) * \text{CLIP}(1, 0, \text{IIPPCY}, \text{TIME.K})$
32340 C $\text{IIPUPR} = .35$
32350 C $\text{IIPPD} = 2$
32360 C $\text{IIPCPP} = 100$
32370 A $\text{IIPAPR.K} = \text{DLINF1}(\text{IIPUPR} * \text{IIPPS.K}, \text{IIPPD})$
32380 N $\text{IIPPS} = 0$

32390 A IIPPR.K=IDRB*IIPMP
32400 A IIPWR.K=(1-IIPAPR.K)*IDRB+(IIPAPR.K*IIPPR.K)
32410 A IIPDRB.K=CLIP(IDRB,IIPWR.K,IIPPSY,TIME.K)
32420 NOTE
32430 NOTE INDUSTRIAL SECTOR
32440 NOTE MACHINE DRIVE
32450 NOTE
32460 T IMDOCT=0/0/0/515/580/661/1308/1932/2522/2942/3296/
32470 X 4962/5014/16411
32480 T IMDCST=0/.0258/.0517/.0628/.0712/.0796/.0916/.1025/
32490 X .1029/.1032/.1185/.1232/.1254
32500 T IMDOCT=0/0/0/3/8/14/24/40/63/90/121/162/212/319
32510 L IMDEU.K=IMDEU.J+DT*IMDEG.JK
32520 N IMDEU=2.569
32530 R IMDEG.KI=DEMEGM*IMDEU.K*IMDEGR.K
32540 A IMDEGR.K=TABHL(IMDEGRT,TIME.K,1984,2004,5)
32550 T IMDEGRT=.01465/.01465/.01465/.01465/.01465
32560 C IMDAC=.11
32570 C IMDSL=15
32580 C IMDSPPD=15
32590 A IMDPR.K=TABHL(IMDPRT,TIME.K,1984,2004,5)
32600 T IMDPRT=1/1.07/1.065/1.035/1.02
32610 C IMDBMA=1.0
32620 NOTE
32630 NOTE SUBSIDY PROGRAMS POLICY SECTION
32640 NOTE
32650 C IMDSASD=0
32660 C IMDSAS1=0
32670 C IMDSAS2=0
32680 C IMDSAS3=5
32690 A IMDSAS.K=SWITCH(IMDSASD,0,IMDSPER.K)+SWITCH(IMDSAS1,0,IMDSPER.K-1)
32700 X +SWITCH(IMDSAS2,0,IMDSPER.K-2)+SWITCH(IMDSAS3,0,IMDSPER.K-3)
32710 C IMDSTS2=2
32720 C IMDSTS1=2
32730 C IMDSTS2=2
32740 C IMDSTS3=2
32750 A IMDSTS.K=SWITCH(IMDSTS2,0,IMDSPER.K)+SWITCH(IMDSTS1,0,IMDSPER.K-1)
32760 X +SWITCH(IMDSTS3,0,IMDSPER.K-2)+SWITCH(IMDSTS4,0,IMDSPER.K-3)
32770 C IMDCDS2=0
32780 C IMDCDS1=0
32790 C IMDCDS2=0
32800 C IMDCDS3=3
32810 A IMDCDS.K=SWITCH(IMDCDS2,0,IMDSPER.K)+SWITCH(IMDCDS1,0,IMDSPER.K-1)
32820 X +SWITCH(IMDCDS3,0,IMDSPER.K-2)+SWITCH(IMDCDS4,0,IMDSPER.K-3)
32830 C IMDPKSD=0
32840 C IMDPKS1=0
32850 C IMDPKS2=0
32860 C IMDPKS3=0
32870 A IMDPKS.K=SWITCH(IMDPKSD,0,IMDSPER.K)+SWITCH(IMDPKS1,0,IMDSPER.K-1)
32880 X +SWITCH(IMDPKS2,0,IMDSPER.K-2)+SWITCH(IMDPKS3,0,IMDSPER.K-3)
32890 C IMDSFSD=0
32900 C IMDSFS1=0
32910 C IMDSFS2=0
32920 C IMDSFS3=40
32930 A IMDSFS.K=SWITCH(IMDSFSD,0,IMDSPER.K)+SWITCH(IMDSFS1,0,IMDSPER.K-1)
32940 X +SWITCH(IMDSFS2,0,IMDSPER.K-2)+SWITCH(IMDSFS3,0,IMDSPER.K-3)
32950 C IMDFMSD=0
32960 C IMDFMS1=0
32970 C IMDFMS2=0
32980 C IMDFMS3=0
32990 A IMDFMS.K=SWITCH(IMDFMSD,0,IMDSPER.K)+SWITCH(IMDFMS1,0,IMDSPER.K-1)


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33000 X      +SWITCH (IMDFMS2,0,IMDSPER.K-2)+SWITCH (IMDFMS3,0,IMDSPER.K-3)
33010 C      IMDFCD=0
33020 C      IMDFC1=40
33030 C      IMDFC2=40
33040 C      IMDFC3=40
33050 A      IMDFC.K=SWITCH (IMDFCD,0,IMDSPER.K)+SWITCH (IMDFC1,0,IMDSPER.K-1)
33060 X      +SWITCH (IMDFC2,0,IMDSPER.K-2)+SWITCH (IMDFC3,0,IMDSPER.K-3)
33070 C      IMDCCI=0
33080 C      IMDCSI=0
33090 C      IMDELCL=100
33100 C      IMDFPLD=0
33110 C      IMDFPL1=0
33120 C      IMDFPL2=0
33130 C      IMDFPL3=0
33140 A      IMDFPL.K=SWITCH (IMDFPLD,0,IMDSPER.K)+SWITCH (IMDFPL1,0,IMDSPER.K-1)
33150 X      +SWITCH (IMDFPL2,0,IMDSPER.K-2)+SWITCH (IMDFPL3,0,IMDSPER.K-3)
33160 NOTE
33170 A      IMDAS5.K=SWITCH (IMDSFS.K,0,IMDSAS.K-5)
33180 A      IMDAS6.K=SWITCH (BPAAVC.K,0,IMDSAS.K-6)
33190 A      IMDAS7.K=SWITCH (MAX (0,BPAAVC.K-IAPEU.K),0,IMDSAS.K-7)
33200 A      IMDAS.K=(IMDAS5.K+IMDAS6.K+IMDAS7.K)*8.76/IMDCRFB.K
33210 NOTE
33220 A      IMDMF.K=SWITCH (IMDFMS.K,0,IMDSAS.K-1)+SWITCH (IMDFMS.K,0,IMDSAS.K-2)
33230 X      +SWITCH (IMDFMS.K,0,IMDSAS.K-3)+SWITCH (IMDFMS.K,0,IMDSAS.K-4)
33240 NOTE
33250 A      IMDSC2.K=SWITCH (IMDFC.K,1E6,IMDSAS.K-2)
33260 A      IMDSC3.K=SWITCH (BPAAVC.K,1E6,IMDSAS.K-3)
33270 A      IMDSC4.K=SWITCH (MAX (0,BPAAVC.K-IAPEU.K),1E6,IMDSAS.K-4)
33280 A      IMDSCAP.K=(MIN (IMDSC2.K,IMDSC3.K,IMDSC4.K))*8.76/IMDCRFB.K
33290 NOTE
33300 A      IMDSS.K=TABHL (IMDCST,IMDUS.K,0,6000,500)
33310 A      IMDVA.K=(IMDUS.K-IMDCCI)*(IMDSS.K-IMDCSI)/2
33320 A      IMDDLK.K=TABHL (IMDCST,IMDICN.K+IMDUS.K+IMDELCL,0,6000,500)
33330 X      -TABHL (IMDCST,IMDICN.K+IMDUS.K,0,6000,500)
33340 A      IMDSL.P.K=IMDELCL/(MAX (.01,IMDDLK.K))
33350 A      IMDVC.K=SQRT (MAX (2*IMDSL.P.K*IMDVA.K,0))
33360 A      IMDST.K=MAX (IMDICN.K,IMDPSC.K,SWITCH (IMDUS.K,0,IMDSTS.K-1)+
33370 X      SWITCH (IMDUS.K+IMDICN.K,0,IMDSTS.K-2)+SWITCH (IMDUS.K
33380 X      +IMDVC.K,0,IMDSTS.K-3))
33390 NOTE
33400 A      IMDUC1.K=SWITCH (MIN (IMDMSNL.K,IMDSCAP.K,CLIP (IMDSPLS.K*
33410 X      IMDMF.K*IMDTCC.K/(1+IMDMF.K),0,IMDTCC.K,IMDPSL.K)),0,IMDCDS.K-1)
33420 A      IMDUC2.K=SWITCH (MIN (IMDMSNL.K,IMDSCAP.K,CLIP (IMDAS.K,0,IMDTCC.K,
33430 X      IMDPSL.K)),0,IMDCDS.K-2)
33440 A      IMDUC3.K=SWITCH (MIN (IMDMSNL.K,IMDSCAP.K,CLIP (IMDTCC.K,0,IMDTCC.K,
33450 X      IMDPSL.K)),0,IMDCDS.K-3)
33460 A      IMDUC4.K=SWITCH (MIN (IMDMSNL.K,IMDSCAP.K,CLIP (MIN (IMDTCC.K,IMDAS.K),
33470 X      0,IMDTCC.K,IMDPSL.K)),0,IMDCDS.K-4)
33480 A      IMDUC5.K=SWITCH (MIN (IMDMSNL.K,IMDSCAP.K,CLIP (IMDTCC.K-IMDPSL.K,
33490 X      0,IMDTCC.K,IMDPSL.K)),0,IMDCDS.K-5)
33500 A      IMDUC.K=IMDSPLS.K*(IMDUC1.K+IMDUC2.K+IMDUC3.K+IMDUC4.K+IMDUC5.K)
33510 NOTE
33520 A      IMDPS1.K=SWITCH (IMDFPL.K*8.76/IMDCRFB.K,0,IMDPKS.K-1)
33530 A      IMDPS2.K=SWITCH (IMDICN.K,0,IMDPKS.K-2)
33540 A      IMDPSL.K=IMDPS1.K+IMDPS2.K
33550 NOTE
33560 A      IMDSRI.K=TABHL (IMDTCCCT,IMDCSI,0,.13,.01)
33570 A      IMDSRN.K=TABHL (IMDTCCCT,IMDISN.K,0,.13,.01)
33580 A      IMDSRC.K=TABHL (IMDTCCCT,IMDICS.K,0,.13,.01)
33590 A      IMDSRM.K=(IMDSRN.K-IMDSRI.K)/(IMDSRC.K-IMDSRI.K)
33600 A      IMDSRS.K=(IMDISN.K-IMDCSI)/(IMDICS.K-IMDCSI)

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33610 NOTE
 33620 C $IMDSP1Y=3000$
 33630 C $IMDSP2Y=3000$
 33640 C $IMDSP3Y=3000$
 33650 A $IMDSP1S.K=CLIP(1,0,TIME.K,IMDSP1Y)$
 33660 A $IMDSP2S.K=IMDSP1S.K*CLIP(1,0,TIME.K,IMDSP2Y)$
 33670 A $IMDSP3S.K=IMDSP2S.K*CLIP(1,0,TIME.K,IMDSP3Y)$
 33680 A $IMDSPER.K=IMDSP1S.K+IMDSP2S.K+IMDSP3S.K$
 33690 C $IMDRMSY=3000$
 33700 C $IMDRMCY=3000$
 33710 A $IMDRMS.K=CLIP(1,0,TIME.K,IMDRMSY)*CLIP(1,0,IMDRMCY,TIME.K)$
 33720 NOTE
 33730 NOTE PERFORMANCE STANDARDS POLICY SECTION
 33740 NOTE
 33750 C $IMDPSSY=3000$
 33760 C $IMDPSCY=3000$
 33770 A $IMDPSS.K=CLIP(1,0,TIME.K,IMDPSSY)*CLIP(1,0,IMDPSCY,TIME.K)$
 33780 C $IMDPS=0.0$
 33790 A $IMDPSC.K=TABHL(IMDCCT,IMDPS,0,.13,.01)*IMDPSS.K$
 33800 NOTE
 33810 NOTE INFORMATION PROGRAMS POLICY SECTION
 33820 NOTE
 33830 C $IMDIMP=.5$
 33840 C $IMDIPSY=3000$
 33850 C $IMDIPCY=3000$
 33860 A $IMDIPS.K=CLIP(1,0,TIME.K,IMDIPSY)*CLIP(1,0,IMDIPCY,TIME.K)$
 33870 C $IMDIUPR=.35$
 33880 C $IMDIPD=2$
 33890 C $IMDICPP=200$
 33900 A $IMDIAPR.K=DLINF1(IMDIUPR*IMDPR.K*IMDIPS.K,IMDIPD)$
 33910 N $IMDIPS=0$
 33920 A $IMDIPR.K=IIPDRB.K*IMDIMP$
 33930 A $IMDIWR.K=((1-IMDIAPR.K)*IIPDRB.K)+(IMDIAPR.K*IMDIPR.K)$
 33940 A $IMDIDB.K=CLIP(IIPDRB.K,IMDIWR.K,IMDIPSY,TIME.K)$
 33950 NOTE
 33960 NOTE MAINLINE STRUCTURE
 33970 NOTE
 33980 C $IMDNCB=1E-5$
 33990 NOTE
 34000 NOTE
 34010 NOTE
 34020 A $IMDEWA.K=(1-IIPAPR.K)+(IIPAPR.K*IMDBMA)$
 34030 A $IMDDNO.K=IMDEU.K*IMDPR.K$
 34040 A $IMDDR.K=IMDIDB.K+IDRL$
 34050 A $IMDCRF.K=IMDDR.K/(1-1/(1+IMDDR.K)^{IMDSL})$
 34060 A $IMDCRFB.K=BPADR/(1-1/(1+BPADR)^{IMDSL})$
 34070 A $IMDICN.K=(IAPEU.K*8.76/IMDCRF.K)/(1-ITAXS)$
 34080 A $IMDISN.K=TABHL(IMDCST,IMDICN.K,0,6000,500)$
 34090 A $IMDMSNL.K=MAX(0,(IMCE.K-IAPEU.K)*8.76/IMDCRFB.K)$
 34100 A $IMDUS.K=IMDSP1S.K*MIN(IMDMSNL.K,IMDSCAP.K,$
 34110 X $IMDMF.K*IMDICN.K+IMDAS.K)$
 34120 A $IMDI CC.K=IMDST.K$
 34130 A $IMDICS.K=TABHL(IMDCST,IMDI CC.K,0,6000,500)$
 34140 A $IMDINC.K=IMDEU.K*IMDPR.K*IMDICS.K$
 34150 A $IMDNIN.K=MAX(0,(IMDINC.K-IMDNC.K)/IMDSPPD)$
 34160 A $IMDNIR.K=(IMDNC.K/IMDSL)*CLIP(0,1,IMDNC.K,IMDINC.K)$
 34170 R $IMDN CI.KI=IMDNIN.K+IMDNIR.K$
 34180 R $IMDNRR.KI=DELAY3P(IMDN CI.JK,IMDSL,IMDNC.K)$
 34190 N $IMDN CI=IMDN CB/IMDSL$
 34200 A $IMDD.K=IMDDNO.K*IMDEWA.K-IMDNC.K$
 34210 A $IMDCONS.K=IMDDNO.K-IMDD.K$

34220 A $IMDACS.K = IMDNC.K / (IMDEU.K * IMDPR.K)$
34230 A $IMDTCC.K = TABHL(IMDCCT, IMDACS.K, 0, .13, .01)$
34240 A $IMDPC.K = MAX(0, (IMDTCC.K - IMDUC.K) * (1 - ITAXS))$
34250 A $IMDTXC.K = (IMDTCC.K - IMDUC.K) * ITAXS$
34260 A $IMDUEN.K = IMDUC.K * IMDNIN.K$
34270 A $IMDPEN.K = IMDPC.K * IMDNIN.K$
34280 A $IMDTEN.K = IMDTXC.K * IMDNIN.K$
34290 A $IMDDUC.K = DLINF3(IMDUC.K, IMDSL)$
34300 A $IMDDPC.K = DLINF3(IMDPC.K, IMDSL)$
34310 A $IMDDTX.K = DLINF3(IMDTXC.K, IMDSL)$
34320 A $IMDUER.K = IMDNIR.K * IMDDUC.K * IMDRMS.K$
34330 A $IMDPER.K = IMDNIR.K * IMDDPC.K + ((1 - IMDRMS.K) * (1 - ITAXS))$
34340 X $*IMDNIR.K * IMDDUC.K)$
34350 A $IMDTER.K = IMDNIR.K * IMDDTX.K + ((1 - IMDRMS.K) * ITAXS$
34360 X $*IMDNIR.K * IMDDUC.K)$
34370 A $IMDUE.K = (IMDUEN.K + IMDUER.K) * (1 + IMDAC)$
34380 A $IMDPE.K = IMPEN.K + IMPER.K$
34390 A $IMDTE.K = IMDTEN.K + IMDTER.K$
34400 NOTE
34410 L $IMDAUE.K = IMDAUE.J + DT * IMDAUEI.JK$
34420 N $IMDAUE = 0$
34430 R $IMDAUEI.KL = IMDUE.K$
34440 NOTE
34450 A $IMDICEO.K = IMCE.K * 8.76 / IMDCRFB.K$
34460 A $IMDICSO.K = TABHL(IMDCST, IMDICEO.K, 0, 6000, 500)$
34470 A $IMDRNC.K = (IMDAUE.K * IMDCRFB.K) / (87.6 * IMDCONS.K)$
34480 NOTE
34490 NOTE LIGHTING
34500 NOTE
34510 T $ILICCT = 0/0/0/1038/1703$
34520 T $ILICST = 0/.0928/.1099/.1269/.1489$
34530 T $ILITCCT = 0/0/0/21/76$
34540 L $ILIEU.K = ILIEU.J + DT * ILIEG.JK$
34550 N $ILIEU = .1238$
34560 R $ILIEG.KL = DEMEGM * ILIEU.K * ILIEGR.K$
34570 A $ILIEGR.K = TABHL(ILIEGRT, TIME.K, 1984, 2004, 5)$
34580 T $ILIEGRT = .02565/.02565/.02565/.02565/.02565$
34590 C $ILIAC = .11$
34600 C $ILISL = 20$
34610 C $ILISPPD = 20$
34620 A $ILIPR.K = TABHL(ILIPRT, TIME.K, 1984, 2004, 5)$
34630 T $ILIPRT = 1/1.07/1.065/1.035/1.02$
34640 C $ILIBMA = 1.0$
34650 NOTE
34660 NOTE SUBSIDY PROGRAMS POLICY SECTION
34670 NOTE
34680 C $ILISASD = 0$
34690 C $ILISAS1 = 0$
34700 C $ILISAS2 = 0$
34710 C $ILISAS3 = 5$
34720 A $ILISAS.K = SWITCH(ILISASD, 0, ILISPER.K) + SWITCH(ILISAS1, 0, ILISPER.K - 1)$
34730 X $+ SWITCH(ILISAS2, 0, ILISPER.K - 2) + SWITCH(ILISAS3, 0, ILISPER.K - 3)$
34740 C $ILISTS D = 2$
34750 C $ILISTS1 = 2$
34760 C $ILISTS2 = 2$
34770 C $ILISTS3 = 2$
34780 A $ILISTS.K = SWITCH(ILISTS D, 0, ILISPER.K) + SWITCH(ILISTS1, 0, ILISPER.K - 1)$
34790 X $+ SWITCH(ILISTS2, 0, ILISPER.K - 2) + SWITCH(ILISTS3, 0, ILISPER.K - 3)$
34800 C $ILICDS D = 0$
34810 C $ILICDS1 = 0$
34820 C $ILICDS2 = 0$

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34830 C      ILICDS3=3
34840 A      ILICDS.K=SWITCH(ILICDS,0,ILISPER.K)+SWITCH(ILICDS1,0,ILISPER.K-1)
34850 X      +SWITCH(ILICDS2,0,ILISPER.K-2)+SWITCH(ILICDS3,0,ILISPER.K-3)
34860 C      ILIPKSD=0
34870 C      ILIPKS1=0
34880 C      ILIPKS2=0
34890 C      ILIPKS3=0
34900 A      ILIPKS.K=SWITCH(ILIPKSD,0,ILISPER.K)+SWITCH(ILIPKS1,0,ILISPER.K-1)
34910 X      +SWITCH(ILIPKS2,0,ILISPER.K-2)+SWITCH(ILIPKS3,0,ILISPER.K-3)
34920 C      ILISFSD=0
34930 C      ILISFS1=0
34940 C      ILISFS2=0
34950 C      ILISFS3=40
34960 A      ILISFS.K=SWITCH(ILISFSD,0,ILISPER.K)+SWITCH(ILISFS1,0,ILISPER.K-1)
34970 X      +SWITCH(ILISFS2,0,ILISPER.K-2)+SWITCH(ILISFS3,0,ILISPER.K-3)
34980 C      ILIFMSD=0
34990 C      ILIFMS1=0
35000 C      ILIFMS2=0
35010 C      ILIFMS3=0
35020 A      ILIFMS.K=SWITCH(ILIFMSD,0,ILISPER.K)+SWITCH(ILIFMS1,0,ILISPER.K-1)
35030 X      +SWITCH(ILIFMS2,0,ILISPER.K-2)+SWITCH(ILIFMS3,0,ILISPER.K-3)
35040 C      ILIFCD=0
35050 C      ILIFC1=40
35060 C      ILIFC2=40
35070 C      ILIFC3=40
35080 A      ILIFC.K=SWITCH(ILIFCD,0,ILISPER.K)+SWITCH(ILIFC1,0,ILISPER.K-1)
35090 X      +SWITCH(ILIFC2,0,ILISPER.K-2)+SWITCH(ILIFC3,0,ILISPER.K-3)
35100 C      ILICCI=0
35110 C      ILICSI=0
35120 C      ILIDELC=100
35130 C      ILIFPLD=0
35140 C      ILIFPL1=0
35150 C      ILIFPL2=0
35160 C      ILIFPL3=0
35170 A      ILIFPL.K=SWITCH(ILIFPLD,0,ILISPER.K)+SWITCH(ILIFPL1,0,ILISPER.K-1)
35180 X      +SWITCH(ILIFPL2,0,ILISPER.K-2)+SWITCH(ILIFPL3,0,ILISPER.K-3)
35190 NOTE
35200 A      ILIAS5.K=SWITCH(ILISFS.K,0,ILISAS.K-5)
35210 A      ILIAS6.K=SWITCH(BPAAVC.K,0,ILISAS.K-6)
35220 A      ILIAS7.K=SWITCH(MAX(0,BPAAVC.K-IAPEU.K),0,ILISAS.K-7)
35230 A      ILIAS.K=(ILIAS5.K+ILIAS6.K+ILIAS7.K)*8.76/ILICRFB.K
35240 NOTE
35250 A      ILIMF.K=SWITCH(ILIFMS.K,0,ILISAS.K-1)+SWITCH(ILIFMS.K,0,ILISAS.K-2)
35260 X      +SWITCH(ILIFMS.K,0,ILISAS.K-3)+SWITCH(ILIFMS.K,0,ILISAS.K-4)
35270 NOTE
35280 A      ILISC2.K=SWITCH(ILIFC.K,1E6,ILISAS.K-2)
35290 A      ILISC3.K=SWITCH(BPAAVC.K,1E6,ILISAS.K-3)
35300 A      ILISC4.K=SWITCH(MAX(0,BPAAVC.K-IAPEU.K),1E6,ILISAS.K-4)
35310 A      ILISCAP.K=(MIN(ILISC2.K,ILISC3.K,ILISC4.K))*8.76/ILICRFB.K
35320 NOTE
35330 A      ILISS.K=TABHL(ILICST,ILIUS.K,0,1600,400)
35340 A      ILIVA.K=(ILIUS.K-ILICCI)*(ILISS.K-ILICSI)/2
35350 A      ILIDLS.K=TABHL(ILICST,ILIICN.K+ILIUS.K+ILIDELC,0,1600,400)
35360 X      -TABHL(ILICST,ILIICN.K+ILIUS.K,0,1600,400)
35370 A      ILISLP.K=ILIDELC/(MAX(.01,ILIDLS.K))
35380 A      ILIVC.K=SQRT(MAX(2*ILISLP.K*ILIVA.K,0))
35390 A      ILIST.K=MAX(ILIICN.K,ILIPSC.K,SWITCH(ILIUS.K,0,ILISTS.K-1)+
35400 X      SWITCH(ILIUS.K+ILIICN.K,0,ILISTS.K-2)+SWITCH(ILIUS.K
35410 X      +ILIVC.K,0,ILISTS.K-3))
35420 NOTE
35430 A      ILIUC1.K=SWITCH(MIN(ILIMSNL.K,ILISCAP.K,CLIP(ILISPLS.K*

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35440 X $ILIMF.K * ILITOC.K / (1 + ILIMF.K), 0, ILITOC.K, ILIPSL.K) , 0, ILICDS.K-1)$
35450 A $ILIUC2.K = SWITCH (MIN (ILIMSNL.K, ILISCAP.K, CLIP (ILIAS.K, 0, ILITOC.K,$
35460 X $ILIPSL.K)) , 0, ILICDS.K-2)$
35470 A $ILIUC3.K = SWITCH (MIN (ILIMSNL.K, ILISCAP.K, CLIP (ILITOC.K, 0, ILITOC.K,$
35480 X $ILIPSL.K)) , 0, ILICDS.K-3)$
35490 A $ILIUC4.K = SWITCH (MIN (ILIMSNL.K, ILISCAP.K, CLIP (MIN (ILITOC.K, ILIAS.K) ,$
35500 X $0, ILITOC.K, ILIPSL.K)) , 0, ILICDS.K-4)$
35510 A $ILIUC5.K = SWITCH (MIN (ILIMSNL.K, ILISCAP.K, CLIP (ILITOC.K - ILIPSL.K,$
35520 X $0, ILITOC.K, ILIPSL.K)) , 0, ILICDS.K-5)$
35530 A $ILIUC.K = ILISPLS.K * (ILIUC1.K + ILIUC2.K + ILIUC3.K + ILIUC4.K + ILIUC5.K)$
35540 NOTE
35550 A $ILIPS1.K = SWITCH (ILIFPL.K * 8.76 / ILICRFB.K, 0, ILIPKS.K-1)$
35560 A $ILIPS2.K = SWITCH (ILIICN.K, 0, ILIPKS.K-2)$
35570 A $ILIPSL.K = ILIPS1.K + ILIPS2.K$
35580 NOTE
35590 A $ILISRI.K = TABHL (ILITOC.T, ILICSI, 0, .16, .04)$
35600 A $ILISRN.K = TABHL (ILITOC.T, ILIISN.K, 0, .16, .04)$
35610 A $ILISRC.K = TABHL (ILITOC.T, ILIICS.K, 0, .16, .04)$
35620 A $ILISRM.K = (ILISRN.K - ILISRI.K) / (ILISRC.K - ILISRI.K)$
35630 A $ILISRS.K = (ILIISN.K - ILICSI) / (ILIICS.K - ILICSI)$
35640 NOTE
35650 C $ILISPLY=3000$
35660 C $ILISP2Y=3000$
35670 C $ILISP3Y=3000$
35680 A $ILISPLS.K = CLIP (1, 0, TIME.K, ILISPLY)$
35690 A $ILISP2S.K = ILISPLS.K * CLIP (1, 0, TIME.K, ILISP2Y)$
35700 A $ILISP3S.K = ILISP2S.K * CLIP (1, 0, TIME.K, ILISP3Y)$
35710 A $ILISPER.K = ILISPLS.K + ILISP2S.K + ILISP3S.K$
35720 C $ILIRMSY=3000$
35730 C $ILIRMCY=3000$
35740 A $ILIRMS.K = CLIP (1, 0, TIME.K, ILIRMSY) * CLIP (1, 0, ILIRMCY, TIME.K)$
35750 NOTE
35760 NOTE PERFORMANCE STANDARDS POLICY SECTION
35770 NOTE
35780 C $ILIPSSY=3000$
35790 C $ILIPSCY=3000$
35800 A $ILIPSS.K = CLIP (1, 0, TIME.K, ILIPSSY) * CLIP (1, 0, ILIPSCY, TIME.K)$
35810 C $ILIPS=0.0$
35820 A $ILIPSC.K = TABHL (ILICCT, ILIPS, 0, .16, .04) * ILIPSS.K$
35830 NOTE
35840 NOTE INFORMATION PROGRAMS POLICY SECTION
35850 NOTE
35860 C $ILIIMP=.5$
35870 C $ILIIPSY=3000$
35880 C $ILIIPCY=3000$
35890 A $ILIIPS.K = CLIP (1, 0, TIME.K, ILIIPSY) * CLIP (1, 0, ILIIPCY, TIME.K)$
35900 C $ILIUPR=.35$
35910 C $ILIIPD=2$
35920 C $ILIICPP=200$
35930 A $ILIAPR.K = DLINF1 (ILIUPR * ILIPR.K * ILIIPS.K, ILIIPD)$
35940 N $ILIIPS=0$
35950 A $ILIIPR.K = IIPDRB.K * ILIIMP$
35960 A $ILIWR.K = ((1 - ILIAPR.K) * IIPDRB.K) + (ILIAPR.K * ILIIPR.K)$
35970 A $ILIIDB.K = CLIP (IIPDRB.K, ILIWR.K, ILIIPSY, TIME.K)$
35980 NOTE
35990 NOTE MAINLINE STRUCTURE
36000 NOTE
36010 C $ILINCB=1E-5$
36020 NOTE
36030 NOTE
36040 NOTE

36050 A $ILIBWA.K = (1 - IIPAPR.K) + (IIPAPR.K * ILIBMA)$
36060 A $ILIDNO.K = ILIEU.K * ILIPR.K$
36070 A $ILIDR.K = ILIDB.K + IDRL$
36080 A $ILICRF.K = ILIDR.K / (1 - 1 / (1 + ILIDR.K) ^ ILISL)$
36090 A $ILICRFB.K = BPADR / (1 - 1 / (1 + BPADR) ^ ILISL)$
36100 A $ILIICN.K = (IAPEU.K * 8.76 / ILICRF.K) / (1 - ITAXS)$
36110 A $ILIISN.K = TABHL(ILICST, ILIICN.K, 0, 1600, 400)$
36120 A $ILIMSNL.K = MAX(0, (IMCE.K - IAPEU.K) * 8.76 / ILICRFB.K)$
36130 A $ILIUS.K = ILISP1S.K * MIN(ILIMSNL.K, ILISCAP.K,$
36140 X $ILIMF.K * ILIICN.K + ILIAS.K)$
36150 A $ILIICC.K = ILIST.K$
36160 A $ILIICS.K = TABHL(ILICST, ILIICC.K, 0, 1600, 400)$
36170 A $ILIINC.K = ILIEU.K * ILIPR.K * ILIICS.K$
36180 A $ILININ.K = MAX(0, (ILIINC.K - ILINC.K) / ILISPPD)$
36190 A $ILINIR.K = (ILINC.K / ILISL) * CLIP(0, 1, ILINC.K, ILININ.K)$
36200 R $ILINCI.KL = ILININ.K + ILINIR.K$
36210 R $ILINRR.KL = DELAY3P(ILINCI.JK, ILISL, ILINC.K)$
36220 N $ILINCI = ILINCB / ILISL$
36230 A $ILID.K = ILIDNO.K * ILIBWA.K - ILINC.K$
36240 A $ILICONS.K = ILIDNO.K - ILID.K$
36250 A $ILIACS.K = ILINC.K / (ILIEU.K * ILIPR.K)$
36260 A $ILITCC.K = TABHL(ILIOCT, ILIACS.K, 0, .16, .04)$
36270 A $ILIPC.K = MAX(0, (ILITCC.K - ILIUC.K) * (1 - ITAXS))$
36280 A $ILITXC.K = (ILITCC.K - ILIUC.K) * ITAXS$
36290 A $ILIUEN.K = ILIUC.K * ILININ.K$
36300 A $ILIPEN.K = ILIPC.K * ILININ.K$
36310 A $ILITEN.K = ILITXC.K * ILININ.K$
36320 A $ILIDUC.K = DLINF3(ILIUC.K, ILISL)$
36330 A $ILIDPC.K = DLINF3(ILIPC.K, ILISL)$
36340 A $ILIDTX.K = DLINF3(ILITXC.K, ILISL)$
36350 A $ILIUER.K = ILINIR.K * ILIDUC.K * ILIRMS.K$
36360 A $ILIPER.K = ILINIR.K * ILIDPC.K + ((1 - ILIRMS.K) * (1 - ITAXS)$
36370 X $* ILINIR.K * ILIDUC.K)$
36380 A $ILITER.K = ILINIR.K * ILIDTX.K + ((1 - ILIRMS.K) * ITAXS$
36390 X $* ILINIR.K * ILIDUC.K)$
36400 A $ILIU.E.K = (ILIUEN.K + ILIUER.K) * (1 + ILIAC)$
36410 A $ILIPE.K = ILIPEN.K + ILIPER.K$
36420 A $ILITE.K = ILITEN.K + ILITER.K$
36430 NOTE
36440 L $ILIAUE.K = ILIAUE.J + DT * ILIAUEI.JK$
36450 N $ILIAUE = 0$
36460 R $ILIAUEI.KL = ILIU.E.K$
36470 NOTE
36480 A $ILIICEO.K = IMCE.K * 8.76 / ILICRFB.K$
36490 A $ILIICSO.K = TABHL(ILICST, ILIICEO.K, 0, 1600, 400)$
36500 A $ILIRNC.K = (ILIAUE.K * ILICRFB.K) / (87.6 * ILICONS.K)$
36510 NOTE
36520 NOTE OTHER USES
36530 NOTE
36540 T $IOTCCT = 0 / 287 / 407$
36550 T $IOTCST = 0 / .0027 / .0044 / .0932 / .1390$
36560 T $IOTCCT = 0 / 10 / 34$
36570 L $IOTEU.K = IOTEU.J + DT * IOTEG.JK$
36580 N $IOTEU = .8151$
36590 R $IOTEG.KL = DEMEGM * IOTEU.K * IOTEGR.K$
36600 A $IOTEGR.K = TABHL(IOTEGR.T, TIME.K, 1984, 2004, 5)$
36610 T $IOTEGR.T = .03565 / .03565 / .03565 / .03565 / .03565$
36620 C $IOTAC = .11$
36630 C $IOTSL = 20$
36640 C $IOTSPPD = 20$
36650 A $IOTPR.K = TABHL(IOTPR.T, TIME.K, 1984, 2004, 5)$

36660 T IOTPR1=1/1.07/1.065/1.035/1.02
36670 C IOTBMA=1.0
36680 NOTE
36690 NOTE SUBSIDY PROGRAMS POLICY SECTION
36700 NOTE
36710 C IOTSASD=0
36720 C IOTSAS1=0
36730 C IOTSAS2=0
36740 C IOTSAS3=5
36750 A IOTSAS.K=SWITCH(IOTSASD,0,IOTSPER.K)+SWITCH(IOTSAS1,0,IOTSPER.K-1)
36760 X +SWITCH(IOTSAS2,0,IOTSPER.K-2)+SWITCH(IOTSAS3,0,IOTSPER.K-3)
36770 C IOTSTSD=2
36780 C IOTSTS1=2
36790 C IOTSTS2=2
36800 C IOTSTS3=2
36810 A IOTSTS.K=SWITCH(IOTSTSD,0,IOTSPER.K)+SWITCH(IOTSTS1,0,IOTSPER.K-1)
36820 X +SWITCH(IOTSTS2,0,IOTSPER.K-2)+SWITCH(IOTSTS3,0,IOTSPER.K-3)
36830 C IOTCDS=0
36840 C IOTCDS1=0
36850 C IOTCDS2=0
36860 C IOTCDS3=3
36870 A IOTCDS.K=SWITCH(IOTCDS,0,IOTSPER.K)+SWITCH(IOTCDS1,0,IOTSPER.K-1)
36880 X +SWITCH(IOTCDS2,0,IOTSPER.K-2)+SWITCH(IOTCDS3,0,IOTSPER.K-3)
36890 C IOTPKSD=0
36900 C IOTPKS1=0
36910 C IOTPKS2=0
36920 C IOTPKS3=0
36930 A IOTPKS.K=SWITCH(IOTPKSD,0,IOTSPER.K)+SWITCH(IOTPKS1,0,IOTSPER.K-1)
36940 X +SWITCH(IOTPKS2,0,IOTSPER.K-2)+SWITCH(IOTPKS3,0,IOTSPER.K-3)
36950 C IOTSFS=0
36960 C IOTSFS1=0
36970 C IOTSFS2=0
36980 C IOTSFS3=40
36990 A IOTSFS.K=SWITCH(IOTSFS,0,IOTSPER.K)+SWITCH(IOTSFS1,0,IOTSPER.K-1)
37000 X +SWITCH(IOTSFS2,0,IOTSPER.K-2)+SWITCH(IOTSFS3,0,IOTSPER.K-3)
37010 C IOTFMS=0
37020 C IOTFMS1=0
37030 C IOTFMS2=0
37040 C IOTFMS3=0
37050 A IOTFMS.K=SWITCH(IOTFMS,0,IOTSPER.K)+SWITCH(IOTFMS1,0,IOTSPER.K-1)
37060 X +SWITCH(IOTFMS2,0,IOTSPER.K-2)+SWITCH(IOTFMS3,0,IOTSPER.K-3)
37070 C IOTFCD=0
37080 C IOTFC1=40
37090 C IOTFC2=40
37100 C IOTFC3=40
37110 A IOTFC.K=SWITCH(IOTFCD,0,IOTSPER.K)+SWITCH(IOTFC1,0,IOTSPER.K-1)
37120 X +SWITCH(IOTFC2,0,IOTSPER.K-2)+SWITCH(IOTFC3,0,IOTSPER.K-3)
37130 C IOTCCI=0
37140 C IOTCSI=0
37150 C IOTDEL=100
37160 C IOTFPL=0
37170 C IOTFPL1=0
37180 C IOTFPL2=0
37190 C IOTFPL3=0
37200 A IOTFPL.K=SWITCH(IOTFPL,0,IOTSPER.K)+SWITCH(IOTFPL1,0,IOTSPER.K-1)
37210 X +SWITCH(IOTFPL2,0,IOTSPER.K-2)+SWITCH(IOTFPL3,0,IOTSPER.K-3)
37220 NOTE
37230 A IOTAS5.K=SWITCH(IOTSFS.K,0,IOTSAS.K-5)
37240 A IOTAS6.K=SWITCH(BPAVC.K,0,IOTSAS.K-6)
37250 A IOTAS7.K=SWITCH(MAX(0,BPAVC.K-IAPEU.K),0,IOTSAS.K-7)
37260 A IOTAS.K=(IOTAS5.K+IOTAS6.K+IOTAS7.K)*8.76/IOTCRFB.K

37270 NOTE
 37280 A $IOTMF.K = SWITCH(IOTFMS.K, 0, IOTSAS.K-1) + SWITCH(IOTFMS.K, 0, IOTSAS.K-2)$
 37290 X $+ SWITCH(IOTFMS.K, 0, IOTSAS.K-3) + SWITCH(IOTFMS.K, 0, IOTSAS.K-4)$
 37300 NOTE
 37310 A $IOTSC2.K = SWITCH(IOTFC.K, 1E6, IOTSAS.K-2)$
 37320 A $IOTSC3.K = SWITCH(BPAVC.K, 1E6, IOTSAS.K-3)$
 37330 A $IOTSC4.K = SWITCH(MAX(0, BPAVC.K - LAPEU.K), 1E6, IOTSAS.K-4)$
 37340 A $IOTSCAP.K = (MIN(IOTSC2.K, IOTSC3.K, IOTSC4.K)) * 8.76 / IOTCRFB.K$
 37350 NOTE
 37360 A $IOTSS.K = TABHL(IOTCST, IOTUS.K, 0, 400, 100)$
 37370 A $IOTVA.K = (IOTUS.K - IOTCCI) * (IOTSS.K - IOTCSI) / 2$
 37380 A $IOTDLS.K = TABHL(IOTCST, IOTICN.K + IOTUS.K + IOTDELC, 0, 400, 100)$
 37390 X $- TABHL(IOTCST, IOTICN.K + IOTUS.K, 0, 400, 100)$
 37400 A $IOTSLP.K = IOTDELC / (MAX(.01, IOTDLS.K))$
 37410 A $IOTVC.K = SQRT(MAX(2 * IOTSLP.K * IOTVA.K, 0))$
 37420 A $IOTST.K = MAX(IOTICN.K, IOTPSK.K, SWITCH(IOTUS.K, 0, IOTSTS.K-1) +$
 37430 X $SWITCH(IOTUS.K + IOTICN.K, 0, IOTSTS.K-2) + SWITCH(IOTUS.K$
 37440 X $+ IOTVC.K, 0, IOTSTS.K-3))$
 37450 NOTE
 37460 A $IOTUC1.K = SWITCH(MIN(IOTMSNL.K, IOTSCAP.K, CLIP(IOTSP1S.K *$
 37470 X $IOTMF.K * IOTTC.K / (1 + IOTMF.K), 0, IOTTC.K, IOTPSL.K)), 0, IOTCDS.K-1)$
 37480 A $IOTUC2.K = SWITCH(MIN(IOTMSNL.K, IOTSCAP.K, CLIP(IOTAS.K, 0, IOTTC.K,$
 37490 X $IOTPSL.K)), 0, IOTCDS.K-2)$
 37500 A $IOTUC3.K = SWITCH(MIN(IOTMSNL.K, IOTSCAP.K, CLIP(IOTTC.K, 0, IOTTC.K,$
 37510 X $IOTPSL.K)), 0, IOTCDS.K-3)$
 37520 A $IOTUC4.K = SWITCH(MIN(IOTMSNL.K, IOTSCAP.K, CLIP(MIN(IOTTC.K, IOTAS.K),$
 37530 X $0, IOTTC.K, IOTPSL.K)), 0, IOTCDS.K-4)$
 37540 A $IOTUC5.K = SWITCH(MIN(IOTMSNL.K, IOTSCAP.K, CLIP(IOTTC.K - IOTPSL.K,$
 37550 X $0, IOTTC.K, IOTPSL.K)), 0, IOTCDS.K-5)$
 37560 A $IOTUC.K = IOTSP1S.K * (IOTUC1.K + IOTUC2.K + IOTUC3.K + IOTUC4.K + IOTUC5.K)$
 37570 NOTE
 37580 A $IOTPS1.K = SWITCH(IOTFPL.K * 8.76 / IOTCRFB.K, 0, IOTPKS.K-1)$
 37590 A $IOTPS2.K = SWITCH(IOTICN.K, 0, IOTPKS.K-2)$
 37600 A $IOTPSL.K = IOTPS1.K + IOTPS2.K$
 37610 NOTE
 37620 A $IOTSRI.K = TABHL(IOTTCCT, IOTCSI, 0, .14, .07)$
 37630 A $IOTSRN.K = TABHL(IOTTCCT, IOTISN.K, 0, .14, .07)$
 37640 A $IOTSRC.K = TABHL(IOTTCCT, IOTICS.K, 0, .14, .07)$
 37650 A $IOTSRM.K = (IOTSRN.K - IOTSRI.K) / (IOTSRC.K - IOTSRI.K)$
 37660 A $IOTSRK.K = (IOTISN.K - IOTCSI) / (IOTICS.K - IOTCSI)$
 37670 NOTE
 37680 C $IOTSP1Y = 3000$
 37690 C $IOTSP2Y = 3000$
 37700 C $IOTSP3Y = 3000$
 37710 A $IOTSP1S.K = CLIP(1, 0, TIME.K, IOTSP1Y)$
 37720 A $IOTSP2S.K = IOTSP1S.K * CLIP(1, 0, TIME.K, IOTSP2Y)$
 37730 A $IOTSP3S.K = IOTSP2S.K * CLIP(1, 0, TIME.K, IOTSP3Y)$
 37740 A $IOTSPER.K = IOTSP1S.K + IOTSP2S.K + IOTSP3S.K$
 37750 C $IOTRMSY = 3000$
 37760 C $IOTRM CY = 3000$
 37770 A $IOTRMS.K = CLIP(1, 0, TIME.K, IOTRMSY) * CLIP(1, 0, IOTRM CY, TIME.K)$
 37780 NOTE
 37790 NOTE PERFORMANCE STANDARDS POLICY SECTION
 37800 NOTE
 37810 C $IOTPSSY = 3000$
 37820 C $IOTPSCY = 3000$
 37830 A $IOTPSS.K = CLIP(1, 0, TIME.K, IOTPSSY) * CLIP(1, 0, IOTPSCY, TIME.K)$
 37840 C $IOTPS = 0.0$
 37850 A $IOTPSC.K = TABHL(IOTCCT, IOTPS, 0, .14, .07) * IOTPSS.K$
 37860 NOTE
 37870 NOTE INFORMATION PROGRAMS POLICY SECTION

37880 NOTE
 37890 C $IOTIMP=.5$
 37900 C $IOTIPSY=3000$
 37910 C $IOTIPCY=3000$
 37920 A $IOTIPS.K=CLIP(1,0,TIME.K,IOTIPSY)*CLIP(1,0,IOTIPCY,TIME.K)$
 37930 C $IOTIUPR=.35$
 37940 C $IOTIPD=2$
 37950 C $IOTICPP=200$
 37960 A $IOTIAPR.K=DLINF1(IOTIUPR*IOTPR.K*IOTIPS.K,IOTIPD)$
 37970 N $IOTIPS=0$
 37980 A $IOTIPR.K=IIPDRB.K*IOTIMP$
 37990 A $IOTIWR.K=((1-IOTIAPR.K)*IIPDRB.K)+(IOTIAPR.K*IOTIPR.K)$
 38000 A $IOTIDB.K=CLIP(IIPDRB.K,IOTIWR.K,IOTIPSY,TIME.K)$
 38010 NOTE
 38020 NOTE MAINLINE STRUCTURE
 38030 NOTE
 38040 C $IOTNCB=1E-5$
 38050 NOTE
 38060 NOTE
 38070 NOTE
 38080 A $IOTBWA.K=(1-IIPAPR.K)+(IIPAPR.K*IOTBMA)$
 38090 A $IOTDNO.K=IOTEU.K*IOTPR.K$
 38100 A $IOTDR.K=IOTIDB.K+IDRL$
 38110 A $IOTCRF.K=IOTDR.K/(1-1/(1+IOTDR.K)^{IOTSL})$
 38120 A $IOTCRFB.K=BPADR/(1-1/(1+BPADR)^{IOTSL})$
 38130 A $IOTICN.K=(IAPRU.K*8.76/IOTCRF.K)/(1-ITAXS)$
 38140 A $IOTISN.K=TABHL(IOTCST,IOTICN.K,0,400,100)$
 38150 A $IOTMSNL.K=MAX(0,(IMCE.K-IAPRU.K)*8.76/IOTCRFB.K)$
 38160 A $IOTUS.K=IOTSP1S.K*MIN(IOTMSNL.K,IOTSCAP.K,$
 38170 X $IOTMF.K*IOTICN.K+IOTAS.K)$
 38180 A $IOTICC.K=IOTST.K$
 38190 A $IOTICS.K=TABHL(IOTCST,IOTICC.K,0,400,100)$
 38200 A $IOTINC.K=IOTEU.K*IOTPR.K*IOTICS.K$
 38210 A $IOTNIN.K=MAX(0,(IOTINC.K-IOTNC.K)/IOTSPPD)$
 38220 A $IOTNIR.K=(IOTNC.K/IOTSL)*CLIP(0,1,IOTNC.K,IOTINC.K)$
 38230 R $IOTNCI.KI=IOTNIN.K+IOTNIR.K$
 38240 R $IOTNRR.KI=DELAY3P(IOTNCI.KI,IOTSL,IOTNC.K)$
 38250 N $IOTNCI=IOTNCB/IOTSL$
 38260 A $IOTD.K=IOTDNO.K*IOTBWA.K-IOTNC.K$
 38270 A $IOTCONS.K=IOTDNO.K-IOTD.K$
 38280 A $IOTACS.K=IOTNC.K/(IOTEU.K*IOTPR.K)$
 38290 A $IOTTCC.K=TABHL(IOTTOCT,IOTACS.K,0,.14,.07)$
 38300 A $IOTPC.K=MAX(0,(IOTTCC.K-IOTUC.K)*(1-ITAXS))$
 38310 A $IOTTXC.K=(IOTTCC.K-IOTUC.K)*ITAXS$
 38320 A $IOTUEN.K=IOTUC.K*IOTNIN.K$
 38330 A $IOTPEN.K=IOTPC.K*IOTNIN.K$
 38340 A $IOTTEN.K=IOTTXC.K*IOTNIN.K$
 38350 A $IOTDUC.K=DLINF3(IOTUC.K,IOTSL)$
 38360 A $IOTDPC.K=DLINF3(IOTPC.K,IOTSL)$
 38370 A $IOTDTX.K=DLINF3(IOTTXC.K,IOTSL)$
 38380 A $IOTUER.K=IOTNIR.K*IOTDUC.K*IOTRMS.K$
 38390 A $IOTPER.K=IOTNIR.K*IOTDPC.K+((1-IOTRMS.K)*(1-ITAXS)$
 38400 X $*IOTNIR.K*IOTDUC.K)$
 38410 A $IOTTER.K=IOTNIR.K*IOTDTX.K+((1-IOTRMS.K)*ITAXS$
 38420 X $*IOTNIR.K*IOTDUC.K)$
 38430 A $IOTUE.K=(IOTUEN.K+IOTUER.K)*(1+IOTAC)$
 38440 A $IOTPE.K=IOTPEN.K+IOTPER.K$
 38450 A $IOTTE.K=IOTTEN.K+IOTTER.K$
 38460 NOTE
 38470 L $IOTAUE.K=IOTAUE.J+DT*IOTAUEI.JK$
 38480 N $IOTAUE=0$

38490 R IOTAUEI.KL=IOTUE.K
 38500 NOTE
 38510 A IOTICEO.K=IMCE.K*8.76/IOTCRFB.K
 38520 A IOTICSO.K=TABHL(IOTCST,IOTICEO.K,0,400,100)
 38530 A IOTRNC.K=(IOTAUE.K*IOTCRFB.K)/(87.6*IOTCONS.K)
 38540 NOTE *****
 38550 NOTE
 38560 NOTE DIRECT SERVICE INDUSTRIES DEMAND FOR ELECTRICITY
 38570 NOTE
 38580 NOTE *****
 38590 NOTE
 38600 NOTE
 38610 NOTE EXOGENOUS INPUTS
 38620 NOTE
 38630 A ALP.K=TABHL(ALPT,TIME.K,1984,1995,1)
 38640 T ALPT=53/53/52/51/51/54/55/55/55/55/55/55
 38650 A ALOVC.K=TABHL(ALOVCT,TIME.K,1984,1995,1)+ALOVCE.K
 38660 T ALOVCT=38/38/38/38/38.5/39/39.5/40/40.5/41/41.5/42
 38670 A ALOVCE.K=CLIP(ALOVCI,0,TIME.K,ALOY)
 38680 C ALOY=30000
 38690 C ALOVCI=4
 38700 A ALXCCR.K=TABHL(ALXCCT,TIME.K,1984,2004,5)
 38710 T ALXCCT=0/0/0/0/0
 38720 NOTE
 38730 NOTE
 38740 L ALPCAP.K=ALPCAP.J+DT*(ALPCIR.JK-ALCCR.JK)
 38750 N ALPCAP=ALPC84
 38760 C ALPC84=2.94
 38770 R ALCCR.KL=ALPCAP.K*(ALXCCR.K+ALICCR.K)
 38780 A ALICCR.K=CLIP(MAX(0,(ALNCU-MAX(ALCU.K,ALCUD.K))/ALCCD),
 38790 X 0,TIME.K,ALICY)
 38800 C ALNCU=.90
 38810 A ALCUD.K=DLINF3(ALCU.K,ALCCD)
 38820 C ALCCD=5
 38830 C ALICY=3000
 38840 NOTE
 38850 R ALPCIR.KL=CLIP(ALUMC,0,TIME.K,ALUMSD-1)-CLIP(ALUMC,0,TIME.K,ALUMSD)
 38860 C ALUMC=.35
 38870 C ALUMSD=3000
 38880 NOTE
 38890 A ALIP.K=ALPCAP.K*ALCU.K
 38900 A ALTD.K=ALIP.K*ALAER.K/8.76
 38910 NOTE
 38920 NOTE
 38930 A ALPF.K=ALIP.K/(ALPC84+CLIP(ALUMC,0,TIME.K,ALUMSD))
 38940 A ALAER.K=AIW1.K*ALAERI.K+(1-AIW1.K)*ALAERB.K
 38950 A AIW1.K=TABHL(AIW1T,TIME.K,1986,1996,1)
 38960 T AIW1T=0/0/0/0/0/0/0/0/0/0/0/0/0/0/0/0
 38970 A ALAERB.K=TABHL(ALAERT,ALPF.K,0,1,.2)
 38980 T ALAERT=6.5/6.7/7.2/7.3/7.5/7.7
 38990 A ALAERI.K=TABHL(ALAERT,ALPF.K,0,1,.2)
 39000 T ALAERT=6/6.2/6.6/6.7/6.9/6.94
 39010 A ALEC.K=ALAER.K*DSIR.K/10
 39020 A ALVC.K=ALEC.K+ALVC.K
 39030 A ALPCD.K=ALP.K-ALVC.K
 39040 A ALPCDD.K=SMOOTH(ALPCD.K,ALCUD)
 39050 C ALCUD=1
 39060 A ALCU.K=MIN(1,((ALPC84+CLIP(ALUMC,0,TIME.K,ALUMSD))/ALPCAP.K*ALICU.K))
 39070 A ALICU.K=TABHL(ALCUT,ALPCDD.K,-4,4,1)
 39080 T ALCUT=0/.05/.15/.3/.5/.7/.85/1/1
 39090 N ALPCD=2.5

39100 NOTE
 39110 NOTE CHANGES TO ALLOW UTILITY SUBSIDIES FOR LEVEL 1 OR LEVEL 2
 39120 NOTE
 39130 NOTE MODERNIZATION OF THE DSI INDUSTRIES
 39140 NOTE
 39150 A $DSIUE.K = CLIP(DSUP.K, 0, TIME.K, 1988) - CLIP(DSUP.K, 0, TIME.K, 1994)$
 39160 A $DSUP.K = (240/6) * FDSMCB$
 39170 C $FDSMCB = 0$
 39180 NOTE
 39190 NOTE DEMAND FROM ALUMINUM AND NON-ALUMINUM INDUSTRIES
 39200 NOTE
 39210 A $DSD.K = .75 * (ALTD.K + DSNATD.K)$
 39220 A $DSIL.K = .25 * (ALTD.K + DSNATD.K) + DSOIL.K$
 39230 A $DSNATD.K = TABHL(DSNADT, TIME.K, 1984, 2004, 5)$
 39240 T $DSNADT = .33 / .50 / .70 / .73 / .75$
 39250 A $DSOIL.K = TABHL(DSOILT, TIME.K, 1984, 2004, 5)$
 39260 T $DSOILT = 0 / 0 / 0 / 0 / 0$
 39270 NOTE
 39280 NOTE
 39290 NOTE *****
 39300 NOTE
 39310 NOTE IRRIGATED AGRICULTURE DEMAND FOR ELECTRICITY
 39320 NOTE
 39330 NOTE *****
 39340 NOTE
 39350 A $IAD.K = IASA.K / IASE.K$
 39360 A $IASA.K = IAFS.K * IATA.K$
 39370 A $IAFS.K = TABHL(IAFST, TIME.K, 1984, 2004, 10)$
 39380 T $IAFST = .51 / .52 / .53$
 39390 A $IATA.K = TABHL(IATAT, TIME.K, 1984, 2004, 10)$
 39400 T $IATAT = 8.8 / 9.1 / 9.2$
 39410 NOTE
 39420 A $IASEA.K = TABHL(IASEAT, TIME.K, 1984, 2004, 10)$
 39430 T $IASEAT = 8.3 / 8.3 / 8.3$
 39440 C $IAEFW = 1$
 39450 C $IAEFD = 1$
 39460 A $IASE.K = IASEA.K * (SWITCH(1, 0, HY123.K - 2) + SWITCH(IAEFD, 0, HY123.K - 1) + SWITCH(IAEFW, 0, HY123.K - 3))$
 39470 X
 39480 NOTE
 39490 NOTE
 39500 NOTE *****
 39510 NOTE
 39520 NOTE OTHER DEMANDS (OD) INCLUDE STREET LIGHTING
 39530 NOTE AND FEDERAL AGENCIES, BOTH OF WHICH ARE
 39540 NOTE EXOGENOUS IN THE REGIONAL MODEL
 39550 NOTE
 39560 NOTE *****
 39570 NOTE
 39580 A $OD.K = SLD.K + FAD.K$
 39590 A $SLD.K = TABHL(SLDT, TIME.K, 1984, 2014, 10)$
 39600 T $SLDT = .03 / .04 / .03 / .04$
 39610 NOTE
 39620 A $FAD.K = TABHL(FADT, TIME.K, 1984, 2014, 10)$
 39630 T $FADT = .145 / .19 / .23 / .27$
 39640 NOTE
 39650 NOTE
 39660 NOTE *****
 39670 NOTE
 39680 NOTE OPERATION OF THE HYDRO-THERMAL SYSTEM
 39690 NOTE
 39700 NOTE *****

39710 NOTE
 39720 NOTE
 39730 NOTE
 39740 A $ITCAP.K = ITCAP1.K - ITFS.K - GWITU.K$
 39750 A $ITCAP1.K = 3.9 + CLIP(ITEXP, 0, TIME.K, ITEXPD)$
 39760 C $ITEXP = .9$
 39770 C $ITEXPD = 1990$
 39780 NOTE
 39790 A $FIRML.K = REGFL.K + ITFS.K - NIAP.K$
 39800 A $REGFL.K = REGD.K * TDLF$
 39810 C $TDLF = 1.07$
 39820 NOTE
 39830 A $REGD.K = RD.K + CD.K + ID.K + DSD.K + IAD.K + OD.K$
 39840 NOTE
 39850 NOTE AVAILABILITY FACTORS
 39860 NOTE
 39870 C $NUAF = .65$
 39880 C $COAF = .70$
 39890 C $OGAF = .50$
 39900 C $CTAF = .20$
 39910 NOTE
 39920 NOTE NOW DETERMINE WHICH OF EIGHT
 39930 NOTE CASES IS RELEVANT
 39940 NOTE
 39950 A $CAP1.K = HYCAP.K + SHCAPY.K$
 39960 A $CAP2.K = CAP1.K + NUCAP.K * NUAF$
 39970 A $CAP3.K = CAP2.K + COCAP.K * COAF$
 39980 A $CAP4.K = CAP3.K + OGAP.K * OGAF$
 39990 A $CAP5.K = CAP4.K + CTCAP.K * CTAF$
 40000 NOTE
 40010 A $BQ1.K = CLIP(1, 0, CAP1.K, FIRML.K + DSIL.K + ITCAP.K)$
 40020 A $BQ2.K = CLIP(1, 0, CAP2.K, FIRML.K + DSIL.K + ITCAP.K)$
 40030 A $BQ3.K = CLIP(1, 0, CAP3.K, FIRML.K + DSIL.K + ITCAP.K)$
 40040 A $BQ4.K = CLIP(1, 0, CAP3.K, FIRML.K + DSIL.K)$
 40050 A $BQ5.K = CLIP(1, 0, CAP3.K, FIRML.K)$
 40060 A $BQ6.K = CLIP(1, 0, CAP4.K, FIRML.K)$
 40070 A $BQ7.K = CLIP(1, 0, CAP5.K, FIRML.K)$
 40080 NOTE
 40090 A $CASE.K = 8 - (BQ1.K + BQ2.K + BQ3.K + BQ4.K + BQ5.K + BQ6.K + BQ7.K)$
 40100 NOTE
 40110 NOTE CALCULATE SYSTEM OPERATION BASED
 40120 NOTE ON VALUE OF "CASE"
 40130 NOTE
 40140 A $SPILL.K = CLIP(0, SPILL1.K, CASE.K, 1.1)$
 40150 A $SPILL1.K = (HYCAP.K + SHCAPY.K) - (FIRML.K + DSIL.K + ITCAP.K)$
 40160 A $NUAP.K = CLIP(NUAF * NUCAP.K, 0, CASE.K, 2.1) + SWITCH(NUAP2.K, 0, CASE.K - 2)$
 40170 A $NUAP2.K = FIRML.K + DSIL.K + ITCAP.K - (HYCAP.K + SHCAPY.K)$
 40180 A $COAP.K = CLIP(COAF * COCAP.K, 0, CASE.K, 3.1) + SWITCH(COAP3.K, 0, CASE.K - 3)$
 40190 A $COAP3.K = FIRML.K + DSIL.K + ITCAP.K - (HYCAP.K + SHCAPY.K) - NUCAP.K * NUAF$
 40200 A $ITAP.K = CLIP(0, ITCAP.K, CASE.K, 3.1) + SWITCH(ITAP4.K, 0, CASE.K - 4)$
 40210 A $ITAP4.K = ((HYCAP.K + SHCAPY.K) + NUCAP.K * NUAF + COCAP.K * COAF) - (FIRML.K + DSIL.K)$
 40220 A $OGAP.K = CLIP(OGAF * OGAP.K, 0, CASE.K, 6.1) + SWITCH(OGAP6.K, 0, CASE.K - 6)$
 40230 A $OGAP6.K = FIRML.K - CAP3.K$
 40240 A $CTAP.K = CLIP(CTAF * CTCAP.K, 0, CASE.K, 7.1) + SWITCH(CTAP7.K, 0, CASE.K - 7)$
 40250 A $CTAP7.K = FIRML.K - CAP4.K$
 40260 A $DSLOS.K = CLIP(0, 1, CASE.K, 4.1) + SWITCH(LOS5.K, 0, CASE.K - 5)$
 40270 A $LOS5.K = (CAP3.K - FIRML.K) / DSIL.K$
 40280 A $PURE.K = CLIP(PURE8.K, 0, CASE.K, 7.1)$
 40290 A $PURE8.K = FIRML.K - CAP5.K$
 40300 NOTE
 40310 NOTE FIND THE CAPACITY FACTORS AS A CHECK

40320 NOTE
 40330 A $NUCF.K = NUAP.K / NUCAP.K$
 40340 A $COCF.K = COAP.K / COCAP.K$
 40350 A $OGCF.K = OGAP.K / OGCAP.K$
 40360 A $CTCF.K = CTAP.K / CTCAP.K$
 40370 NOTE
 40380 NOTE
 40390 NOTE TOTAL ENERGY "CONSUMED" AND "PRODUCED"
 40400 NOTE
 40410 A $ECON.K = FIRML.K + DSIL.K * DSLOS.K + ITAP.K + SPILL.K$
 40420 A $EPRO.K = (HYCAP.K + SHCAPY.K) + NUAP.K + COAP.K + OGAP.K + CTAP.K + PURE.K$
 40430 NOTE
 40440 NOTE FIND TOTAL , VARIABLE COSTS OF SYSTEM OPERATION
 40450 NOTE
 40460 NOTE
 40470 NOTE BEGIN WITH USER-SPECIFIED UNIT FUEL COSTS (MILLS/KWHR)
 40480 NOTE
 40490 A $NUUFC.K = NUUF80 * NUESF.K$
 40500 A $COUFC.K = COUF80 * COESF.K$
 40510 A $OGUFC.K = OGUF80 * OGESF.K$
 40520 A $CTUFC.K = CTUF80 * CTESF.K$
 40530 NOTE
 40540 C $NUUF80 = 6$
 40550 C $COUF80 = 10$
 40560 C $OGUF80 = 55$
 40570 C $CTUF80 = 90$
 40580 NOTE
 40590 NOTE THEN SPECIFY UNIT O&M COSTS (MILLS/KWHR)
 40600 NOTE
 40610 A $NUUOC.K = NUUO80 * NUESO.K$
 40620 A $COUOC.K = COUO80 * COESO.K$
 40630 A $OGUOC.K = OGUO80 * OGESO.K$
 40640 A $CTUOC.K = CTUO80 * CTESO.K$
 40650 A $HYUOC.K = HYUO80 * HYESO.K$
 40660 NOTE
 40670 C $NUUO80 = 6$
 40680 C $COUO80 = 4$
 40690 C $OGUO80 = 2$
 40700 C $CTUO80 = 2$
 40710 C $HYUO80 = 1$
 40720 NOTE
 40730 NOTE
 40740 NOTE
 40750 NOTE VARIABLE COSTS (MILLION \$/YR)
 40760 NOTE
 40770 A $NUACO.K = NUAP.K * 8.760 * (NUUFC.K + NUUOC.K)$
 40780 A $COACO.K = COAP.K * 8.76 * (COUFC.K + COUOC.K)$
 40790 A $OGACO.K = OGAP.K * 8.76 * (OGUFC.K + OGUOC.K)$
 40800 A $CTACO.K = CTAP.K * 8.76 * (CTUFC.K + CTUOC.K)$
 40810 A $HYACO.K = (HYCAP.K + SHCAPY.K) * 8.76 * HYUOC.K$
 40820 NOTE
 40830 NOTE COST OF PURCHASES DEPENDS ON THE AMOUNT PURCHASED
 40840 NOTE
 40850 NOTE
 40860 A $PUEUC.K = PUESP.K * PUEES.K$
 40870 A $PUESP.K = TABHL(PUSPT, PURE.K, 0, 3, .2)$
 40880 T $PUSPT = 35/35/35/39/45/53/58/62/65/68/70/72/73/74/75/76$
 40890 NOTE
 40900 A $PUEAC.K = PURE.K * 8.76 * PUEUC.K$
 40910 NOTE
 40920 A $TACO.K = HYACO.K + NUACO.K + COACO.K + OGACO.K + CTACO.K + PUEAC.K$

40930 A $NACO.K = TACO.K + NIAC.K - (SSREVC.K + ITFREV.K + ITGWRV.K)$
 40940 NOTE
 40950 NOTE RATIOS OF INTEREST
 40960 NOTE
 40970 A $HYFOC.K = HYACO.K / TACO.K$
 40980 A $NUFOC.K = NUACO.K / TACO.K$
 40990 A $COFOC.K = COACO.K / TACO.K$
 41000 A $OGFOC.K = OGACO.K / TACO.K$
 41010 A $CTFOC.K = CTACO.K / TACO.K$
 41020 A $PUFOC.K = PUEAC.K / TACO.K$
 41030 NOTE
 41040 A $AVSOC.K = TACO.K / ((ECON.K - SPILL.K) * 8.76)$
 41050 A $NASOC.K = NACO.K / ((ECON.K - SPILL.K) * 8.76)$
 41060 NOTE
 41070 NOTE
 41080 NOTE SECONDARY RATES AND REVENUES
 41090 NOTE
 41100 NOTE HYDRO STANDARD RATE, HYDRO SPILL RATE, THERMAL
 41110 NOTE INCREMENTAL COSTS, AND THERMAL FULLY ALLOCATED COSTS
 41120 NOTE
 41130 A $HYSTR.K = HYST80 * HYSTES.K$
 41140 C $HYST80 = 15.5$
 41150 A $HYSR.K = HYSR80 * HYSRSPES.K$
 41160 C $HYSR80 = 11$
 41170 NOTE
 41180 A $NUIC.K = NUUFC.K + NUUOC.K + SSAC.K$
 41190 A $COIC.K = COUFC.K + COUOC.K + SSAC.K$
 41200 A $SSAC.K = SSAC80 * SSACES.K$
 41210 C $SSAC80 = 2$
 41220 NOTE
 41230 A $NUFAC.K = 45 * INFLA.K$
 41240 A $COFAC.K = 45 * INFLA.K$
 41250 NOTE
 41260 NOTE HYDRO "INCREMENTAL COST"
 41270 NOTE
 41280 A $HYIC.K = HYSR.K + (HYSTR.K - HYSR.K) * HYICM.K$
 41290 A $HYICM.K = TABHL(HYICMT, ITUSE.K, 0, 1, .1)$
 41300 T $HYICMT = 1/1/.9/.6/.3/.1/.05/0/0/0/0$
 41310 A $ITUSE.K = ITAP.K / ITCAP.K$
 41320 NOTE
 41330 NOTE CALIFORNIA LOW AND HIGH RATES
 41340 NOTE
 41350 A $SSCLR.K = SSCL80 * SSCLES.K$
 41360 C $SSCL80 = 14.7$
 41370 A $SSCHR.K = SSCH80 * SSCHES.K$
 41380 C $SSCH80 = 24.5$
 41390 NOTE
 41400 NOTE WHAT RATE IS CALIFORNIA WILLING TO PAY?
 41410 NOTE
 41420 A $SSCRM.K = SSCLR.K + (SSCHR.K - SSCLR.K) * SSCRM.K$
 41430 A $SSCRM.K = TABHL(SSCRMT, ITUSE.K, 0, 1, .1)$
 41440 T $SSCRMT = 1/1/.9/.6/.3/.1/.05/0/0/0/0$
 41450 NOTE
 41460 NOTE FIND FRACTION OF INTER-TIE'S SECONDARY POWER DUE TO HYDRO, COAL, NUCLEAR
 41470 NOTE
 41480 A $ITHYF.K = MAX((HYCAP.K + SHCAPY.K) - FIRML.K - DSIL.K - SPILL.K) /$
 41490 X $MAX(ITAP.K, .001), 0)$
 41500 A $ITCOF.K = MIN(COAP.K / MAX(ITAP.K, .001), 1.0)$
 41510 A $ITNUF.K = 1 - ITHYF.K - ITCOF.K$
 41520 NOTE
 41530 NOTE "MAXIMUM", "MINIMUM", AND "CURRENT" POLICY RATES

41540 NOTE FOR SECONDARY SALES
 41550 NOTE
 41560 NOTE THE "MAXIMUM RATE" IS A WEIGHTED COMBINATION OF THE FULLY
 41570 NOTE ALLOCATED COST OF THE THERMAL RESOURCES OPERATING
 41580 NOTE BUT LIMITED BY WHAT CALIFORNIA WOULD PAY
 41590 NOTE
 41600 A $SSMAXR.K = \min(SSCMR.K, SSFACR.K)$
 41610 A $SSFACR.K = ITHYF.K * HYSTR.K + ITNUF.K * NUFAC.K + ITCOF.K * COFAC.K$
 41620 NOTE
 41630 NOTE THE "MINIMUM RATE" IS THE INCREMENTAL COST OF
 41640 NOTE THE RESOURCE USED, PROVIDED THIS COST DOES NOT
 41650 NOTE EXCEED WHAT CALIFORNIA WOULD PAY
 41660 NOTE
 41670 A $SSMINR.K = \min(MRIC.K, SSCMR.K)$
 41680 A $MRIC.K = \text{SWITCH}(HYSPR.K, 0, \text{CASE.K} - 1) + \text{CLIP}(MRICT.K, 0, \text{CASE.K}, 1.5)$
 41690 A $MRICT.K = ITHYF.K * \min(HYSPR.K, SSCMR.K) +$
 41700 X $ITNUF.K * \min(NUIC.K, SSCMR.K) +$
 41710 X $ITCOF.K * \min(COIC.K, SSCMR.K)$
 41720 NOTE
 41730 NOTE THE "CURRENT POLICY RATE"
 41740 NOTE
 41750 A $SSCPR.K = \text{CLIP}(SSMINR.K, SSMAXR.K, ITUSE.K, .9)$
 41760 NOTE
 41770 NOTE
 41780 NOTE REVENUE FROM SECONDARY SALES
 41790 NOTE
 41800 A $SSREVVH.K = ITAP.K * SSMAXR.K * 8.76$
 41810 A $SSREVL.K = ITAP.K * SSMINR.K * 8.76$
 41820 A $SSREVC.K = ITAP.K * SSCPR.K * 8.76$
 41830 NOTE
 41840 NOTE FIRM SALES TO CALIFORNIA
 41850 NOTE
 41860 A $ITFS.K = \text{CLIP}(ITFSCS, 0, \text{TIME.K}, ITFSBD) -$
 41870 X $\text{CLIP}(ITFSCS, 0, \text{TIME.K}, ITFSBD + ITFSCD)$
 41880 C $ITFSCS = 0$
 41890 C $ITFSBD = 1986$
 41900 C $ITFSCD = 10$
 41910 A $ITFREX.K = ITFS.K * ITFSR.K * 8.76$
 41920 A $ITFSR.K = ITFS80 * ITFSES.K$
 41930 C $ITFS80 = 40$
 41940 NOTE
 41950 NOTE GENERIC WHEELING USE OF INTERTIE
 41960 NOTE
 41970 A $GWITU.K = \text{CLIP}(GWFSCS, 0, \text{TIME.K}, GWFSD) -$
 41980 X $\text{CLIP}(GWFSCS, 0, \text{TIME.K}, GWFSD + GWFSCD)$
 41990 C $GWFSCS = .1$
 42000 C $GWFSD = 1982$
 42010 C $GWFSCD = 8$
 42020 A $ITGWRV.K = GWITU.K * GWUR.K * 8.76$
 42030 A $GWUR.K = GWUR80 * INFLA.K$
 42040 C $GWUR80 = 2.5$
 42050 NOTE
 42060 NOTE IMPORTS/EXPORTS FROM EASTERN MONTANA
 42070 NOTE
 42080 A $IMAP.K = \text{TABHL}(\text{IMAPT}, \text{TIME.K}, 1984, 2004, 5)$
 42090 T $\text{IMAPT} = 1.95 / 1.40 / 1.40 / 1.24 / 1.02$
 42100 A $EXAP.K = \text{TABHL}(\text{EXAPT}, \text{TIME.K}, 1984, 2004, 5)$
 42110 T $\text{EXAPT} = .48 / .17 / .17 / .12 / .12$
 42120 NOTE
 42130 A $IMACR.K = \text{IMCR80} * \text{INFLA.K}$
 42140 A $EXACR.K = \text{EXCR80} * \text{INFLA.K}$

42150 C IMCR80=15
 42160 C EXCR80=15
 42170 A NIAP.K=IMAP.K*8.76*IMACR.K-EXAP.K*8.76*EXACR.K
 42180 A NIAP.K=IMAP.K-EXAP.K
 42190 NOTE
 42200 NOTE
 42210 NOTE
 42220 NOTE *****
 42230 NOTE
 42240 NOTE CAPACITY & ASSETS ACCUMULATION
 42250 NOTE
 42260 NOTE *****
 42270 NOTE
 42280 NOTE
 42290 NOTE NUCLEAR CAPACITY (NU) INCLUDES EXISTING UNITS (HANFORD AND
 42300 NOTE TROJAN) AND THE 5 WPPSS UNITS. WPPSS 1,2,3 ARE TREATED
 42310 NOTE INDIVIDUALLY WHILE UNITS 4,5 ARE ASSUMED TO BE PERMANENTLY
 42320 NOTE CANCELED. NO FURTHER NUCLEAR CONSTRUCTION IS ASSUMED.
 42330 NOTE
 42340 NOTE
 42350 NOTE
 42360 NOTE
 42370 NOTE FIRST, KEEP TRACK OF 3 TYPES OF CAPACITY (GW)
 42380 NOTE
 42390 L NUCAP.K=NUCAP.J+(DT) (W1COLR.JK+W2COLR.JK+W3COLR.JK-NUCRR.JK)
 42400 N NUCAP=1.48
 42410 R NUCRR.KL=HACAP*PULSE(1/DT,HARY,300)
 42420 C HACAP=.4
 42430 C HARY=1993
 42440 NOTE
 42450 L W1CUC.K=W1CUC.J-(DT) (W1COLR.JK+W1CCR.JK)
 42460 L W2CUC.K=W2CUC.J-(DT) (W2COLR.JK+W2CCR.JK)
 42470 L W3CUC.K=W3CUC.J-(DT) (W3COLR.JK+W3CCR.JK)
 42480 N W1CUC=1.25
 42490 N W2CUC=1.10
 42500 N W3CUC=1.24
 42510 R W1COLR.KL=(W1CUC.K/DT) *W1OL.K
 42520 R W2COLR.KL=(W2CUC.K/DT) *W2OL.K
 42530 R W3COLR.KL=(W3CUC.K/DT) *W3OL.K
 42540 C W1OLD=1991.7
 42550 C W2OLD=1984.8
 42560 C W3OLD=1992.3
 42570 A W1OL.K=CLIP(1,0,TIME.K,W1OLD)
 42580 A W2OL.K=CLIP(1,0,TIME.K,W2OLD)
 42590 A W3OL.K=CLIP(1,0,TIME.K,W3OLD)
 42600 NOTE
 42610 A W1C.K=CLIP(1,0,TIME.K,W1CD)
 42620 A W2C.K=CLIP(1,0,TIME.K,W2CD)
 42630 A W3C.K=CLIP(1,0,TIME.K,W3CD)
 42640 NOTE
 42650 R W1CCR.KL=(W1CUC.K/DT) *W1C.K
 42660 R W2CCR.KL=(W2CUC.K/DT) *W2C.K
 42670 R W3CCR.KL=(W3CUC.K/DT) *W3C.K
 42680 NOTE
 42690 C W1CD=3000
 42700 C W2CD=3000
 42710 C W3CD=3000
 42720 NOTE
 42730 L NUCCAP.K=NUCCAP.J+(DT) (W1CCR.JK+W2CCR.JK+W3CCR.JK)
 42740 N NUCCAP=2.49
 42750 NOTE

42760 NOTE NOW KEEP TRACK OF CWIP AND THE ASSETS FROM CONSTRUCTION
 42770 NOTE
 42780 NOTE
 42790 R $W1NPAC.KL = (W1CWIP.K / DT) * W1OL.K$
 42800 R $W2NPAC.KL = (W2CWIP.K / DT) * W2OL.K$
 42810 R $W3NPAC.KL = (W3CWIP.K / DT) * W3OL.K$
 42820 NOTE
 42830 L $W1CWIP.K = W1CWIP.J + (DT) (W1NC.JK - W1NPAC.JK - W1PACR.JK)$
 42840 L $W2CWIP.K = W2CWIP.J + (DT) (W2NC.JK - W2NPAC.JK - W2PACR.JK)$
 42850 L $W3CWIP.K = W3CWIP.J + (DT) (W3NC.JK - W3NPAC.JK - W3PACR.JK)$
 42860 NOTE
 42870 N $W1CWIP = 1800$
 42880 N $W2CWIP = 2500$
 42890 N $W3CWIP = 1900$
 42900 NOTE
 42910 R $W1PACR.KL = (W1CWIP.K / DT) * W1C.K$
 42920 R $W2PACR.KL = (W2CWIP.K / DT) * W2C.K$
 42930 R $W3PACR.KL = (W3CWIP.K / DT) * W3C.K$
 42940 NOTE
 42950 R $W1NC.KL = W1CUC.K * NUCCEA.K * W1FCY.K$
 42960 R $W2NC.KL = W2CUC.K * NUCCEA.K * W2FCY.K$
 42970 R $W3NC.KL = W3CUC.K * NUCCEA.K * W3FCY.K$
 42980 NOTE
 42990 A $W1FCY.K = TABHL(W1FCYT, TIME.K, 1984, 1994, 1)$
 43000 A $W2FCY.K = TABHL(W2FCYT, TIME.K, 1984, 1988, 1)$
 43010 A $W3FCY.K = TABHL(W3FCYT, TIME.K, 1984, 1994, 1)$
 43020 NOTE
 43030 T $W1FCYT = .02 / .02 / .10 / .20 / .20 / .10 / 0 / 0 / 0 / 0 / 0$
 43040 T $W2FCYT = .05 / 0 / 0 / 0 / 0$
 43050 T $W3FCYT = .02 / .06 / .30 / 0 / 0 / 0 / 0 / 0 / 0 / 0$
 43060 NOTE
 43070 NOTE
 43080 NOTE
 43090 A $NUCCEA.K = NUOCC.K * NUESC.K$
 43100 A $NUOCC.K = 1500$
 43110 NOTE
 43120 L $NUPACC.K = NUPACC.J + (DT) (W1PACR.JK + W2PACR.JK + W3PACR.JK)$
 43130 N $NUPACC = 2250$
 43140 NOTE
 43150 NOTE NOW KEEP TRACK OF THE AFUDC
 43160 NOTE
 43170 NOTE
 43180 R $W1NPAA.KL = (W1ARC.K / DT) * W1OL.K$
 43190 R $W2NPAA.KL = (W2ARC.K / DT) * W2OL.K$
 43200 R $W3NPAA.KL = (W3ARC.K / DT) * W3OL.K$
 43210 NOTE
 43220 L $W1ARC.K = W1ARC.J + (DT) (W1NAR.JK - W1NPAA.JK - W1PAAC.JK)$
 43230 L $W2ARC.K = W2ARC.J + (DT) (W2NAR.JK - W2NPAA.JK - W2PAAC.JK)$
 43240 L $W3ARC.K = W3ARC.J + (DT) (W3NAR.JK - W3NPAA.JK - W3PAAC.JK)$
 43250 N $W1ARC = 0$
 43260 N $W2ARC = 0$
 43270 N $W3ARC = 500$
 43280 R $W1PAAC.KL = (W1ARC.K / DT) * W1C.K$
 43290 R $W2PAAC.KL = (W2ARC.K / DT) * W2C.K$
 43300 R $W3PAAC.KL = (W3ARC.K / DT) * W3C.K$
 43310 NOTE
 43320 R $W1NAR.KL = (1 - W1FCRB) * WCC.K * (W1CWIP.K + W1ARC.K)$
 43330 R $W2NAR.KL = (1 - W2FCRB) * WCC.K * (W2CWIP.K + W2ARC.K)$
 43340 R $W3NAR.KL = (1 - W3FCRB) * WCC.K * (W3CWIP.K + W3ARC.K)$
 43350 NOTE
 43360 C $W1FCRB = 1.0$

43370 C W2FCRB=1.0
 43380 C W3FCRB=.7
 43390 NOTE
 43400 L NUPACA.K=NUPACA.J+(DT) (W1PAAC.JK+W2PAAC.JK+W3PAAC.JK)
 43410 N NUPACA=0
 43420 NOTE
 43430 NOTE BOOK ASSETS AND TAX ASSETS FROM NUCLEAR PLANT
 43440 NOTE
 43450 L NUNA.K=NUNA.J+DT* (W1NPAC.JK+W2NPAC.JK+W3NPAC.JK+W1NPAA.JK+
 43460 X W2NPAA.JK+W3NPAA.JK-NUNAD.JK)
 43470 N NUNA=2000
 43480 R NUNAD.KL=NUNA.K/NUBL
 43490 C NUBL=30
 43500 NOTE
 43510 L NUTA.K=NUTA.J+DT* (W1NPAC.JK+W2NPAC.JK+W3NPAC.JK-NUTAD.JK)
 43520 N NUTA=2000
 43530 R NUTAD.KL=NUTA.K/NUTL
 43540 C NUTL=30
 43550 NOTE
 43560 NOTE COAL FIRED CAPACITY (OO) INCLUDES EXISTING UNITS, UNITS
 43570 NOTE UNDER CONSTRUCTION, AND NEW CONSTRUCTION THAT MAY BE REQUIRED
 43580 NOTE IN THE FUTURE
 43590 NOTE
 43600 NOTE
 43610 C COAT1=1.333
 43620 C COAT2=1.333
 43630 C COAT3=1.333
 43640 A COCCD.K=COAT1+COAT2+COAT3
 43650 C COFC1=.25
 43660 C COFC2=.50
 43670 C COFC3=.25
 43680 A COOCC.K=1000
 43690 A COFCRB.K=.5
 43700 NOTE
 43710 NOTE
 43720 NOTE KEEP TRACK OF CAPACITY (GW) IN THREE STAGES OF CONSTRUCTION
 43730 NOTE IN PROGRESS AND EVENTUALLY ON LINE.
 43740 NOTE
 43750 L COCAP.K=COCAP.J+(DT) (COOOLR.JK-COCRR.JK)
 43760 N COCAP=COCAPI
 43770 C COCAPI=2.943
 43780 L COCUC3.K=COCUC3.J+(DT) (COCR2.JK-COOOLR.JK)
 43790 N COCUC3=COCU3I
 43800 C COCU3I=1.101
 43810 L COCUC2.K=COCUC2.J+(DT) (COCR1.JK-COCR2.JK)
 43820 N COCUC2=COCU2I
 43830 C COCU2I=0
 43840 L COCUC1.K=COCUC1.J+(DT) (COCAR.JK-COCR1.JK)
 43850 N COCUC1=COCU1I
 43860 C COCU1I=0
 43870 A COCUC.K=COCUC1.K+COCUC2.K+COCUC3.K
 43880 NOTE
 43890 NOTE FLOW OF CAPACITY (GW/YR) FROM ONE LEVEL TO ANOTHER.
 43900 NOTE
 43910 R COCRR.KL=0
 43920 R COOOLR.KL=COCUC3.K/COAT3
 43930 R COCR2.KL=COCUC2.K/COAT2
 43940 R COCR1.KL=COCUC1.K/COAT1
 43950 NOTE
 43960 NOTE KEEP TRACK OF CWIP (MILLION \$) IN THREE STAGES OF CONSTRUCTION
 43970 NOTE AND EVENTUALLY AS PLANT ASSETS.

43980 NOTE
 43990 L $CONA.K = CONA.J + DT * (CONPAC.JK + CONPAA.JK - CONAD.JK)$
 44000 N $CONA = CONAI$
 44010 C $CONAI = 2000$
 44020 R $CONAD.KL = CONA.K / COBL$
 44030 C $COBL = 40$
 44040 NOTE
 44050 L $COOWP3.K = COOWP3.J + (DT) (CONC3.JK + COOWR2.JK - CONPAC.JK)$
 44060 N $COOWP3 = COOW3I$
 44070 C $COOW3I = 2200$
 44080 L $COOWP2.K = COOWP2.J + (DT) (CONC2.JK + COOWR1.JK - COOWR2.JK)$
 44090 N $COOWP2 = COOW2I$
 44100 C $COOW2I = 0$
 44110 L $COOWP1.K = COOWP1.J + (DT) (CONC1.JK - COOWR1.JK)$
 44120 N $COOWP1 = COOW1I$
 44130 C $COOW1I = 0$
 44140 NOTE
 44150 NOTE FLOW OF ASSETS (MILLION \$/YR) FROM ONE LEVEL TO ANOTHER.
 44160 NOTE
 44170 R $COPACR.KL = 0$
 44180 R $CONPAC.KL = COOWP3.K / COAT3$
 44190 R $COOWR2.KL = COOWP2.K / COAT2$
 44200 R $COOWR1.KL = COOWP1.K / COAT1$
 44210 NOTE
 44220 R $CONC3.KL = COCUC3.K * COCCEA.K * COFC3 / COAT3$
 44230 R $CONC2.KL = COCUC2.K * COCCEA.K * COFC2 / COAT2$
 44240 R $CONC1.KL = COCUC1.K * COCCEA.K * COFC1 / COAT1$
 44250 NOTE
 44260 A $COCCEA.K = COOCC.K * COESC.K$
 44270 NOTE
 44280 A $COOWIP.K = COOWP1.K + COOWP2.K + COOWP3.K$
 44290 A $CONC.K = CONC1.JK + CONC2.JK + CONC3.JK$
 44300 NOTE
 44310 NOTE
 44320 NOTE KEEP TRACK OF ACCUMULATED AFUDC (MILLIONS \$) IN THREE STAGES OF
 44330 NOTE CONSTRUCTION AND EVENTUALLY AS POSSIBLY CONTRIBUTING TO PLANT
 44340 NOTE ASSETS
 44350 NOTE
 44360 L $COTA.K = COTA.J + DT * (CONPAC.JK - COTAD.JK)$
 44370 N $COTA = COTAI$
 44380 C $COTAI = 2000$
 44390 R $COTAD.KL = COTA.K / COTL$
 44400 C $COTL = 30$
 44410 L $COARC3.K = COARC3.J + (DT) (CONAR3.JK + COACR2.JK - CONPAA.JK)$
 44420 N $COARC3 = COAC3I$
 44430 C $COAC3I = 200$
 44440 L $COARC2.K = COARC2.J + (DT) (CONAR2.JK + COACR1.JK - COACR2.JK)$
 44450 N $COARC2 = COAC2I$
 44460 C $COAC2I = 0$
 44470 L $COARC1.K = COARC1.J + (DT) (CONAR1.JK - COACR1.JK)$
 44480 N $COARC1 = COAC1I$
 44490 C $COAC1I = 0$
 44500 NOTE
 44510 NOTE FLOW OF ACCUMULATED AFUDC FROM ONE LEVEL TO ANOTHER
 44520 NOTE
 44530 R $COPAAR.KL = 0$
 44540 R $CONPAA.KL = COARC3.K / COAT3$
 44550 R $COACR2.KL = COARC2.K / COAT2$
 44560 R $COACR1.KL = COARC1.K / COAT1$
 44570 NOTE
 44580 R $CONAR3.KL = (COOWP3.K + COARC3.K) * WCC.K * (1 - COFCRB.K)$

[illegible]

45200 N CTCAP=.96
 45210 R CTCRR.KL=0
 45220 R CTOOLR.KL=DELAY3P(CTCIR.JK,CTCD,CTCUC.K)
 45230 C CTCD=1
 45240 N CTOOLR=0
 45250 NOTE
 45260 L CTNA.K=CTNA.J+DT*(CTNPAC.JK-CTNAD.JK)
 45270 N CTNA=150
 45280 R CTNAD.KL=CTNA.K/CTBL
 45290 C CTBL=30
 45300 R CTNPAC.KL=CTOOLR.JK*CTOCC.K*CTESC.K
 45310 A CTOCC.K=150
 45320 NOTE
 45330 NOTE
 45340 NOTE TOTALS
 45350 NOTE

45360 A TNA.K=NUNA.K+CONA.K+OGNA.K+(HYNA.K+SHNA.K)+CTNA.K+TRNA.K+DINA.K
 45370 A TCWIP.K=W1CWIP.K+W2CWIP.K+W3CWIP.K+COCWIP.K
 45380 A
 TNC.K=W1NC.JK+W2NC.JK+W3NC.JK+CONC.K+CTNPAC.JK+TRNAA.JK+DINAA.JK+SHNPAC.JK
 45390 A TTA.K=NUTA.K+OTA.K+OGTA.K+(HYTA.K+SHTA.K)+CTNA.K+TRTA.K+DITA.K
 45400 A TARC.K=W1ARC.K+W2ARC.K+W3ARC.K+COARC.K
 45410 A TNARC.K=W1NAR.JK+W2NAR.JK+W3NAR.JK+CONAR.K
 45420 A TTCAP.K=NUCAP.K+COCAP.K+OGCAP.K+CTCAP.K
 45430 A TNAD.K=NUNAD.JK+CONAD.JK+OGNAD.JK+HYNAD.JK+CTNAD.JK+
 45440 X TRNAD.JK+DINAD.JK+SHNAD.JK
 45450 A TTAD.K=NUTAD.JK+COTAD.JK+OGTAD.JK+HYTAD.JK+CTNAD.JK+
 45460 X TRTAD.JK+DITAD.JK+SHTAD.JK
 45470 NOTE
 45480 NOTE
 45490 NOTE

TRANSMISSION AND DISTRIBUTION ASSETS

45500 NOTE
 45510 NOTE
 45520 NOTE
 45530 NOTE TRANSMISSION ASSETS INCLUDE SERVING NEWLY CONSTRUCTED
 45540 NOTE GENERATING CAPACITY AS WELL AS GENERAL MAINTENANCE
 45550 NOTE OF THE TRANSMISSION NETWORK
 45560 NOTE

45570 A TOOLR.K=W1COLR.JK+W2COLR.JK+W3COLR.JK+COOLR.JK+CTOOLR.JK+SHCOLR.JK
 45580 A TRCC.K=TRCC80*TRESC.K
 45590 C TRCC80=250
 45600 L TRNA.K=TRNA.J+DT*(TRNAA.JK-TRNAD.JK)
 45610 N TRNA=TRNA84
 45620 C TRNA84=4000
 45630 R TRNAD.KL=TRNA.K/TRBL
 45640 R TRNAA.KL=TRAAGC.K+TRAAMS.K
 45650 A TRAAGC.K=TOOLR.K*TRCC.K
 45660 C TRBL=30
 45670 L TRTA.K=TRTA.J+DT*(TRTAA.JK-TRTAD.JK)
 45680 N TRTA=TRTA84
 45690 C TRTA84=4000
 45700 R TRTAD.KL=TRTA.K/TRTL
 45710 R TRTAA.KL=TRAAGC.K+TRAAMS.K
 45720 C TRTL=30
 45730 A TRAAMS.K=TRAM80*TRESO.K
 45740 C TRAM80=250
 45750 NOTE
 45760 NOTE DISTRIBUTION ASSETS INCLUDE SERVING GROWTH IN CUSTOMERS
 45770 NOTE AS WELL AS GENERAL MAINTENANCE OF SERVICE
 45780 NOTE
 45790 A DIAAGC.K=RNHS.K*DIAH.K+CNBS.K*DIACFS.K+

45800 X (IMDEG.JK+ILIEG.JK+IOTEG.JK)*DIAIF.K*1E-6
 45810 A DIAIF.K=DIAI80*DIESO.K
 45820 C DIAI80=50E6
 45830 A DIAH.K=DIAH80*DIESO.K
 45840 C DIAH80=2E3
 45850 A DIACFS.K=DIAC80*DIESO.K
 45860 C DIAC80=1E3
 45870 NOTE
 45880 L DINA.K=DINA.J+DT*(DINAA.JK-DINAD.JK)
 45890 N DINA=DINA84
 45900 C DINA84=6000
 45910 R DINAD.KL=DINA.K/DIBL
 45920 C DIBL=30
 45930 NOTE
 45940 R DINAA.KL=DIAAGC.K+DIAAMS.K
 45950 A DIAAMS.K=DIAM80*DIESO.K
 45960 C DIAM80=750
 45970 NOTE
 45980 L DITA.K=DITA.J+DT*(DITAA.JK-DITAD.JK)
 45990 N DITA=DITA84
 46000 C DITA84=6000
 46010 R DITAD.KL=DITA.K/DITL
 46020 C DITL=30
 46030 R DITAA.KL=DIAAGC.K+DIAAMS.K
 46040 NOTE
 46050 NOTE
 46060 NOTE SMALL HYDRO (SH) HAS A SHORT LEAD TIME, SO
 46070 NOTE MODEL 1 WILL NOT BOTHER WITH THE COMPLICATED
 46080 NOTE CALCULATION OF CWIP/AND OR/AFUDC DURING
 46090 NOTE THE CONSTRUCTION INTERVAL
 46100 NOTE
 46110 NOTE
 46120 L SHCAP.K=SHCAP.J+DT*(SHCOLR.JK-SHCRR.JK)
 46130 N SHCAP=0
 46140 R SHCRR.KL=0
 46150 R SHCOLR.KL=DELAY3P(SHCIR.JK,SHCD,SHCUC.K)
 46160 C SHCD=2
 46170 N SHCOLR=0
 46180 N SHCIR=0
 46190 NOTE
 46200 L SHNA.K=SHNA.J+DT*(SHNPAC.JK-SHNAD.JK)
 46210 N SHNA=0
 46220 R SHNAD.KL=SHNA.K/SHBL
 46230 C SHBL=40
 46240 R SHNPAC.KL=SHCOLR.JK*SHESC.K*MIN(SHOCC.K,SHMPOC)
 46250 C SHMPOC=3000
 46260 A SHOCC.K=TABHL(SHOCCT,SHCAP.K+SHCUC.K,0,4,.5)
 46270 T SHOCCT=1E5/1E5/1E5/1E5/1E5/1E5/1E5/1E5
 46280 NOTE
 46290 L SHTA.K=SHTA.J+DT*(SHNPAC.JK-SHTAD.JK)
 46300 N SHTA=0
 46310 R SHTAD.KL=SHTA.K/SHTL
 46320 C SHTL=30
 46330 NOTE
 46340 NOTE SET "SHCAPY" ACCORDING TO WHETHER THE CURRENT YEAR
 46350 NOTE IS WET, DRY, OR AVERAGE
 46360 NOTE
 46370 A SHCAPY.K=SWITCH(SHCAP.K,0,HY123.K-1)+SWITCH(SHCAP.K*SHAYI,
 46380 X 0,HY123.K-2)+SWITCH(SHCAP.K*SHWYI,0,HY123.K-3)
 46390 C SHAYI=1.25
 46400 C SHWYI=1.40

46410 NOTE
 46420 NOTE *****
 46430 NOTE
 46440 NOTE CAPACITY EXPANSION PLANNING
 46450 NOTE
 46460 NOTE *****
 46470 NOTE
 46480 NOTE
 46490 NOTE THIS SECTOR IS RESPONSIBLE FOR PREPARING AN INTERNAL
 46500 NOTE FORECAST OF THE FIRM LOAD IN THE FUTURE. AFTER ACCOUNTING
 46510 NOTE FOR EXISTING CAPACITY, NEW CONSTRUCTION, AND RETIREMENTS,
 46520 NOTE THIS SECTOR DETERMINES NEW CAPACITY INITIATIONS
 46530 NOTE TO MEET THE FORECASTED LOAD. THE INITIATIONS ARE SPLIT
 46540 NOTE BETWEEN COAL AND SMALL HYDRO BASED ON A COMPARISON OF
 46550 NOTE THEIR LEVELIZED COSTS (MILLS/KWHR)
 46560 NOTE
 46570 NOTE LENGTH OF THE FORECASTING HORIZON DEPENDS ON HOW LONG IT TAKES
 46580 NOTE TO GET NEW COAL CAPACITY PLANNED AND CONSTRUCTED
 46590 NOTE
 46600 A $FHOR.K = CLIP(6, 3, FCHCO.K, .25)$
 46610 NOTE
 46620 A $FFLOAD.K = (FCSD.K + FRSD.K + FISD.K + FDSO.K + FIAD.K + FOD.K) * TDLF$
 46630 NOTE
 46640 NOTE
 46650 NOTE INTERNAL PLANNING FORECAST OF RSD
 46660 NOTE
 46670 A $RSDD.K = DLINF3(RD.K, FAVER)$
 46680 C $FAVER = 3$
 46690 A $RSADGR.K = CLIP((RD.K - RSDD.K) / (FAVER * RD.K), RSDGRI, TIME.K, 1990)$
 46700 C $RSDGRI = .014$
 46710 A $EFRSD.K = RD.K * EXP(RSADGR.K * FHOR.K)$
 46720 NOTE
 46730 A $FRSD.K = EFRSD.K + RSFEF.K * (EFRSD.K - RD.K)$
 46740 A $RSFEF.K = TABHL(RSFEFT, TIME.K, 1984, 2004, 5)$
 46750 T $RSFEFT = 0/0/0/0/0$
 46760 NOTE
 46770 NOTE INTERNAL PLANNING FORECAST OF CSD
 46780 NOTE
 46790 A $CSDD.K = DLINF3(CD.K, FAVER)$
 46800 A $CSADGR.K = CLIP((CD.K - CSDD.K) / (FAVER * CD.K), CSDGRI, TIME.K, 1990)$
 46810 C $CSDGRI = .02$
 46820 A $EFCSD.K = CD.K * EXP(CSADGR.K * FHOR.K)$
 46830 NOTE
 46840 A $FCSD.K = EFCSD.K + CSFEF.K * (EFCSD.K - CD.K)$
 46850 A $CSFEF.K = TABHL(CSFEFT, TIME.K, 1984, 2004, 5)$
 46860 T $CSFEFT = 0/0/0/0/0$
 46870 NOTE
 46880 NOTE INTERNAL PLANNING FORECAST OF ISD
 46890 NOTE
 46900 A $ISDD.K = DLINF3(ID.K, FAVER)$
 46910 A $ISADGR.K = CLIP((ID.K - ISDD.K) / (FAVER * ID.K), ISDGRI, TIME.K, 1990)$
 46920 C $ISDGRI = .018$
 46930 A $EFISD.K = ID.K * EXP(ISADGR.K * FHOR.K)$
 46940 NOTE
 46950 A $FISD.K = EFISD.K + ISFEF.K * (EFISD.K - ID.K)$
 46960 A $ISFEF.K = TABHL(ISFEFT, TIME.K, 1984, 2004, 5)$
 46970 T $ISFEFT = 0/0/0/0/0$
 46980 NOTE
 46990 NOTE INTERNAL PLANNING FORECAST OF IAD
 47000 NOTE
 47010 A $IADD.K = DLINF3(IAD.K, FAVER)$

47020 A $IAADGR.K = CLIP((IAD.K - IADD.K) / (FAVER * IAD.K), IADGRI, TIME.K, 1990)$
 47030 C $IADGRI = .02$
 47040 A $EFIAD.K = IAD.K * EXP(IAADGR.K * FHOR.K)$
 47050 NOTE
 47060 A $FIAD.K = (EFIAD.K + IAFEF.K * (EFIAD.K - IAD.K)) /$
 47070 X $SWITCH(IAEFD, 1, DRYYP - 1)$
 47080 A $IAFEF.K = TABHL(IAFEFT, TIME.K, 1984, 2004, 5)$
 47090 T $IAFEFT = 0/0/0/0/0$
 47100 NOTE
 47110 NOTE INTERNAL FORECAST OF DSD
 47120 NOTE
 47130 A $FDSO.K = .75 * (FALTD.K + FDSNAD.K)$
 47140 A $FALTD.K = FALPC.K * FALAER.K / 8.76$
 47150 A $FALAER.K = 7.8$
 47160 A $FALPC.K = ALPC84 + CLIP(0, ALUMC, ALUMSD, 2004)$
 47170 A $FDSNAD.K = TABHL(DSNADT, TIME.K + FHOR.K, 1984, 2004, 5)$
 47180 NOTE
 47190 NOTE
 47200 NOTE INTERNAL FORECAST OF OD
 47210 NOTE
 47220 A $FOD.K = FSLD.K + FFAD.K$
 47230 A $FSLD.K = TABHL(SLDT, TIME.K + FHOR.K, 1984, 2014, 10)$
 47240 A $FFAD.K = TABHL(FADT, TIME.K + FHOR.K, 1984, 2014, 10)$
 47250 NOTE
 47260 NOTE
 47270 NOTE
 47280 NOTE
 47290 A $NIE94.K = .9$
 47300 A $ACE94.K = NUCE94.K * NUAFF + OGCE94 * OGAF + CTCE94 * CTAF + HYCE94.K + NIE94.K$
 47310 A $NUCE94.K = 4.67 - 1.25 * CLIP(0, 1, W1CD, 1994) - 1.1 * CLIP(0, 1, W2CD, 1994)$
 47320 X $- 1.24 * CLIP(0, 1, W3CD, 1994)$
 47330 C $OGCE94 = .646$
 47340 C $CTCE94 = .96$
 47350 NOTE
 47360 NOTE AMOUNT OF HYDRO GENERATION EXPECTED DEPENDS ON WHETHER
 47370 NOTE DRY YEAR PLANNING IS ASSUMED.
 47380 NOTE
 47390 A $HYCE94.K = HYCDRY.K * SWITCH(1, 0, DRYYP - 1) + HYCAV.K * SWITCH(1, 0, DRYYP)$
 47400 C $DRYYP = 1$
 47410 NOTE
 47420 A $CHREQ.K = MAX(0, FFLOAD.K + ACNFSC.K - ACE94.K)$
 47430 A $ACHREQ.K = MAX(0, CHREQ.K - (COCAP.K + COCUC.K + COCIP.K) * COAF -$
 47440 X $(SHCAP.K + SHCUC.K))$
 47450 N $ACHREQ = 0$
 47460 NOTE
 47470 R $COCIR.KL = ACHREQ.K * FCHCO.K / COAF$
 47480 R $SHCIR.KL = ACHREQ.K * (1 - FCHCO.K)$
 47490 A $ACNFSC.K = CLIP(CAPFSC * ITFSCS, 0, ITFSBD + ITFSCD, 1994)$
 47500 C $CAPFSC = 0$
 47510 A $FCHCO.K = TABHL(FCHOOT, COSHCR.K, 0, 2, .25)$
 47520 T $FCHOOT = 1/1/1/.9/.5/.1/0/0/0$
 47530 A $COSHCR.K = COTLBC.K / SHTLBC.K$
 47540 NOTE
 47550 NOTE TOTAL, LEVELIZED, BUSBAR COST (MILLS/KWHR) OF COAL AND
 47560 NOTE AND SMALL HYDRO ARE CALCULATED TO ALLOW COMPARISON AND
 47570 NOTE SPLIT THE CAPACITY INITIATIONS
 47580 NOTE
 47590 A $COTLBC.K = COLCC.K + COLCF.K + COLCO.K$
 47600 A $COLCF.K = COUFC.K / INFLA.K$
 47610 A $COLCO.K = COUOC.K / INFLA.K$
 47620 A $COLCC.K = (COCCEA.K * COTCIF * COFCR) / (8.76 * COAF * INFLA.K)$

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47630 C      COTCIF=1.2
47640 C      COFCR=.142
47650 NOTE
47660 A      SHTLBC.K=SHLOC.K+SHLOO.K
47670 A      SHLOO.K=HYUOC.K/INFLA.K
47680 A      SHLOC.K=(SHOCC.K*SHTCIF*SHFCR)/8.76
47690 C      SHTCIF=1.0
47700 C      SHFCR=.142
47710 NOTE
47720 NOTE
47730 NOTE
47740 R      COCAR.KL=DELAY3P(COCIR.JK,COCPD.K,COCPD.K)
47750 N      COCIR=0
47760 A      COCPD.K=2
47770 NOTE
47780 NOTE      THE CAPACITY EXPANSION PLANNING SECTOR ALSO DETERMINES
47790 NOTE      INITIATIONS FOR COMBUSTION TURBINES.  THESE ARE SET TO
47800 NOTE      ZERO IN MOST RUNS OF THE REGIONAL MODEL.
47810 NOTE
47820 R      CTCIR.KL=TABHL(CTCIRT,TIME.K,1984,1994,1)
47830 T      CTCIRT=0/0/0/0/0/0/0/0/0/0/0/0/0/0/0/0
47840 NOTE
47850 NOTE      MORE COMPLICATED VERSION OF AVOIDED COSTS
47860 NOTE      THAN WAS USED IN THE "JULY 1984 VERSION"
47870 NOTE      OF THE REGIONAL MODEL
47880 NOTE
47890 A      AVCCP.K=AVC.K*TDCF*CONPF/CONACF
47900 C      TDCF=1.0
47910 C      CONPF=1.0
47920 C      CONACF=1.21
47930 A      AVC.K=CLIP(ACAR.K,AVCNAR.K,ACHREQ.K,.01)
47940 A      AVCNAR.K=SSCPR.K/INFLA.K
47950 A      ACAR.K=(COTLBC.K-RINICA.K)*FCHOO.K+SHTLBC.K*(1-FCHOO.K)
47960 A      RINICA.K=TABHL(RINICAT,COCAP.K+COUCUC.K+COCPD.K,4,12,2)
47970 T      RINICAT=10/7.5/5/2.5/0
47980 NOTE
47990 NOTE
48000 NOTE
48010 NOTE      *****
48020 NOTE
48030 NOTE      REGULATORY - FINANCIAL SECTOR
48040 NOTE
48050 NOTE      *****
48060 NOTE
48070 NOTE      REGIONAL RATE BASE (MILLIONS $)
48080 NOTE
48090 A      RRB.K=INA.K+TACO.K*FOCRB+TCWIP.K*FCWIPB.K
48100 C      FOCRB=.125
48110 A      FCWIPB.K=CLIP(.5,.8,TIME.K,1992)
48120 NOTE
48130 NOTE      ALLOWED RETURN ON THE RATE BASE
48140 NOTE
48150 A      ARORI.K=TABHL(ARORIT,FCFSD.K,0,1,.25)
48160 T      ARORIT=.04/.06/.08/.1/.12
48170 A      WCC.K=IODEIR.K*ICWW.K+PUDEIR.K*PUWW.K+FEDEIR.K*FEWW.K
48180 A      ICWW.K=IODEBT.K/TDEBT.K
48190 A      PUWW.K=PUDEBT.K/TDEBT.K
48200 A      FEWW.K=FEDEBT.K/TDEBT.K
48210 A      TDEBT.K=IODEBT.K+PUDEBT.K+FEDEBT.K
48220 A      AOPI.K=ARORI.K*RRB.K
48230 NOTE

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48240 NOTE ALLOWED REVENUES IS ALLOWED INCOME + ALLOWED EXPENSES
 48250 NOTE LESS OTHER ALLOWED INCOME (USUALLY NON-CASH ITEMS)
 48260 NOTE
 48270 A $AREV.K = AOPT.K + AEXP.K - OAREV.K$
 48280 A $OAREV.K = TNARC.K * (1 - FCWIPB.K)$
 48290 A $AEXP.K = NACO.K + TCEE.K + TNAD.K + PTAX.K + ITAX.K + CODIN.K + CODRR.JK$
 48300 A $PTAX.K = PTAXR * TNA.K$
 48310 C $PTAXR = .03$
 48320 A $ITAX.K = ITAXR * TAXINC.K$
 48330 A $TAXINC.K = MAX(0, REV.K - NACO.K - TCEE.K - PTAX.K - DIN.K - ITAD.K)$
 48340 C $ITAXR = .17$
 48350 A $TCE.K = (RUE.K + CUE.K + IUE.K + DSIUE.K + OTHEXP.K + PRESEXP.K) * INFLA.K$
 48360 NOTE
 48370 NOTE INDICATED PRICE AND THE REGULATORY LAG
 48380 NOTE
 48390 A $IPRICE.K = AREV.K / ESALES.K$
 48400 A $ESALES.K = (RD.K + CD.K + ID.K + DSD.K + IAD.K + OD.K + DSIL.K * DSLOS.K) * 8.76$
 48410 A $APRICE.K = SMOOTH(IPRICE.K, LRL)$
 48420 C $LRL = .5$
 48430 N $IPRICE = PRIC84$
 48440 C $PRIC84 = 32.2$
 48450 A $REV.K = APRICE.K * ESALES.K$
 48460 NOTE
 48470 NOTE CONSTRUCTION FINANCING THROUGH SALE OF 3 TYPES OF DEBT
 48480 NOTE
 48490 L $IODEBT.K = IODEBT.J + DT * (IODIR.JK - IODNRR.JK - IODERR.JK)$
 48500 N $IODEBT = IOD84$
 48510 C $IOD84 = 5000$
 48520 L $PUDEBT.K = PUDEBT.J + DT * (PUDIR.JK - PUDNRR.JK - PUDERR.JK -$
 48530 X $PUDDR.JK + PUDROR.JK)$
 48540 N $PUDEBT = PUD84$
 48550 C $PUD84 = 5000$
 48560 L $FUDEBT.K = FUDEBT.J + DT * (FUDDR.JK - FUDROR.JK)$
 48570 N $FUDEBT = FUDD84$
 48580 C $FUDD84 = 2500$
 48590 L $FEDEBT.K = FEDEBT.J + DT * (FEDIR.JK - FEDNRR.JK - FEDERR.JK)$
 48600 N $FEDEBT = FED84$
 48610 C $FED84 = 7000$
 48620 NOTE
 48630 NOTE THREE DEBT ISSUE RATES
 48640 NOTE
 48650 R $IODIR.KL = CFRSD.K * IODF$
 48660 R $PUDIR.KL = CFRSD.K * PUDF$
 48670 R $FEDIR.KL = CFRSD.K * FEDF$
 48680 C $IODF = .333333$
 48690 C $PUDF = .33333$
 48700 C $FEDF = .33333$
 48710 NOTE
 48720 NOTE THREE DEBT RETIREMENT RATES, BOTH NORMAL AND EXTRA
 48730 NOTE
 48740 R $IODNRR.KL = IODEBT.K / IODL$
 48750 R $PUDNRR.KL = PUDEBT.K / PUDL$
 48760 R $FEDNRR.KL = FEDEBT.K / FEDL$
 48770 A $FEIR.K = FEDEBT.K / FEDL$
 48780 C $IODL = 30$
 48790 C $PUDL = 30$
 48800 C $FEDL = 20$
 48810 R $IODERR.KL = MAX(0, FAARP.K) * IOWW.K$
 48820 R $PUDERR.KL = MAX(0, FAARP.K) * PUWW.K$
 48830 R $FEDERR.KL = MAX(0, FAARP.K) * FEWW.K$
 48840 NOTE

48850 NOTE THREE TYPES OF INTEREST EXPENSE
 48860 NOTE
 48870 A $IODIN.K = IODEBT.K * IODEIR.K$
 48880 A $PUDIN.K = PUDEBT.K * PUDEIR.K$
 48890 A $FEDIN.K = FEDEBT.K * FEDEIR.K$
 48900 A $DIN.K = IODIN.K + PUDIN.K + FEDIN.K + CODIN.K$
 48910 A $IODEIR.K = .12$
 48920 A $PUDEIR.K = .10$
 48930 A $FEDEIR.K = .08$
 48940 NOTE
 48950 NOTE DEFAULTING OR REOBLIGATING THE PUBLIC UTILITIES' DEBT
 48960 NOTE
 48970 R $FUDDR.KL = W1PACR.JK * W1PUDF + W2PACR.JK * W2PUDF + W3PACR.JK * W3PUDF$
 48980 C $W1PUDF = .5$
 48990 C $W2PUDF = .5$
 49000 C $W3PUDF = .5$
 49010 R $FUDROR.KL = FUDDBT.K * FUDRF * (CLIP(1, 0, TIME.K, FUDRD) -$
 49020 X $CLIP(1, 0, TIME.K, FUDRD + 1))$
 49030 C $FUDRF = 0$
 49040 C $FUDRD = 3000$
 49050 NOTE
 49060 NOTE DETERMINE WHICH OF FOUR CASH FLOW CASES IS RELEVANT
 49070 NOTE
 49080 A $CUSE1.K = NACO.K + TCE.K + PTAX.K + ITAX.K + DIN.K +$
 49090 X $CODRR.JK + (IODEBT.K / IODL) + (PUDEBT.K / PUDL)$
 49100 A $FAL.K = REV.K + TCEC.K - CUSE1.K$
 49110 A $FAARP.K = FAL.K - TNC.K - FEIR.K$
 49120 NOTE
 49130 A $BCQ0.K = CLIP(1, 0, FAARP.K, TDEBT.K)$
 49140 A $BCQ1.K = CLIP(1, 0, FAARP.K, 0)$
 49150 A $BCQ2.K = CLIP(1, 0, FAL.K, FEIR.K)$
 49160 A $BCQ3.K = CLIP(1, 0, FAL.K, 0)$
 49170 NOTE
 49180 A $CCASE.K = 4 - (BCQ0.K + BCQ1.K + BCQ2.K + BCQ3.K)$
 49190 NOTE
 49200 NOTE CALCULATE FINANCIAL ACTIONS BASED ON VALUE OF "CCASE"
 49210 NOTE
 49220 A $CFRSD.K = SWITCH(TNC.K, 0, CCASE.K - 3) +$
 49230 X $SWITCH(TNC.K - FAL.K + FEIR.K, 0, CCASE.K - 2)$
 49240 A $FEDNR.K = MIN(FEIR.K, FAL.K)$
 49250 A $FCFSD.K = CFRSD.K / MAX(1, TNC.K)$
 49260 NOTE
 49270 NOTE ALERT MODEL USER IF CCASE IS 0 (TOO MUCH CASH)
 49280 NOTE OR IF CCASE=4 (TOO LITTLE CASH)
 49290 NOTE
 49300 A $ALERT0.K = 1 / SWITCH(0, 1, CCASE.K - 0)$
 49310 A $ALERT4.K = 1 / SWITCH(1, 1, CCASE.K - 4)$
 49320 NOTE
 49330 NOTE FIND TOTALS FOR "SOURCES" AND "USES" OF FUNDS
 49340 NOTE
 49350 A $TSOURC.K = ITGWRV.K + ITFREV.K + SSREVC.K + TCEC.K + REV.K + CFRSD.K$
 49360 A $TUSES.K = TACO.K + (CUSE1.K - NACO.K) + FEDNR.K + TNC.K + MAX(0, FAARP.K)$
 49370 NOTE
 49380 NOTE TURN AVERAGE PRICE INTO FOUR PRICES TO FEED
 49390 NOTE TO THE THREE DEMAND SECTORS AND THE ALUMINUM DEMAND
 49400 NOTE
 49410 NOTE
 49420 A $RSPD.K = RSPD80 * INFLA.K$
 49430 A $CSPD.K = CSPD80 * INFLA.K$
 49440 A $ISPD.K = ISPD80 * INFLA.K$
 49450 C $RSPD80 = 3$

49460 C $CSPD80=4$
 49470 C $ISPD80=-5$
 49480 A $RSAPF.K=(APRICE.K+RSPD.K)/INFLA.K$
 49490 A $CSAPF.K=(APRICE.K+CSPD.K)/INFLA.K$
 49500 A $ISAPF.K=(APRICE.K+ISPD.K)/INFLA.K$
 49510 NOTE
 49520 NOTE DSI RATE IS INDUSTRIAL RATE LESS A RESERVE CREDIT
 49530 NOTE
 49540 A $DSRF.K=ISAPF.K-DSIRC$
 49550 C $DSIRC=2$
 49560 NOTE
 49570 NOTE USER MAY SPECIFY IF THREE PRICES ARE TO
 49580 NOTE FEEDBACK TO DEMAND SECTORS
 49590 NOTE APEU IS APE FROM USER (1980\$)
 49600 NOTE APEF IS APE WITH FEEDBACK (ALSO 1980\$)
 49610 NOTE
 49620 C $RSPF=1$
 49630 C $CSPF=1$
 49640 C $ISPF=1$
 49650 C $DSPF=1$
 49660 A $RAPE.K=RSAPF.K*(1-RSPF)+RSAPF.K*RSPF$
 49670 A $CAPE.K=CSAPF.K*(1-CSPF)+CSAPF.K*CSPF$
 49680 A $IAPE.K=ISAPF.K*(1-ISPF)+ISAPF.K*ISPF$
 49690 A $DSIR.K=DSRU.K*(1-DSPF)+DSRF.K*DSPF$
 49700 NOTE
 49710 A $RSAPF.K=28$
 49720 A $CSAPF.K=29$
 49730 A $ISAPF.K=20$
 49740 A $DSRU.K=18$
 49750 NOTE
 49760 A $IAAP.K=IAAP80*INFLA.K$
 49770 C $IAAP80=15$
 49780 NOTE
 49790 A $IAREV.K=IAAP.K*IAAD.K*8.76$
 49800 A $DSIREV.K=DSLOS.K*DSIL.K*8.76*DSIR.K$
 49810 A $RSREV.K=RSAPF.K*RD.K*8.76*INFLA.K$
 49820 A $CSREV.K=CSAPF.K*CD.K*8.76*INFLA.K$
 49830 A $ISREV.K=ISAPF.K*ID.K*8.76*INFLA.K$
 49840 A $DSFREX.K=DSIR.K*DSD.K*8.76*INFLA.K$
 49850 NOTE
 49860 NOTE CHECK AGGREGATE REVENUE BASED ON AVERAGE
 49870 NOTE PRICE WITH SUM OF SEPARATE REVENUE CLASSES
 49880 NOTE
 49890 A $REVDIF.K=REV.K-(IAREV.K+DSIREV.K+DSFREX.K+RSREV.K+CSREV.K+ISREV.K)$
 49900 A $REVPD.K=REVDIF.K/REV.K$
 49910 NOTE
 49920 NOTE
 49930 NOTE THE MODEL ALLOWS FOR THE SALE OF "CONSERVATION DEBT"
 49940 NOTE IF CONSERVATION EXPENDITURES ARE TO BE CAPITALIZED
 49950 NOTE
 49960 R $CODRR.KL=DELAY3P(CODIR.JK,CODL,CODEBT.K)$
 49970 N $CODIR=.1$
 49980 NOTE
 49990 C $CODL=30$
 50000 A $CODIN.K=CODEBT.K*CODEIR$
 50010 C $CODEIR=.10$
 50020 R $CODIR.KL=TCEC.K$
 50030 A $TCEC.K=TCE.K*(1-FCEE.K)$
 50040 A $TCEE.K=TCE.K*FCEE.K$
 50050 A $FCEE.K=(OTHEXP.K+PRESEXP.K)*INFLA.K/MAX(.1,TCE.K)$
 50060 C $CONDL=10E6$

50070 NOTE

50080 NOTE

50090 NOTE

50100 NOTE

50110 NOTE

50120 NOTE

INFLATION AND ESCALATION

50130 NOTE

FIRST, THE GENERAL RATE OF INFLATION

50140 NOTE

50150 L $INFLA.K = INFLA.J + DT * INFLAI.JK$

50160 N $INFLA = INFL84$

50170 C $INFL84 = 1.4$

50180 R $INFLAI.KL = INFLR.K * INFLA.K$

50190 A $INFLR.K = TABHL(INFLRT, TIME.K, 1984, 2004, 2)$

50200 T $INFLRT = .065 / .065 / .06 / .06 / .06 / .06 / .06 / .058 / .058 / .058 / .058$

50210 NOTE

50220 NOTE

SIX ESCALATORS FOR CONSTRUCTION COSTS

50230 NOTE

50240 L $SHESC.K = SHESC.J + DT * SHESCI.JK$

50250 L $COESC.K = COESC.J + DT * COESCI.JK$

50260 L $NUESC.K = NUESC.J + DT * NUESCI.JK$

50270 L $CTESC.K = CTESC.J + DT * CTESCI.JK$

50280 L $TRESC.K = TRESC.J + DT * TRESKI.JK$

50290 L $DIESC.K = DIESC.J + DT * DIESCI.JK$

50300 N $SHESC = INFL84$

50310 N $COESC = INFL84$

50320 N $NUESC = INFL84$

50330 N $CTESC = INFL84$

50340 N $TRESC = INFL84$

50350 N $DIESC = INFL84$

50360 R $SHESCI.KL = SHESC.K * SHESCR.K$

50370 R $COESCI.KL = COESC.K * COESCR.K$

50380 R $NUESCI.KL = NUESC.K * NUESCR.K$

50390 R $CTESCI.KL = CTESC.K * CTESCR.K$

50400 R $TRESKI.KL = TRESC.K * TRESKR.K$

50410 R $DIESCI.KL = DIESC.K * DIESCR.K$

50420 A $SHESCR.K = INFLR.K + SHRECTR.K$

50430 A $COESCR.K = INFLR.K + CORECR.K$

50440 A $NUESCR.K = INFLR.K + NURECR.K$

50450 A $CTESCR.K = INFLR.K + CTRECTR.K$

50460 A $TRESKR.K = INFLR.K + TRRECTR.K$

50470 A $DIESCR.K = INFLR.K + DIRECR.K$

50480 A $SHRECTR.K = TABHL(SHRECT, TIME.K, 1984, 2004, 10)$

50490 A $CORECR.K = TABHL(CORECT, TIME.K, 1984, 2004, 10)$

50500 A $NURECTR.K = TABHL(NURECT, TIME.K, 1984, 2004, 10)$

50510 A $CTRECTR.K = TABHL(CTRECT, TIME.K, 1984, 2004, 10)$

50520 A $TRRECTR.K = TABHL(TRRECT, TIME.K, 1984, 2004, 10)$

50530 A $DIRECTR.K = TABHL(DIRECT, TIME.K, 1984, 2004, 10)$

50540 T $SHRECT = 0 / 0 / 0$

50550 T $CORECT = 0 / 0 / 0$

50560 T $NURECT = .02 / .02 / .02$

50570 T $CTRECT = .01 / .01 / .01$

50580 T $TRRECT = .01 / .01 / .01$

50590 T $DIRECT = .01 / .01 / .01$

50600 NOTE

50610 NOTE

FOUR ESCALATORS FOR FUEL COSTS + PURCHASED ENERGY ESCALATOR

50620 NOTE

50630 L $COESF.K = COESF.J + DT * COESFI.JK$

50640 L $NUESF.K = NUESF.J + DT * NUESFI.JK$

50650 L $OGESF.K = OGESF.J + DT * OGESFI.JK$

50660 A $CTESF.K = OGESF.K$

50670 A $PUEES.K = COESF.K$

50680 N COESF=INFL84
 50690 N NUESF=INFL84
 50700 N OGESF=INFL84
 50710 R COESFI.KL=COESF.K*COESFR.K
 50720 R NUESFI.KL=NUESF.K*NUESFR.K
 50730 R OGESFI.KL=OGESF.K*OGESFR.K
 50740 A COESFR.K=INFLR.K+COREFR.K
 50750 A NUESFR.K=INFLR.K+NUREFR.K
 50760 A OGESFR.K=INFLR.K+OGREFR.K
 50770 A COREFR.K=TABHL(COREFT,TIME.K,1984,2004,10)
 50780 A NUREFR.K=TABHL(NUREFT,TIME.K,1984,2004,10)
 50790 A OGREFR.K=TABHL(OGREFT,TIME.K,1984,2004,5)
 50800 T COREFT=0/0/0
 50810 T NUREFT=0/0/0
 50820 T OGREFT=0/.03/.03/.03
 50830 NOTE
 50840 NOTE SEVEN ESCALATORS FOR O & M COSTS
 50850 NOTE
 50860 L HYESO.K=HYESO.J+DT*HYESOI.JK
 50870 L COESO.K=COESO.J+DT*COESOI.JK
 50880 L NUESO.K=NUESO.J+DT*NUESOI.JK
 50890 L OGESO.K=OGESO.J+DT*OGESOI.JK
 50900 L CTESO.K=CTESO.J+DT*CTESOI.JK
 50910 L TRESO.K=TRESO.J+DT*TRESOI.JK
 50920 L DIESO.K=DIESO.J+DT*DIESOI.JK
 50930 N HYESO=INFL84
 50940 N COESO=INFL84
 50950 N NUESO=INFL84
 50960 N OGESO=INFL84
 50970 N CTESO=INFL84
 50980 N TRESO=INFL84
 50990 N DIESO=INFL84
 51000 R HYESOI.KL=HYESO.K*HYESOR.K
 51010 R COESOI.KL=COESO.K*COESOR.K
 51020 R NUESOI.KL=NUESO.K*NUESOR.K
 51030 R OGESOI.KL=OGESO.K*OGESOR.K
 51040 R CTESOI.KL=CTESO.K*CTESOR.K
 51050 R TRESOI.KL=TRESO.K*TRESOR.K
 51060 R DIESOI.KL=DIESO.K*DIESOR.K
 51070 A HYESOR.K=INFLR.K+HYREOR.K
 51080 A COESOR.K=INFLR.K+COREOR.K
 51090 A NUESOR.K=INFLR.K+NUREOR.K
 51100 A OGESOR.K=INFLR.K+OGREOR.K
 51110 A CTESOR.K=INFLR.K+CTREOR.K
 51120 A TRESOR.K=INFLR.K+TRREOR.K
 51130 A DIESOR.K=INFLR.K+DIREOR.K
 51140 A HYREOR.K=TABHL(HYREOT,TIME.K,1984,2004,10)
 51150 A COREOR.K=TABHL(COREOT,TIME.K,1984,2004,10)
 51160 A NUREOR.K=TABHL(NUREOT,TIME.K,1984,2004,10)
 51170 A OGREOR.K=TABHL(OGREOT,TIME.K,1984,2004,10)
 51180 A CTREOR.K=TABHL(CTREOT,TIME.K,1984,2004,10)
 51190 A TRREOR.K=TABHL(TRREOT,TIME.K,1984,2004,10)
 51200 A DIREOR.K=TABHL(DIREOT,TIME.K,1984,2004,10)
 51210 T HYREOT=0/0/0
 51220 T COREOT=0/0/0
 51230 T NUREOT=.015/.015/.015
 51240 T OGREOT=0/0/0
 51250 T CTREOT=0/0/0
 51260 T TRREOT=.01/.01/.01
 51270 T DIREOT=.01/.01/.01
 51280 NOTE

51290 NOTE SIX ESCALATORS USED IN SECONDARY SALES

51300 NOTE

51310 L $HYSTES.K = HYSTES.J + DT * HYTEI.JK$

51320 L $HYPSES.K = HYPSES.J + DT * HYSPEI.JK$

51330 A $SSACES.K = INFLA.K$

51340 L $SSCLES.K = SSCLES.J + DT * SSCLEI.JK$

51350 L $SSCHES.K = SSCHES.J + DT * SSCHEI.JK$

51360 A $ITFSES.K = SSCHES.K$

51370 N $HYSTES = INFL84$

51380 N $HYPSES = INFL84$

51390 N $SSCLES = INFL84$

51400 N $SSCHES = INFL84$

51410 R $HYTEI.KI = HYSTES.K * HYSTER.K$

51420 R $HYSPEI.KI = HYPSES.K * HYSPEI.K$

51430 R $SSCLEI.KI = SSCLES.K * SSCLER.K$

51440 R $SSCHEI.KI = SSCHES.K * SSCHER.K$

51450 A $HYSTER.K = INFLR.K + HYSTRR.K$

51460 A $HYSPEI.K = INFLR.K + HYSRRR.K$

51470 A $SSCLER.K = INFLR.K + SSCLRR.K$

51480 A $SSCHER.K = INFLR.K + SSCHRR.K$

51490 A $HYSTRR.K = -.01$

51500 A $HYSRRR.K = -INFLR.K$

51510 A $SSCLRR.K = 0$

51520 A $SSCHRR.K = 0$

51530 NOTE

51540 NOTE

51550 NOTE

DEFLATE VARIABLES TO 1980\$ FOR INTERPRETATION

51560 NOTE

51570 NOTE

51580 A $DTACO.K = TACO.K / INFLA.K$

51590 A $DNACO.K = NACO.K / INFLA.K$

51600 A $DAVSOC.K = AVSOC.K / INFLA.K$

51610 A $DNASOC.K = NASOC.K / INFLA.K$

51620 A $DSSMAX.K = SSMAXR.K / INFLA.K$

51630 A $DSSMIN.K = SSMINR.K / INFLA.K$

51640 A $DSSCPR.K = SSCPR.K / INFLA.K$

51650 A $DSSREH.K = SSREH.K / INFLA.K$

51660 A $DSSREL.K = SSREVL.K / INFLA.K$

51670 A $DSSREC.K = SSREVC.K / INFLA.K$

51680 A $DTNA.K = TNA.K / INFLA.K$

51690 A $DTOWIP.K = TOWIP.K / INFLA.K$

51700 A $DTNC.K = TNC.K / INFLA.K$

51710 A $DTTA.K = TTA.K / INFLA.K$

51720 A $DTARC.K = TARC.K / INFLA.K$

51730 A $DTNARC.K = TNARC.K / INFLA.K$

51740 A $DTNAD.K = TNAD.K / INFLA.K$

51750 A $DTTAD.K = TTAD.K / INFLA.K$

51760 A $DRRB.K = RRB.K / INFLA.K$

51770 A $DTDEBT.K = TDEBT.K / INFLA.K$

51780 A $DAOPI.K = AOPI.K / INFLA.K$

51790 A $DAREV.K = AREV.K / INFLA.K$

51800 A $DAEXP.K = AEXP.K / INFLA.K$

51810 A $DPTAX.K = PTAX.K / INFLA.K$

51820 A $DITAX.K = ITAX.K / INFLA.K$

51830 A $DTCEE.K = TCEE.K / INFLA.K$

51840 A $DOODIN.K = CODIN.K / INFLA.K$

51850 A $DOODRR.K = CODRR.JK / INFLA.K$

51860 A $DIPR.K = IPRICE.K / INFLA.K$

51870 A $DPRICE.K = APRICE.K / INFLA.K$

51880 A $DREV.K = REV.K / INFLA.K$

51890 A $DUSE1.K = CUSE1.K / INFLA.K$

51900 A DDIN.K=DIN.K/INFLA.K
51910 A DTSOU.K=TSOURC.K/INFLA.K
51920 A DTUSE.K=TUSES.K/INFLA.K
51930 A DITGWR.K=ITGWRV.K/INFLA.K
51940 A DITFRV.K=ITFREV.K/INFLA.K
51950 A DCFSD.K=CFRSD.K/INFLA.K
51960 A DFEDNR.K=FEDNRR.JK/INFLA.K
51970 A DPUDNR.K=PUDNRR.JK/INFLA.K
51980 A DIODNR.K=IODNRR.JK/INFLA.K
51990 A DTCE.K=TCE.K/INFLA.K
52000 A DTCEC.K=TCEC.K/INFLA.K
52010 NOTE
52020 NOTE DISCOUNTED PRESENT VALUE OF ANNUAL COSTS
52030 NOTE
52040 A DAC.K=DACU.K+DACC.K
52050 A DACU.K=DNACO.K+DPTAX.K+DITAX.K+DDIN.K+DDRR.K+DTCEE.K+DTNC.K-DCFSD.K
52060 A DACC.K=DACCI.K+DACC.C.K+DACCR.K
52070 A DACCI.K=IMDPE.K+ILIPE.K+IOTPE.K
52080 A DACC.C.K=COSPE.K+CONPE.K+CNSPE.K+CNNPE.K
52090 A DACCR.K=ROSPE.K+ROWPE.K+ROOPE.K+RNSPE.K+RWPE.K+RWOPE.K
52100 A DDRR.K=(CODRR.JK+IODNRR.JK+PUDNRR.JK+FEDNRR.JK)/INFLA.K
52110 L DVPAC.K=DVPAC.J+DT*DDAC.JK
52120 N DVPAC=0
52130 R DDAC.KL=DAC.K/EXP(BPADR*(TIME.K-1984))
52140 NOTE
52150 NOTE DISCOUNTED PRESENT VALUE OF ANNUAL EXPENSES
52160 NOTE
52170 L DVPREV.K=DVPREV.J+DT*DVPVIR.JK
52180 N DVPREV=0
52190 R DVPVIR.KL=DREV.K/EXP(BPADR*(TIME.K-1984))
52200 NOTE ACCUMULATE UTILITY EXPENDITURES ON CONSERVATION
52210 NOTE
52220 L ADCE.K=ADCE.J+DT*ADCEI.JK
52230 N ADCE=0
52240 R ADCEI.KL=DTCE.K
52250 NOTE
52260 NOTE DISCOUNTED PRE. VALUE OF UTILITY COSTS
52270 NOTE
52280 L DVPUC.K=DVPUC.J+DT*DDUC.JK
52290 N DVPUC=0
52300 R DDUC.KL=DACU.K/EXP(BPADR*(TIME.K-1984))
52310 NOTE
52320 NOTE SUPPLEMENTARY VARIABLES FOR PLOTTING
52330 NOTE
52340 S DDSIRV.K=(DSIREV.K+DSFREV.K)/INFLA.K
52350 A CSURP.K=CAP5.K-FIRML.K-(HYCAP.K-HYCDRY.K)-(SHCAPY.K-SHCAP.K)
52360 A CSURFN.K=CSURP.K-MAX(0,(COCAP.K-4.044)*COAF)-SHCAP.K
52370 A CORPB.K=CODIN.K+CODRR.JK
52380 A DCORPB.K=CORPB.K/INFLA.K
52390 S RDCD.K=RD.K+CD.K
52400 A RDCDID.K=RD.K+CD.K+ID.K
52410 A RCIDD.K=RDCDID.K+DS.D.K
52420 A ROESC.K=ROES.C.K+ROWESC.K+ROOESC.K
52430 S ROESC1.K=ROES.C1.K+ROWESC1.K+ROOESC1.K
52440 S ROESC2.K=ROES.C2.K+ROWESC2.K+ROOESC2.K
52450 NOTE
52460 NOTE FIGURE OF MERIT FOR NON-PARTICIPANT
52470 NOTE AND FOR THE AVERAGE OLDER HOME
52480 NOTE
52490 L TDVROS.K=TDVROS.J+DT*TDVSI.JK
52500 N TDVROS=0

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52510 R      TDVSI.KL=ROESC.K/EXP(BPADR*(TIME.K-1984))
52520 NOTE
52530 L      NPFOM.K=NPFOM.J+DT*DDSBILL.JK
52540 N      NPFOM=0
52550 R      DDSBILL.KL=DSBILL.K/EXP(BPADR*(TIME.K-1984))
52560 A      DSBILL.K=DPRICE.K*ROBU.K*8.76
52570 A      ROBU.K=ROSBU+ROWBU+ROOBU
52580 NOTE
52590 NOTE      TWO MORE MEASURES FOR RATE IMPACTE
52600 NOTE
52610 L      ACDP.K=ACDP.J+DT*ACDPIR.JK
52620 N      ACDP=23
52630 L      ACDDP.K=ACDDP.J+DT*ACDDPIR.JK
52640 N      ACDDP=23
52650 NOTE
52660 R      ACDPIR.KL=DPRICE.K
52670 R      ACDDPIR.KL=DPRICE.K/EXP(BPADR*(TIME.K-1984))
52680 NOTE
52690 A      ADPRUN.K=ACDP.K/(TIME.K-1983)
52700 A      ADDPRUN.K=ACDDP.K/(TIME.K-1983)
52710 NOTE
52720 NOTE      *****
52730 NOTE
52740 NOTE      CONTROL CARDS
52750 NOTE
52760 NOTE      *****
52770 NOTE
52780 SPEC      DT=.125/PRIPER=4/PLTPER=1/LENGTH=0
52790 N      TIME=1984
52800 C      WRIPER=0
52810 NOTE
52820 NOTE      OLD STOCK VINTAGING ROUTINE
52830 NOTE      THIS MACRO ALLOWS SEPARATE
52840 NOTE      TREATMENT OF SHELL AND MEASURE
52850 NOTE      RETIREMENTS.
52860 NOTE
52870 MACRO      VINTG(RIN,NCLT,SHLT,TNC,RSHOUT,INIT)
52880 A      $SHAT.K=1/SHLT.K
52890 A      $NCAT.K=3/NCLT.K
52900 L      $LV1.K=$LV1.J+DT*(RIN.JK-$R101.JK-$R102.JK)
52910 N      $LV1=INIT/3
52920 R      $R101.KL=$LV1.K*$SHAT.K
52930 R      $R102.KL=$LV1.K*$NCAT.K
52940 L      $LV2.K=$LV2.J+DT*($R102.JK-$R201.JK-$R202.JK)
52950 N      $LV2=$LV1
52960 R      $R201.KL=$LV2.K*$SHAT.K
52970 R      $R202.KL=$LV2.K*$NCAT.K
52980 L      $LV3.K=$LV3.J+DT*($R202.JK-$R301.JK-VINTG.JK)
52990 N      $LV3=$LV1
53000 R      $R301.KL=$LV3.K*$SHAT.K
53010 R      VINTG.KL=$LV3.K*$NCAT.K
53020 A      TNC.K=$LV1.K+$LV2.K+$LV3.K
53030 A      RSHOUT.K=$R101.JK+$R201.JK+$R301.JK
53040 MEND

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