RECEIVED

JUN 13 1994

Bureau of
Air Regulation

TAMPA ELECTRIC
A TECO ENERGY COMPANY

June 9, 1994

Mr. Clair Fancy, P.E. Chief
Bureau of Air Regulation
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Certified Mail # P 231 802 182
Return Receipt Requested

Re: Tampa Electric Company
Polk Power Station, FDEP Permit PSD-FL-194
Request for Change in Permit Expiration Date

Dear Mr. Fancy:

Tampa Electric Company submitted a Prevention of Significant Deterioration (PSD) permit application to the Florida Department of Environmental Regulation (FDEP) for the Polk Power Station (PPS) project in July 1992. The PPS project consists of approximately 1,150 megawatts (MW) of electric generating capacity installed in phases over an approximate fifteen year period. In response to this permit application, the FDEP issued permit PSD-FL-194 on February 28, 1994 authorizing construction and operation of the first phase of the PPS project - a 260 megawatt (MW) integrated gasification combined cycle (IGCC) facility. Permit PSD-FL-194 was issued with an expiration date of June 1, 1996, which is prior to our anticipated commercial operation date of the IGCC unit.

The site development portion of construction of the PPS IGCC facility commenced on March 1, 1994. The IGCC facility is expected to begin commercial operation on July 1, 1996. For the first two years of operation, the IGCC facility will operate in a demonstration mode under the Department of Energy's Clean Coal Technology (CCT) Demonstration Program. Following this demonstration period, the IGCC combustion turbine will undergo a series of tests over an eighteen month period to determine nitrogen oxides (NO_x) emission rates as required by Specific Condition No. 6 of permit PSD-FL-194. By February 2000, a recommended NO_x BACT determination will be submitted to FDEP pursuant to Specific Condition No. 7. The planned construction and operation schedule of the IGCC facility is summarized as follows:

- Commence site development portion of construction on 3/1/94;
- Commence commercial operation by 7/1/96;
- Start DOE CCT demonstration period on 7/1/96;
- End DOE CCT demonstration period by 6/30/98;
- Start IGCC CT NO_x testing program on 7/1/98;
- End IGCC CT NO_x testing program by 12/31/99; and
- Submit NO_x BACT recommendation to FDEP by 2/1/2000.

Consistent with this regulatory schedule, Tampa Electric Company would appreciate having the expiration date of permit PSD-FL-194 changed from June 1, 1996 to June 30, 2000. The revised expiration date of June 30, 2000 will allow time to conduct the various emissions tests required by FDEP and for FDEP review of the NO_x BACT recommendation. This expiration date is consistent with FDEP's planned review of the PSD permit pursuant to Specific Condition No. 7.

Please contact me at (813) 228-4847 if you have any questions concerning this request.

Sincerely,

Gregory M. Nelson

Gregory M. Nelson, P.E.
Senior Engineer
Environmental Planning

cc\LL699

c: Preston Lewis, FDEP

ECT
Environmental Consulting & Technology, Inc.

May 23, 1994
ECT No. 94014-0002-1300

SENT BY OVERNIGHT MAIL ON 05/23/94

Mr. Cleve Holladay
Florida Department of
Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Tampa Electric Company
Polk Power Station
Class I Impact Assessment

Dear Mr. Holladay:

Long-range dispersion modeling using the MESOPUFF II model was conducted to assess Class I impacts for Julian Day 333 of 1986 as requested by FDEP. The Class I impact analysis included the evaluation of both PSD increment consuming (59 sources) and increment expanding (53 sources) emission sources. Class I impacts due solely to Polk Power Station emission sources were also developed. The results of this assessment were discussed with you during our meeting last Friday.

In conducting the Class I assessment, the MESOPUFF II parameter file was modified to allow for a greater number of emission sources from the default value of 20. To confirm that the maximum number of grid puffs, set by the parameter file at 20,000 puffs, was adequate for the increased number of emission sources, the MESOPUFF II modeling was repeated using a maximum number of 20 emission sources for each run as suggested by the IWAQM guidance. That is, the PSD increment consuming (positive) and expanding (negative) emission sources were each broken into three groups with each group containing 20 or less sources.

The results obtained from these latest MESOPUFF II runs were essentially the same as the original analysis provided to you last Friday. Overall net highest 24-hour average SO_2 impact was projected to be 3.27 $\mu g/m^3$. Two sets of MESOPUFF II and MESOFILE II output files and a summary of the results are enclosed for your information.

3701 Northwest
98TH Street
Gainesville, FL
32606

(904)
332-0444

FAX (904)
332-6722

Please call me at (904) 332-0444 if there are any questions concerning the enclosed material.

Sincerely,

ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.

Thomas W. Davis, P.E.
Senior Engineer

Enclosures

TWD/tw

cc: Greg Nelson, TEC
Jack Doolittle, ECT
S. Cuff
B. Thomas, SWDist
B. Owen
J. Harper, EPA
J. Rumyad, NPS

Class I Increment Analysis
Polk Power Station

1986, Julian Day 333
24-Hour SO_2 Averages

Receptor No.	PSD Sources > 50 km Increment Consuming Sources				PSD Sources > 50 km Increment Expanding Sources				PSD Sources > 50 km Net Impact (ug/m^3)	PSD Sources <=50 km Net Impact (ug/m^3)	Overall Net Impact (ug/m^3)	PPS Impact (ug/m^3)
	Group A (ug/m^3)	Group B (ug/m^3)	Group C (ug/m^3)	Total (ug/m^3)	Group A (ug/m^3)	Group B (ug/m^3)	Group C (ug/m^3)	Total (ug/m^3)				
13	3.153	4.071	2.075	9.298	7.791	2.442	0.471	10.704	-1.406	4.679	3.273	0.233

VERSION NUMBER 2.3
LEVEL 930530

MESOFILE II

DATA READ FROM MESOPUFF OUTPUT FILE -- UNIT: 10 RUNSTREAM: 1
VERSON= 5.1 LEVEL= 93181 NSYR=86 NSDAY=327 NSHR= 0 NADVTS= 240 IAVG= 1 NPUF= 4 NSAMAD= 2 IELMET=15 JELMET=15
DGRID= 20000.0 IASTAR= 1 IASTOP=12 JASTAR= 4 JASTOP=15 ISASTR= 1 ISASTP=12 JSASTR= 4 JSASTP=15 MESHDN= 1 NPTS= 7
NAREAS= 0 NREC= 1 IPRINF= 0 LGAUSS=T LCHEM=T LDRY=T LWET=T LPRINT=F L3VL=T LVSAMP=T WSAMP= 2.00 LSGRID=F
NSPEC= 1
LWETG=F LWETNG=T LDRYG=F LDRYNG=T LPRFLX=F
XREC= 4.01
YREC=13.20

HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,328, 0) Pollutant: 1 NG receptor no. = 13 MAX. VALUE = 8.4752E-09
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,329, 0) Pollutant: 1 NG receptor no. = 13 MAX. VALUE = 5.6669E-08
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,330, 0) Pollutant: 1 NG receptor no. = 13 MAX. VALUE = 4.9815E-08
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,331, 0) Pollutant: 1 NG receptor no. = 13 MAX. VALUE = 7.3876E-08
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,332, 0) Pollutant: 1 NG receptor no. = 13 MAX. VALUE = 1.0531E-08
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,333, 0) Pollutant: 1 NG receptor no. = 13 MAX. VALUE = 2.3271E-07
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,334, 0) Pollutant: 1 NG receptor no. = 13 MAX. VALUE = 2.3168E-08
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,335, 0) Pollutant: 1 NG receptor no. = 13 MAX. VALUE = 3.0113E-14
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,336, 0) Pollutant: 1 NG receptor no. = 13 MAX. VALUE = 0.0000E+00
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,337, 0) Pollutant: 1 NG receptor no. = 13 MAX. VALUE = 1.7854E-09

Calculate 24-hr average SO2 concentrations

****

ROUTINE CALLED	POLLUTANT	ARRAY SIZE	STARTING RECORD OF DISK OUTPUT	RECEPTOR TYPE	NO. NG RECEPTORS
DEFN	SO2 CONC.	26 X 26	1	NONGRIDDED	1

****

ROUTINE CALLED	DEFINES RUNSTREAM NO.	LOGICAL UNIT	YR/DAY/HR	NO. GRIDS
FIND	1	10	86/327/ 1	240

****

ROUTINE CALLED	AVERAGING TIME	PRINTER OUTPUT	DISK OUTPUT	PLOT	CONTOUR LEVELS	INPUT FIELDS PRINTED
AVRG	24	NO	NO (0- 0)	NO	DEFAULT	NO

RUNSTREAM NO.	ORDER	A	B	IFORM	NEWMES	ISCHEK	IHIGH
1	FIRST	1.00000E+00	0.00000E+00	2	0	0	1

****

RUNTIME CALL NO.: 2 DATE: 05/19/94 TIME: 16:16:45.33
DELTA TIME: 0.11 (SEC)

VERSION NUMBER 2.3
LEVEL 930530

MESOFILE II

```
DATA READ FROM MESOPUFF OUTPUT FILE -- UNIT:  10  RUNSTREAM:   1
    VERSON= 5.1  LEVEL= 93181  NSYR=86  NSDAY=327  NSHR= 0  NADVTS=  240  IAVG=    1  NPUF=  4  NSAMAD=  2  IELMET=15  JELMET=15
    DGRID=  20000.0  IASTAR= 1  IASTOP=12  JASTAR= 4  JASTOP=15  ISASTR= 1  ISASTP=12  JSASTR= 4  JSASTP=15  MESHDN= 1  NPTS=  17
    NAREAS=   0  NREC=   1  IPRINF=   0  LGAUSS=T  LCHEM=T  LDRY=T  LWET=T  LPRINT=F  L3VL=T  LVSAMP=T  WSAMP=   2.00  LSGRID=F
    NSPEC= 1
    LWETG=F  LWETNG=T  LDRYG=F  LDRYNG=T  LPRFLX=F
    XREC= 4.01
    YREC=13.20

HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,328, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   1.6245E-07
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,329, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   4.9991E-07
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,330, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   1.4058E-07
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,331, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   2.9639E-07
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,332, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   3.3432E-07
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,333, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   4.7073E-07
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,334, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   4.5065E-07
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,335, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   7.4901E-07
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,336, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   1.4207E-08
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,337, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   9.2877E-07

Calculate 24-hr average SO2 concentrations
```

ROUTINE CALLED	POLLUTANT	ARRAY SIZE	STARTING RECORD OF DISK OUTPUT	RECEPTOR TYPE	NO. NG RECEPTORS
DEFN	SO2 CONC.	26 X 26	1	NONGRIDDED	1

ROUTINE CALLED	DEFINES RUNSTREAM NO.	LOGICAL UNIT	YR/DAY/HR	NO. GRIDS
FIND	1	10	86/327/ 1	240

ROUTINE CALLED	AVERAGING TIME	PRINTER OUTPUT	DISK OUTPUT	PLOT	CONTOUR LEVELS	INPUT FIELDS PRINTED
AVRG	24	NO	NO (0- 0)	NO	DEFAULT	NO

RUNSTREAM NO.	ORDER	A	B	IFORM	NEWMES	ISCHEK	IHIGH
1	FIRST	1.00000E+00	0.00000E+00	2	0	0	1

```
RUNTIME CALL NO.:       2   DATE: 05/20/94   TIME: 16:35:18.95
DELTA TIME:      0.17 (SEC)
```

MESOFILE II

DATA READ FROM MESOPUFF OUTPUT FILE -- UNIT: 10 RUNSTREAM: 1
VERSON= 5.1 LEVEL= 93181 NSYR=86 NSDAY=327 NSHR= 0 NADVTS= 240 IAVG= 1 NPUF= 4 NSAMAD= 2 IELMET=15 JELMET=15
DGRID= 20000.0 IASTAR= 1 IASTOP=12 JASTAR= 4 JASTOP=15 ISASTR= 1 ISASTP=12 JSASTR= 4 JSASTP=15 MESHDN= 1 NPTS= 18
NAREAS= 0 NREC= 1 IPRINF= 0 LGAUSS=T LCHEM=T LDRY=T LWET=T LPRINT=F L3VL=T LVSAMP=T WSAMP= 2.00 LSGRID=F
NSPEC= 1
LWETG=F LWETNG=T LDRYG=F LDRYNG=T LPRFLX=F
XREC= 4.01
YREC=13.20

HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,328, 0) Pollutant: 1 NG receptor no. = 1 MAX. VALUE = 1.2166E-06
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,329, 0) Pollutant: 1 NG receptor no. = 1 MAX. VALUE = 3.7368E-06
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,330, 0) Pollutant: 1 NG receptor no. = 1 MAX. VALUE = 1.1164E-06
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,331, 0) Pollutant: 1 NG receptor no. = 1 MAX. VALUE = 1.0419E-06
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,332, 0) Pollutant: 1 NG receptor no. = 1 MAX. VALUE = 1.2986E-07
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,333, 0) Pollutant: 1 NG receptor no. = 1 MAX. VALUE = 2.4416E-06
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,334, 0) Pollutant: 1 NG receptor no. = 1 MAX. VALUE = 9.9483E-07
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,335, 0) Pollutant: 1 NG receptor no. = 1 MAX. VALUE = 8.4093E-10
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,336, 0) Pollutant: 1 NG receptor no. = 1 MAX. VALUE = 0.0000E+00
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,337, 0) Pollutant: 1 NG receptor no. = 1 MAX. VALUE = 2.3682E-07

Calculate 24-hr average SO2 concentrations

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ROUTINE CALLED	POLLUTANT	ARRAY SIZE	STARTING RECORD OF DISK OUTPUT	RECEPTOR TYPE	NO. NG RECEPTORS
DEFN	SO2 CONC.	26 X 26	1	NONGRIDDED	1

****

ROUTINE CALLED	DEFINES RUNSTREAM NO.	LOGICAL UNIT	YR/DAY/HR	NO. GRIDS
FIND	1	10	86/327/ 1	240

****

ROUTINE CALLED	AVERAGING TIME	PRINTER OUTPUT	DISK OUTPUT	PLOT	CONTOUR LEVELS	INPUT FIELDS PRINTED
AVRG	24	NO	NO (0- 0)	NO	DEFAULT	NO

RUNSTREAM NO.	ORDER	A	B	IFORM	NEWMES	ISCHEK	IHIGH
1	FIRST	1.00000E+00	0.00000E+00	2	0	0	1

****

RUNTIME CALL NO.: 2 DATE: 05/20/94 TIME: 14:27:44.80
DELTA TIME: 0.11 (SEC)

VERSION NUMBER 2.3
LEVEL 930530

MESOFILE II

```
DATA READ FROM MESOPUFF OUTPUT FILE -- UNIT:  10  RUNSTREAM:   1
    VERSON=  5.1  LEVEL= 93181  NSYR=86  NSDAY=327  NSHR= 0  NADVTS=  240  IAVG=    1  NPUF=  4  NSAMAD=  2  IELMET=15  JELMET=15
    DGRID=  20000.0  IASTAR= 1  IASTOP=12  JASTAR= 4  JASTOP=15  ISASTR= 1  ISASTP=12  JSASTR= 4  JSASTP=15  MESHDN= 1  NPTS=  18
    NAREAS=   0  NREC=   1  IPRINF=   0  LGAUSS=T  LCHEM=T  LDRY=T  LWET=T  LPRINT=F  L3VL=T  LVSAMP=T  WSAMP=   2.00  LSGRID=F
    NSPEC= 1
    LWETG=F  LWETNG=T  LDRYG=F  LDRYNG=T  LPRFLX=F
    XREC= 4.01
    YREC=13.20

HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,328, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   1.4011E-06
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,329, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   4.0678E-06
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,330, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   9.7547E-07
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,331, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   2.9102E-06
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,332, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   1.8216E-06
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,333, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   7.7913E-06
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,334, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   1.8563E-06
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,335, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   2.5561E-06
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,336, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   5.4361E-11
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,337, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   4.7681E-06

Calculate 24-hr average SO2 concentrations
```

ROUTINE CALLED	POLLUTANT	ARRAY SIZE	STARTING RECORD OF DISK OUTPUT	RECEPTOR TYPE	NO. NG RECEPTORS
DEFN	SO2 CONC.	26 X 26	1	NONGRIDDED	1

ROUTINE CALLED	DEFINES RUNSTREAM NO.	LOGICAL UNIT	YR/DAY/HR	NO. GRIDS
FIND	1	10	86/327/ 1	240

ROUTINE CALLED	AVERAGING TIME	PRINTER OUTPUT	DISK OUTPUT	PLOT	CONTOUR LEVELS	INPUT FIELDS PRINTED
AVRG	24	NO	NO (0- 0)	NO	DEFAULT	NO

RUNSTREAM NO.	ORDER	A	B	IFORM	NEWMES	ISCHEK	IHIGH
1	FIRST	1.00000E+00	0.00000E+00	2	0	0	1

```
RUNTIME CALL NO.:       2   DATE: 05/20/94   TIME: 14:19:37.61
DELTA TIME:       0.11 (SEC)
```

MESOFILE II

```
DATA READ FROM MESOPUFF OUTPUT FILE -- UNIT:  10  RUNSTREAM:   1
    VERSON=  5.1  LEVEL= 93181  NSYR=86  NSDAY=327  NSHR= 0  NADVTS=  240  IAVG=    1  NPUF=  4  NSAMAD=  2  IELMET=15  JELMET=15
    DGRID=  20000.0  IASTAR= 1  IASTOP=15  JASTAR= 1  JASTOP=15  ISASTR= 1  ISASTP=15  JSASTR= 1  JSASTP=15  MESHDN= 1  NPTS=  19
    NAREAS=   0  NREC=   1  IPRINF=   0  LGAUSS=T  LCHEM=T  LDRY=T  LWET=T  LPRINT=F  L3VL=T  LVSAMP=T  WSAMP=   2.00  LSGRID=F
    NSPEC= 1
    LWETG=F  LWETNG=T  LDRYG=F  LDRYNG=T  LPRFLX=F
    XREC= 4.01
    YREC=13.20

HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,328, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   7.5756E-07
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,329, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   3.2590E-07
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,330, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   3.6557E-07
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,331, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   9.7010E-07
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,332, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   9.4366E-08
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,333, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   2.0748E-06
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,334, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   1.4028E-06
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,335, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   1.5313E-07
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,336, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   4.6725E-10
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,337, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   2.2739E-07

Calculate 24-hr average SO2 concentrations
```

****

ROUTINE CALLED	POLLUTANT	ARRAY SIZE	STARTING RECORD OF DISK OUTPUT	RECEPTOR TYPE	NO. NG RECEPTORS
DEFN	SO2 CONC.	26 X 26	1	NONGRIDDED	1

****

ROUTINE CALLED	DEFINES RUNSTREAM NO.	LOGICAL UNIT	YR/DAY/HR	NO. GRIDS
FIND	1	10	86/327/ 1	240

****

ROUTINE CALLED	AVERAGING TIME	PRINTER OUTPUT	DISK OUTPUT	PLOT	CONTOUR LEVELS	INPUT FIELDS PRINTED
AVRG	24	NO	NO (0- 0)	NO	DEFAULT	NO

RUNSTREAM NO.	ORDER	A	B	IFORM	NEWMES	ISCHEK	IHIGH
1	FIRST	1.00000E+00	0.00000E+00	2	0	0	1

****

```
RUNTIME CALL NO.:       2   DATE: 05/20/94   TIME: 16:46:33.60
DELTA TIME:       0.11 (SEC)
```

MESOFILE II

```
DATA READ FROM MESOPUFF OUTPUT FILE -- UNIT:  10  RUNSTREAM:   1
    VERSON=  5.1  LEVEL= 93181  NSYR=86  NSDAY=327  NSHR= 0  NADVTS=  240  IAVG=    1  NPUF=  4  NSAMAD=  2  IELMET=15  JELMET=15
    DGRID=  20000.0  IASTAR= 1  IASTOP=15  JASTAR= 1  JASTOP=15  ISASTR= 1  ISASTP=15  JSASTR= 1  JSASTP=15  MESHDN= 1  NPTS=  20
    NAREAS=   0  NREC=   1  IPRINF=   0  LGAUSS=T  LCHEM=T  LDRY=T  LWET=T  LPRINT=F  L3VL=T  LVSAMP=T  WSAMP=   2.00  LSGRID=F
    NSPEC= 1
    LWETG=F  LWETNG=T  LDRYG=F  LDRYNG=T  LPRFLX=F
    XREC= 4.01
    YREC=13.20

HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,328, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   1.6870E-06
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,329, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   5.6922E-06
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,330, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   1.9135E-06
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,331, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   1.3795E-06
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,332, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   2.2864E-07
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,333, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   4.0706E-06
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,334, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   1.4996E-06
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,335, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   1.5156E-09
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,336, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   0.0000E+00
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,337, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   1.0491E-07

Calculate 24-hr average SO2 concentrations
```

****

ROUTINE CALLED	POLLUTANT	ARRAY SIZE	STARTING RECORD OF DISK OUTPUT	RECEPTOR TYPE	NO. NG RECEPTORS
DEFN	SO2 CONC.	26 X 26	1	NONGRIDDED	1

****

ROUTINE CALLED	DEFINES RUNSTREAM NO.	LOGICAL UNIT	YR/DAY/HR	NO. GRIDS
FIND	1	10	86/327/ 1	240

****

ROUTINE CALLED	AVERAGING TIME	PRINTER OUTPUT	DISK OUTPUT	PLOT	CONTOUR LEVELS	INPUT FIELDS PRINTED
AVRG	24	NO	NO (0- 0)	NO	DEFAULT	NO

RUNSTREAM NO.	ORDER	A	B	IFORM	NEWMES	ISCHEK	IHIGH
1	FIRST	1.00000E+00	0.00000E+00	2	0	0	1

****

```
RUNTIME CALL NO.:       2   DATE: 05/20/94   TIME: 15:42:10.74
DELTA TIME:      0.16 (SEC)
```

MESOFILE II

```
DATA READ FROM MESOPUFF OUTPUT FILE -- UNIT:  10  RUNSTREAM:   1
    VERSON=  5.1  LEVEL= 93181  NSYR=86  NSDAY=327  NSHR= 0  NADVTS=  240  IAVG=    1  NPUF=  4  NSAMAD=  2  IELMET=15  JELMET=15
    DGRID=  20000.0  IASTAR= 1  IASTOP=15  JASTAR= 1  JASTOP=15  ISASTR= 1  ISASTP=15  JSASTR= 1  JSASTP=15  MESHDN= 1  NPTS=  20
    NAREAS=   0  NREC=   1  IPRINF=   0  LGAUSS=T  LCHEM=T  LDRY=T  LWET=T  LPRINT=F  L3VL=T  LVSAMP=T  WSAMP=   2.00  LSGRID=F
    NSPEC= 1
    LWETG=F  LWETNG=T  LDRYG=F  LDRYNG=T  LPRFLX=F
    XREC= 4.01
    YREC=13.20

HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,328, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   7.7367E-07
HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,329, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   1.6677E-06
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HIGHEST NONGRIDDED VALUE for (yr,day,hour) = (86,337, 0)  Pollutant:  1  NG receptor no. =     1   MAX. VALUE =   1.6402E-06

Calculate 24-hr average SO2 concentrations
```

ROUTINE CALLED	POLLUTANT	ARRAY SIZE	STARTING RECORD OF DISK OUTPUT	RECEPTOR TYPE	NO. NG RECEPTORS
DEFN	SO2 CONC.	26 X 26	1	NONGRIDDED	1

ROUTINE CALLED	DEFINES RUNSTREAM NO.	LOGICAL UNIT	YR/DAY/HR	NO. GRIDS
FIND	1	10	86/327/ 1	240

ROUTINE CALLED	AVERAGING TIME	PRINTER OUTPUT	DISK OUTPUT	PLOT	CONTOUR LEVELS	INPUT FIELDS PRINTED
AVRG	24	NO	NO (0- 0)	NO	DEFAULT	NO

RUNSTREAM NO.	ORDER	A	B	IFORM	NEWMES	ISCHEK	IHIGH
1	FIRST	1.00000E+00	0.00000E+00	2	0	0	1

```
RUNTIME CALL NO.:       2   DATE: 05/20/94   TIME: 15:16:58.64
DELTA TIME:      0.11 (SEC)
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TAMPA ELECTRIC
A TECO ENERGY COMPANY

May 10, 1994

Mr. Clair Fancy
Florida Department of Environmental
Protection Bureau of Air Regulation
2600 Blair Stone Road
Mail Station 5500
Tallahassee, Florida 32399-2400

RE: TEC Polk Power Station Unit No. 1
CT Emission Correction Curves
Condition of Certification No. 5 XIII.B and XIII.H

Dear Mr. Fancy:

Please find enclosed the Syngas Fuel Emission Correction Curve (1625 mmBTU/Hr. @ 59 F, LHV), which was inadvertently omitted from the "package" we submitted to you on May 6, 1994. We regret any inconvenience this may have caused you.

If you have any questions, please call Robert Durgan at (813)228-4137 or me at (813)228-4844.

Sincerely,

Patrick A. Ho

Patrick A. Ho, P.E.
Manager
Environmental Planning

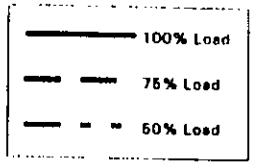
RECEIVED
MAY 11 1994
Bureau of
Air Regulation

ad\RWD\DD157

Enclosure

cc: Mr. H.S. Oven, Jr. P.E. (w\enc)
D. Arif
C. Holladay
B. Thomas, SW Dist.
G. Harper, EPA

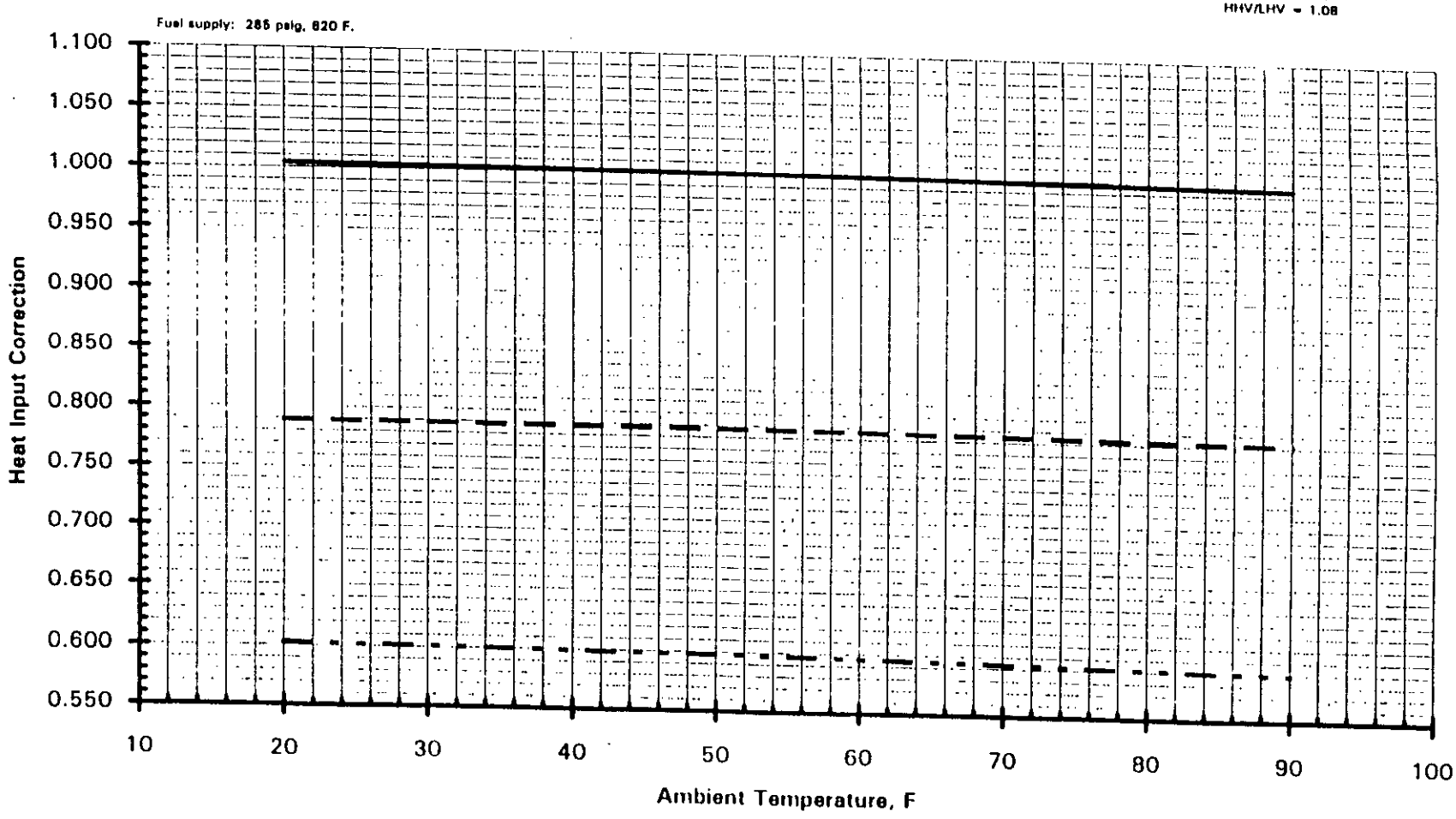
TEC Polk Unit 1
HEAT INPUT CORRECTION vs AMBIENT
Estimated Data, Not Guaranteed
Syngas Fuel, Combined Cycle
Base Load, 60% RH, Illinois #6 Coal
Heat Input = 1625 mmBTU/Hr @ 59 F, LHV



Fuel Composition:
Volume %

CO	44.485
CO2	14.647
H2	33.304
H2O	0.361
N2	5.811
CH4	0.180
Ar	1.168
H2S	0.001
COS	0.030

236.4 BTU/SCF, LHV
HHV/LHV = 1.08



3/11/94

TECO ENERGY

RECEIVED

MAY 9 1994

Bureau of
Air Regulation

May 6, 1994

Mr. Clair Fancy
Florida Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Mail Station 5500
Tallahassee, Florida 32399-2400

RE: TEC Polk Power Station Unit No. 1
CT Emission Correction Curves

Dear Mr. Fancy:

Please find enclosed the emission correction curves that satisfy the requirements of Sections XIII.B and XIII.H of the conditions of Certification for Polk Power Station. These curves are also required per special conditions B and H of our PSD permit PSD-FL-194.

The curves were supplied to us by General Electric, the manufacturer of the combined cycle system. The curves address ambient temperature corrections to heat input, along with emissions of SO_2, NO_X, CO, and VOC for syngas and distillate oil firing. These curves generally follow the emission data provided to FDEP in our Sufficiency Response FDER-B.

Please note that the data provided by General Electric are calculated, and not specifically a part of the performance guarantees provided in our contract. The data is based on specific syngas/oil analyses and may require adjustment if actual conditions are different. The heat impact data are on a Lower Heating Value basis; the "HHV/LHV" ratios are provided on the curves for calculation of Higher Heating Value bases given in the Conditions of Certification and PSD permit. For example, the 1625 mmBtu/hr LHV on the syngas heat input correction curve is multiplied by 1.08 to give the value of 1755 mmBtu/hr HHV shown in the Conditions of Certification and PSD permit.

If you have any questions, please call Robert Durgan at (813)228-4137 or me at (813)228-4844.

Sincerely,

Patrick A. Ho, P.E.
Manager
Environmental Planning

ad\RWD\DD156

Enclosure

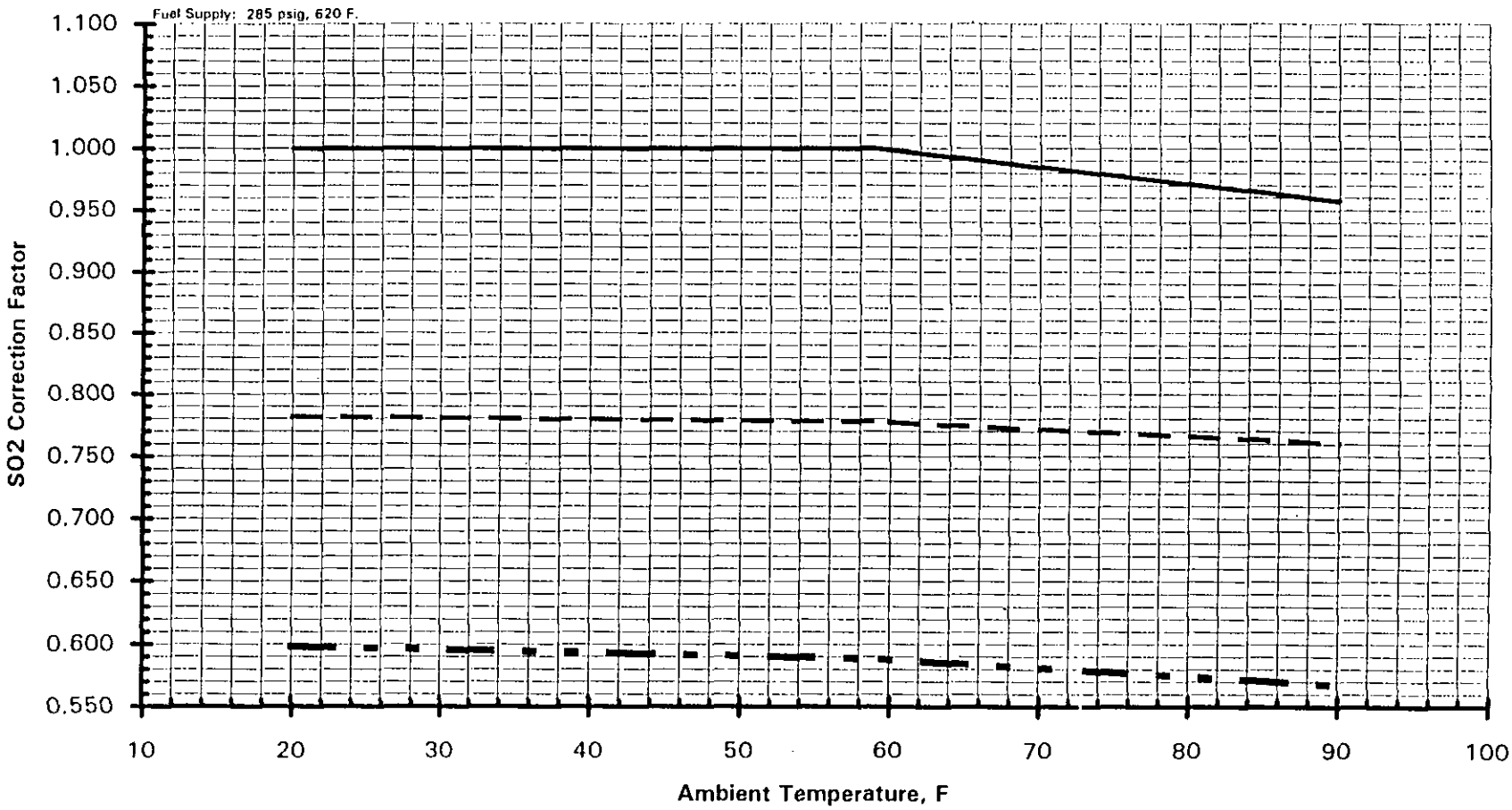
cc: Mr. H.S. Oven, Jr. P.E. (w/enc)

TEC Polk Unit 1
SO2 CORRECTION FACTOR vs AMBIENT
Estimated Data, Not Guaranteed
Syngas Fuel, Combined Cycle
Base Load, 60% RH, Illinois #6 Coal
SO2 Basis = 357 Lb/Hr @ 59 F

Fuel Composition:
Volume %

CO	44.485
CO2	14.647
H2	33.304
H2O	0.361
N2	5.811
CH4	0.180
Ar	1.168
H2S	0.001
COS	0.030

236.4 BTU/SCF, LHV
HHV/LHV = 1.08



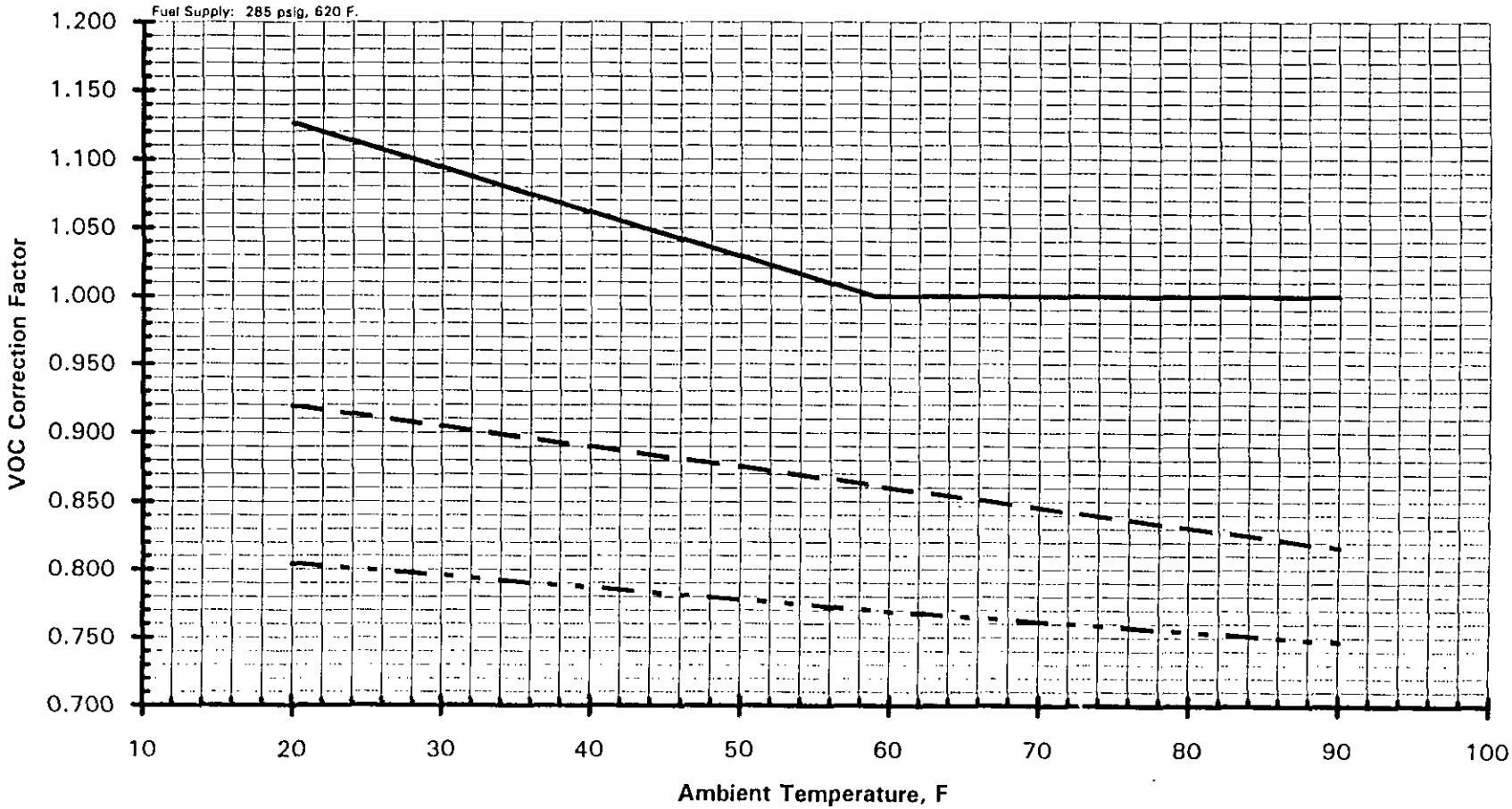
3/24/94

TEC Polk Unit 1
CO CORRECTION FACTOR vs AMBIENT
Estimated Data, Not Guaranteed
Syngas Fuel, Combined Cycle
Base Load, 60% RH, Illinois #6 Coal
CO Basis = 87.5 Lb/Hr @ 59 F

Fuel Composition:
Volume %

CO	44.485
CO2	14.647
H2	33.304
H2O	0.361
N2	5.811
CH4	0.180
Ar	1.168
H2S	0.001
COS	0.030

236.4 BTU/SCF, LHV
HHV/LHV = 1.08



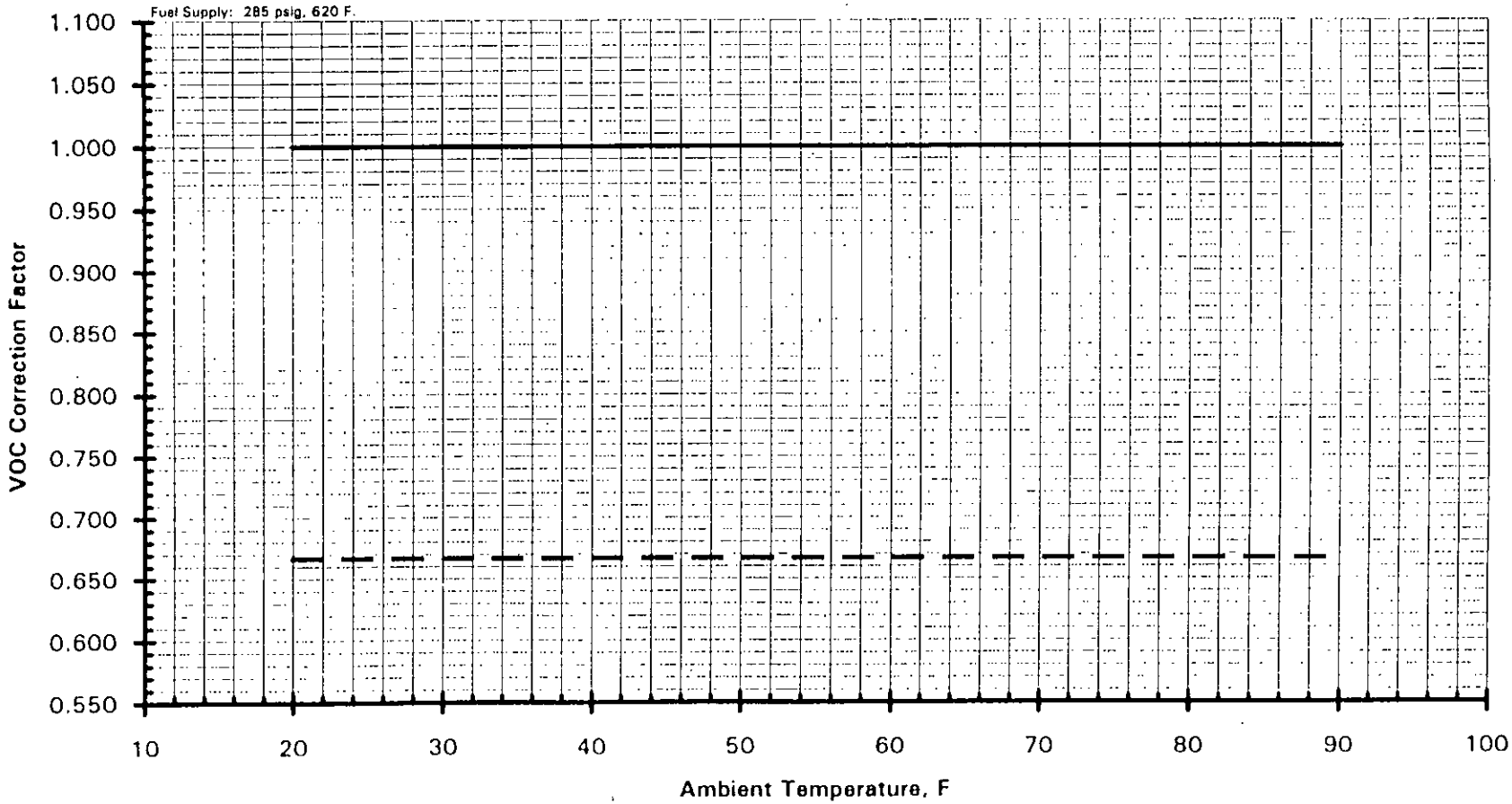
3/24/94

TEC Polk Unit 1
VOC CORRECTION FACTOR vs AMBIENT
Estimated Data, Not Guaranteed
Syngas Fuel, Combined Cycle
Base Load, 60% RH, Illinois #6 Coal
VOC Basis = 3 Lb/Hr @ 59 F

Fuel Composition:
Volume %

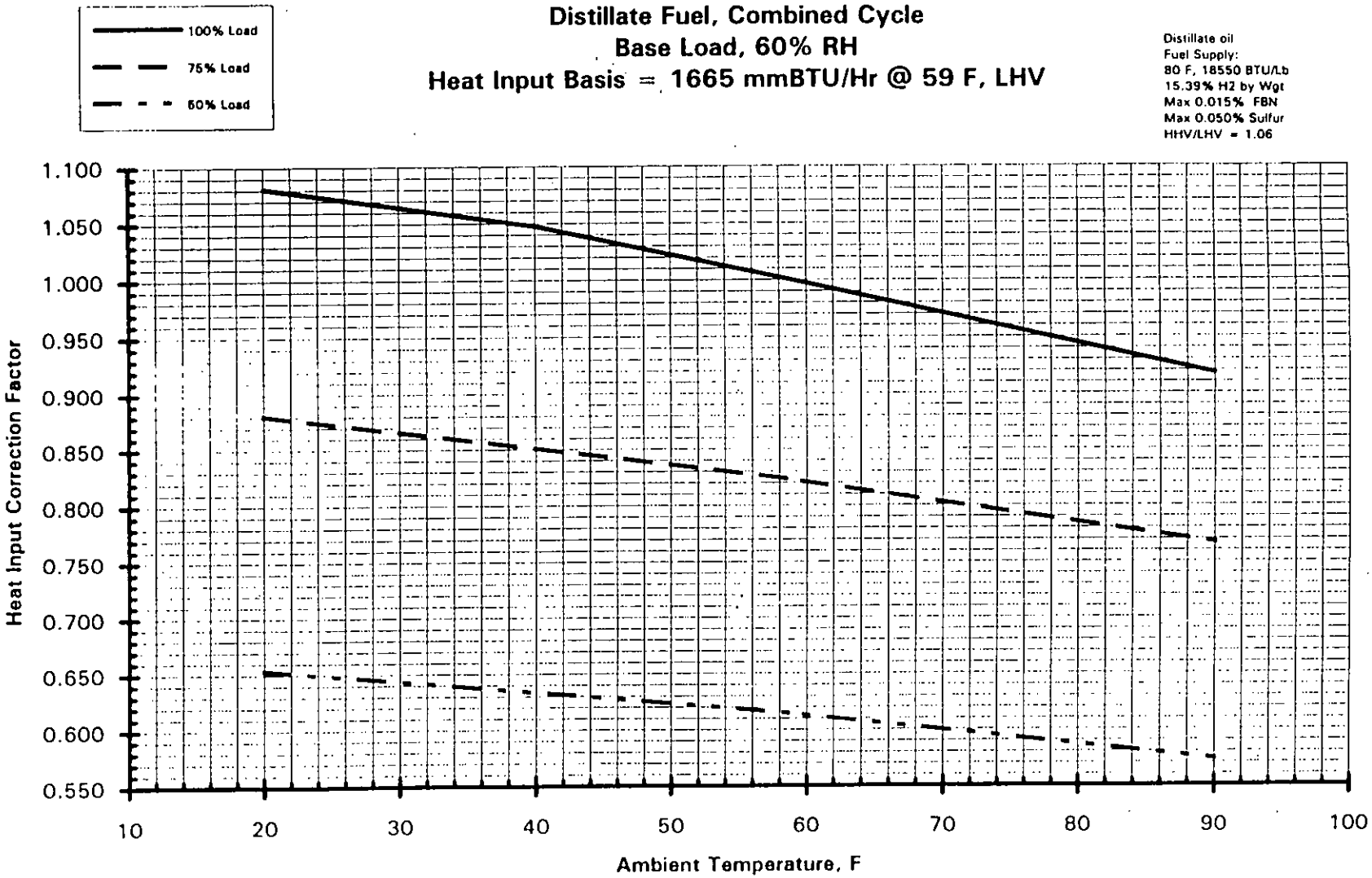
CO	44.485
CO2	14.647
H2	33.304
H2O	0.361
N2	5.811
CH4	0.180
Ar	1.168
H2S	0.001
COS	0.030

236.4 BTU/SCF, LHV
HHV/LHV = 1.08



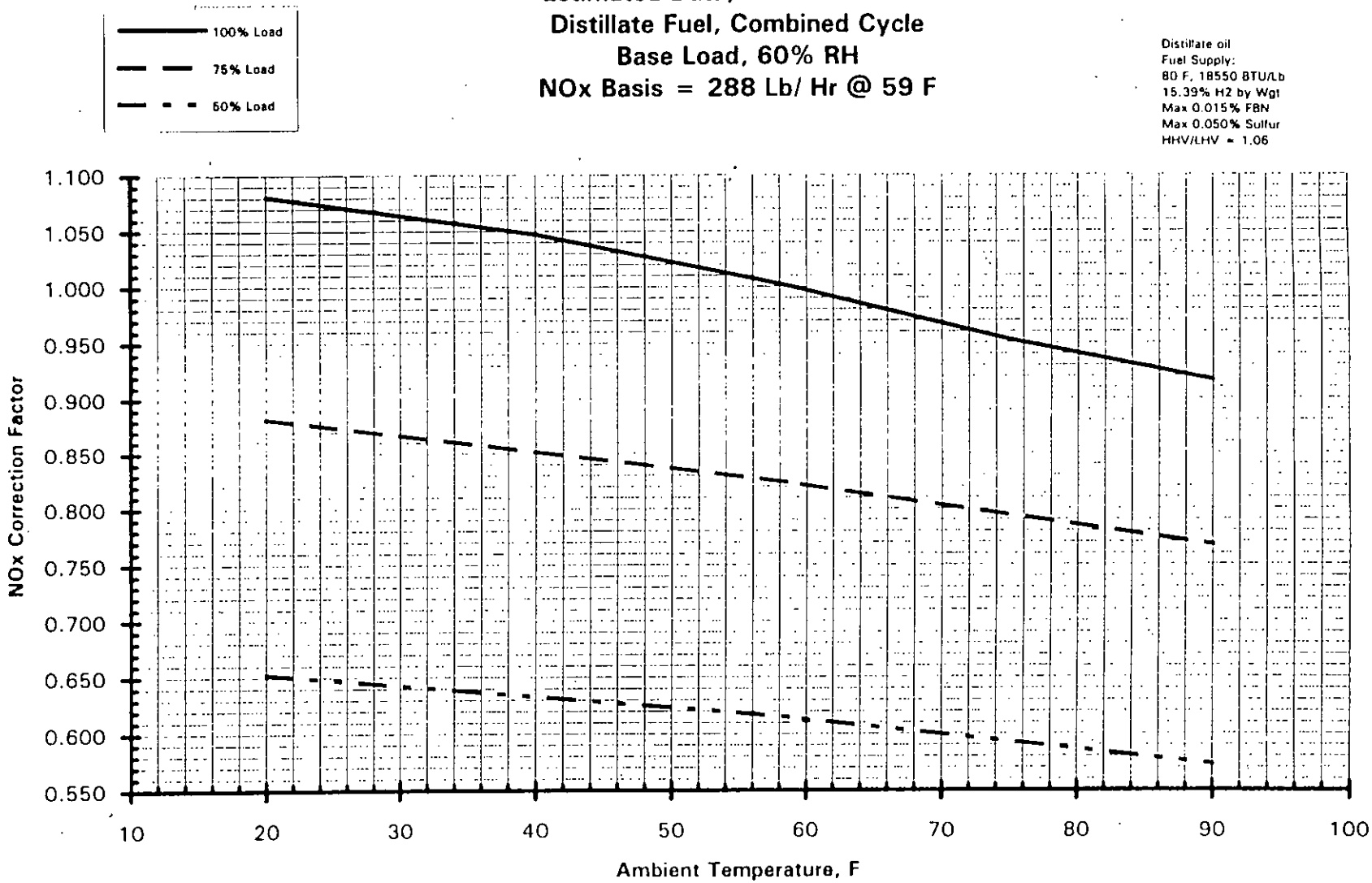
3/11/94

TEC Polk Unit 1
HEAT INPUT CORRECTION vs AMBIENT
Estimated Data, Not Guaranteed
Distillate Fuel, Combined Cycle
Base Load, 60% RH
Heat Input Basis = 1665 mmBTU/Hr @ 59 F, LHV



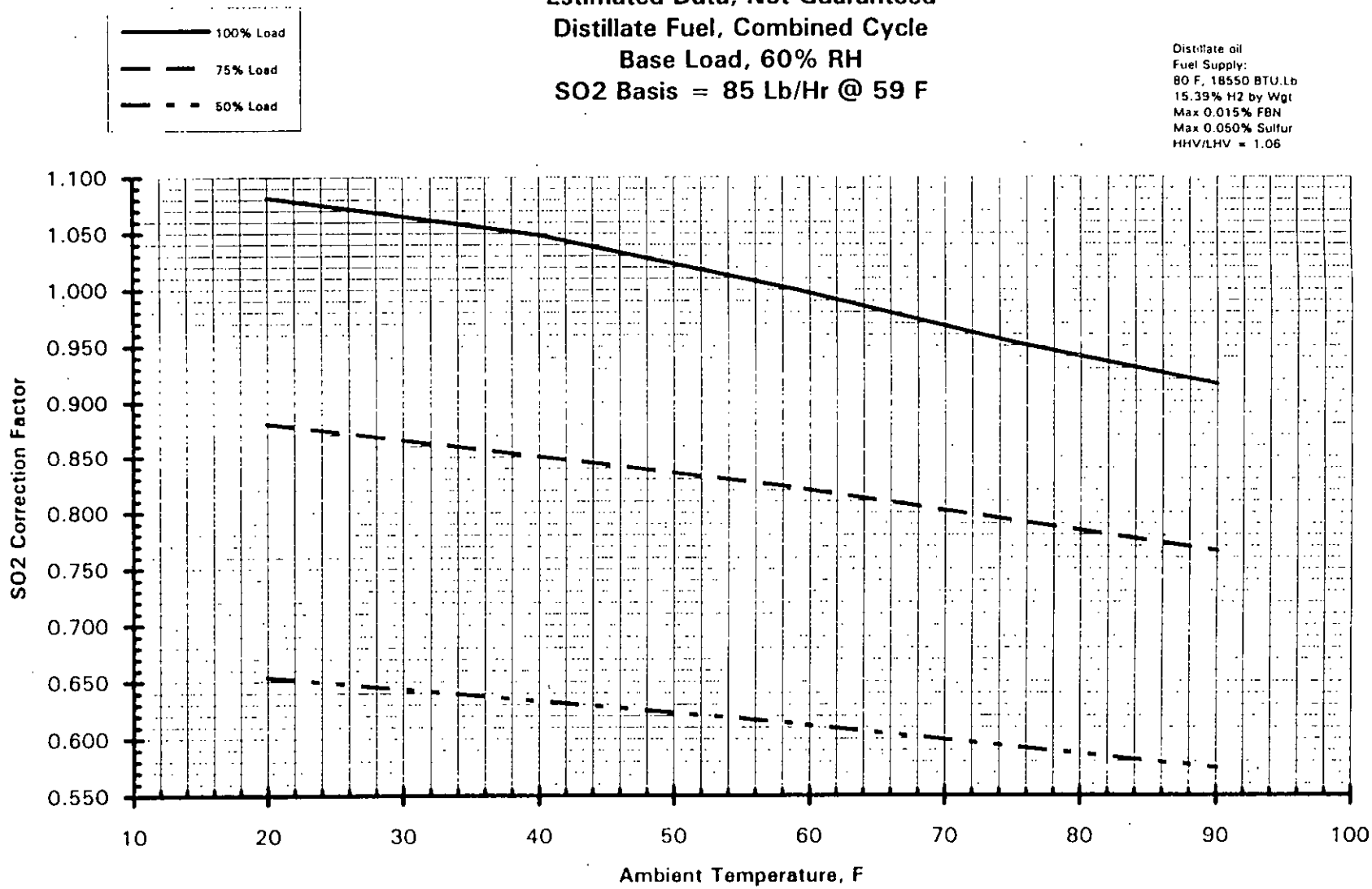
3/11/94

TEC Polk Unit 1
NOx CORRECTION FACTOR vs AMBIENT
Estimated Data, Not Guaranteed
Distillate Fuel, Combined Cycle
Base Load, 60% RH
NOx Basis = 288 Lb/ Hr @ 59 F



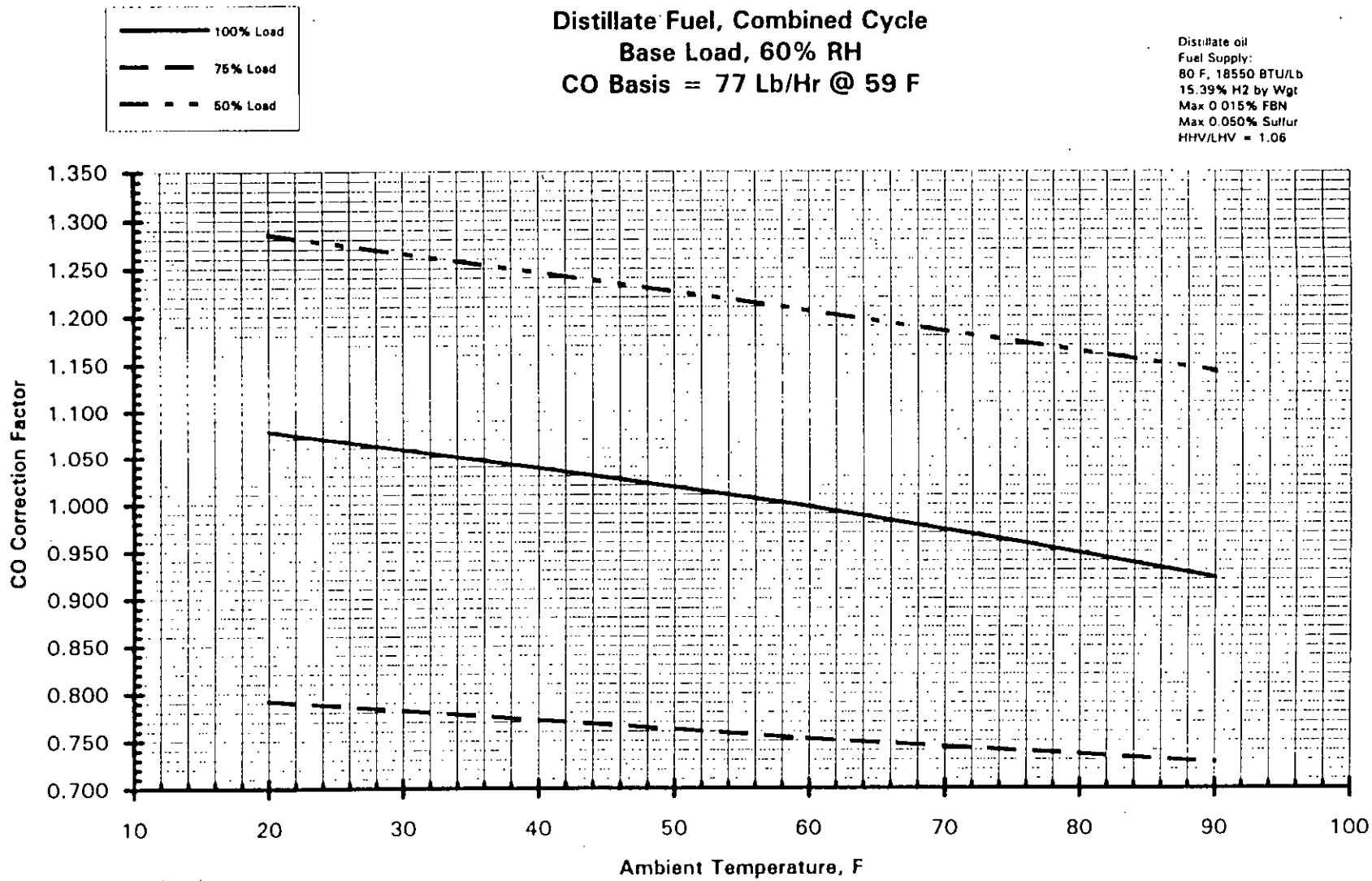
3/11/94

TEC Polk Unit 1
SO2 CORRECTION FACTOR vs AMBIENT
Estimated Data, Not Guaranteed
Distillate Fuel, Combined Cycle
Base Load, 60% RH
SO2 Basis = 85 Lb/Hr @ 59 F



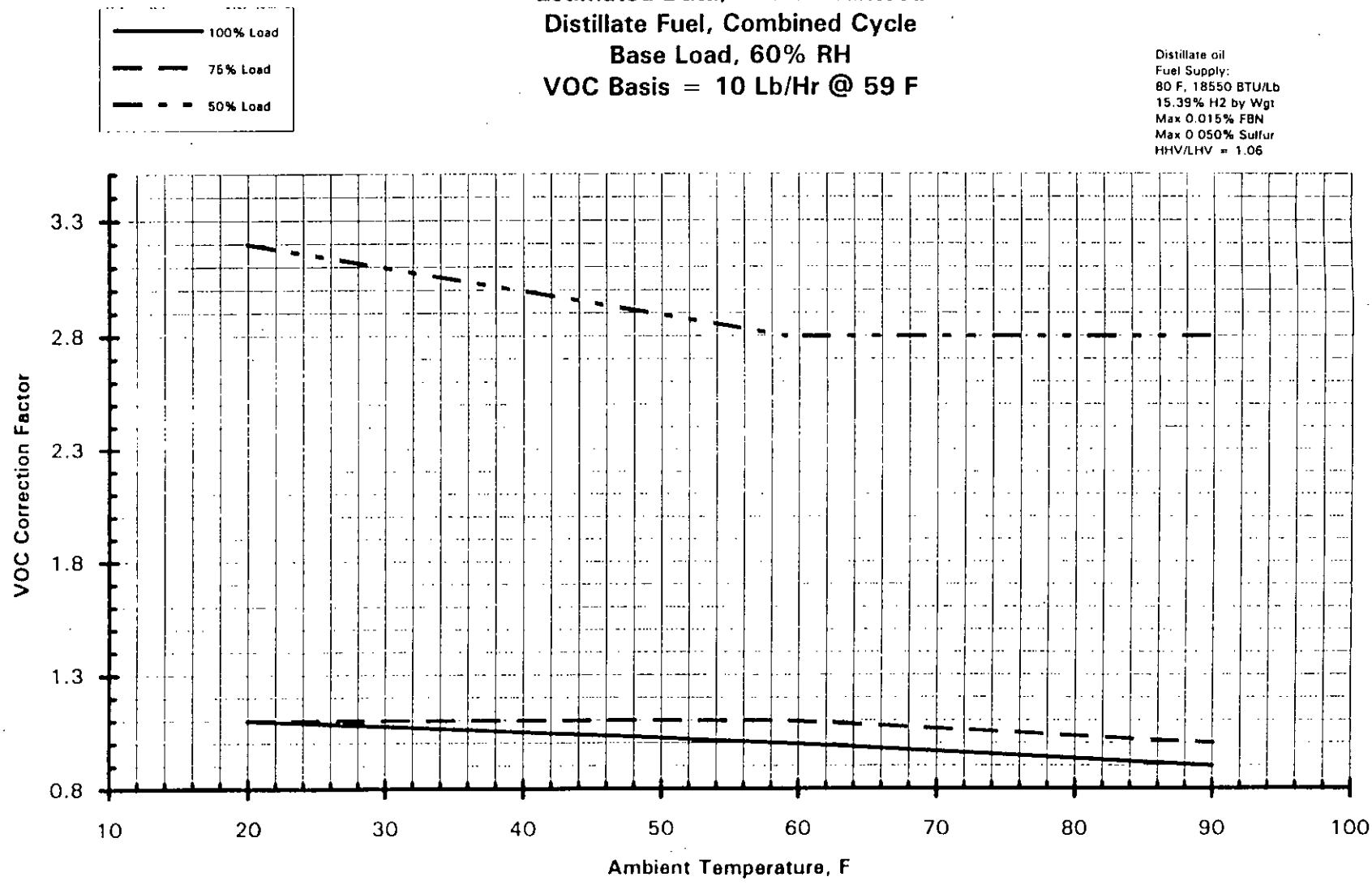
3/11/94

TEC Polk Unit 1
CO (Lb/Hr) vs AMBIENT TEMPERATURE
Estimated Data, Not Guaranteed
Distillate Fuel, Combined Cycle
Base Load, 60% RH
CO Basis = 77 Lb/Hr @ 59 F



3/11/94

TEC Polk Unit 1
VOC CORRECTION FACTOR vs AMBIENT
Estimated Data, Not Guaranteed
Distillate Fuel, Combined Cycle
Base Load, 60% RH
VOC Basis = 10 Lb/Hr @ 59 F



3/11/94

Florida Department of
Environmental Protection

Memorandum

TO: Power Plant Siting Review Committee

FROM: Buck Oven BO

DATE: May 12, 1994

SUBJECT: TECO Polk Power Station PA 92-32, Module 8042

Attached please find TECO's Polk Power Station amendment and requested modification to the conditions of certification. Please review the material for completeness/sufficiency and respond by June 10, 1994.

RECEIVED

MAY 13 1994

Bureau of
Air Regulation

Attach.

Patty - Please Distribute

Syed and I attended a meeting on 4/27/94 and the changes were considered minor. Syed will have to handle our response when he returns.

Preston
5/16/94

Florida Department of
Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

May 17, 1994

Mr. John Bunyak, Chief
Policy, Planning and Permit Review Branch
National Park Service-Air Quality Division
P. O. Box 25287
Denver, CO 80225

Dear Mr. Bunyak:

RE: TECO Polk Power Station
Modification Request
Polk County, PSD-FL-194A

The Department has received the above referenced PSD amendment package. Please review this package and forward your comments to the Department's Bureau of Air Regulation by June 6, 1994. The Bureau's FAX number is (904)922-6979.

If you have any questions, please contact Syed Arif or Cleve Holladay at (904)488-1344 or write to me at the above address.

Sincerely,

Patty Adams for

C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/pa

Enclosures

Florida Department of
Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Lawton Chiles
Governor

Virginia B. Wetherell
Secretary

May 17, 1994

Ms. Jewell A. Harper, Chief
Air Enforcement Branch
U.S. EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30308

Dear Ms. Harper:

RE: TECO Polk Power Station
Modification Request
Polk County, PSD-FL-194A

The Department has received the above referenced PSD amendment package. Please review this package and forward your comments to the Department's Bureau of Air Regulation by June 6, 1994. The Bureau's FAX number is (904)922-6979.

If you have any questions, please contact Syed Arif or Cleve Holladay at (904)488-1344 or write to me at the above address.

Sincerely,

Patty Adams

for C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/pa

Enclosures

Florida Department of
Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

FAX TRANSMITTAL SHEET

TO: Christian M. Hoberg

DATE: 5/4/94 PHONE: 404/347-3776

TOTAL NUMBER OF PAGES, INCLUDING COVER PAGE: 1

FROM: Doug Outlaw

DIVISION OF AIR RESOURCES MANAGEMENT

COMMENTS: Clere Holliday has reviewed the draft EIS excepts from the draft EIS for TECO Polk Power Station. No changes to the draft but regarding air quality modeling are suggested.

Doug Outlaw

PHONE: 904-488-1344 FAX NUMBER: 904/922-6979

If there are any problems with this fax transmittal, please call the above phone number.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

FACSIMILE TRANSMISSION

DATE: 4/29/94

TOTAL NO. OF PAGES: Cover + 4

TO: Doug Outlaw / Tom Rogers
FDEP

PHONE: 904/488-1344

FAX: 904/922-6979

****

FAX FROM:

CHRISTIAN M. HOBERG
ENVIRONMENTAL POLICY SECTION
FEDERAL ACTIVITIES BRANCH
U. S. ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET, NE
ATLANTA 30365

PHONE: 404 347-3776
FAX: 404/347-5206

NOTES / MESSAGES / INSTRUCTIONS:

Doug - Per our discussion, please review these draft excerpts for accuracy and completeness for the TECO Polk Power Station PETS. Thx

STATE FDEP REVIEW FOR EPA
DOUG OUTLAW / TOM ROGERS

SHORT VERSION FOR FEIS EXECUTIVE SUMMARY

TAKEN FROM DRAFT FEIS FOR TECO POLK POWER STATION
FAXED 4/29/94

9. Resolution of DEIS Unresolved Issues

The unresolved issues at the DEIS stage of this EIS have either been resolved or mechanisms to resolve them have been established. The unresolved issues at the DEIS stage primarily pertained to DOI-requested air quality depositional modeling, USACOE Section 404 dredge-and-fill permitting, and NEPA compliance with federal, state and/or local agencies for several proposed linear facility alignments (i.e., transmission lines, railroad spur, natural gas line, and possibly fuel oil pipeline).

Air Quality Depositional Modeling

Issue: In response to EPA coordination during DEIS development, DOI indicated concerns regarding potential PSD air quality impacts to the Chassahowitzka NWA and requested additional modeling using a revised MESOPUFF II model to predict deposition and concentration of sulfate, nitrate, mercury and beryllium.

Initial EPA Response: EPA's initial response to the DOI concerns was that Industrial Source Complex (ISC) dispersion modeling as opposed to MESOPUFF II modeling had been conducted for the four parameters. Additionally, EPA indicated that EPA had fully delegated the PSD Program to the State of Florida, that beyond the PSD incremental assessment the DOI Federal Land Manager (FLM) at the Chassahowitzka NWA may interpret the proposed power station to have an adverse effect on the environmental criteria for the Class I area, that the State of Florida consequently would be coordinating with the FLM, and that EPA would also consider the need for additional modeling from a NEPA perspective based on the FLM's decision.

Subsequent DOI-FDEP Coordination: Because the PSD Program is now fully delegated to the State of Florida, additional coordination occurred between DOI and FDEP. Relative to the Air Quality Related Values Analysis in a letter to FDEP dated February 14, 1994, DOI expressed concern about cumulative depositional effects of sulfate, nitrate, mercury and beryllium and that the DEIS analysis was not cumulative for these pollutants. DOI stated that: "We need to know: (1) the cumulative deposition of pollutants, and (2) the ecological consequences of this deposition" and that, "We ask that TECO be required to perform these analyses when they apply for permits for future phases of their Polk Power Station."

PAGE 2 OF SHORT VERSION

EPA's NEPA Resolution: From a NEPA perspective, EPA agrees with the State of Florida that additional modeling to determine potential cumulative depositional effects for sulfate, nitrate, mercury and beryllium (as well as any other reasonable parameters that may need to be monitored), should be modeled for the proposed additional units beyond the 260-MW Polk Unit 1 (if Tampa Electric Company pursues these additional units and the additional need for power for these units is approved by the Florida PSC). Additional coordination should therefore be conducted by Tampa Electric Company with FDEP during prospective application for such additional units up to 1,150 MW at the Polk Power Station. Based on the February 14, 1994 letter from DOI to FDEP, it appears that the mechanism for resolving the air quality modeling issue has been established for units beyond the 260-MW and up to the proposed 1,150 MW full buildout for the Polk Power Station.

STATE FDEP REVIEW FOR EPA
DOUG OUTLAW / TOM ROGERS

LONG VERSION FOR FEIS TEXT

TAKEN FROM DRAFT FEIS FOR TECO POLK POWER STATION
FAXED 4/29/94

6.3 RESOLUTION OF DEIS UNRESOLVED ISSUES

The unresolved issues at the DEIS stage of this EIS have either been resolved or mechanisms to resolve them have been established. The unresolved issues at the DEIS stage primarily pertained to DOI-requested air quality depositional modeling, USACOE Section 404 dredge-and-fill permitting, and NEPA compliance with federal, state and/or local guidelines for natural gas linear facility alignments (i.e., transmission lines, railroad spur, natural gas line, and possibly coal oil pipeline).

A Air Quality Depositional Modeling

Issue: In response to EPA coordination by letter dated May 27, 1993 to DOI during DEIS development, DOI returned a letter to EPA dated July 26, 1993 (see Appendix B; U.S. Department of the Interior). In this letter, DOI requested additional MESOPUFF II air quality modeling to evaluate effects to the Chassahowitzka National Wilderness Area (NWA), a class I air quality area. Of particular concern were potential depositions of sulfate on freshwater wetlands, nitrate depositions on the saltwater habitat, and general deposition of mercury and beryllium.

Initial EPA Response: EPA's response to DOI in a letter dated December 22, 1993 (see Appendix B, U.S. Department of the Interior), indicated that Industrial Source Complex (ISC) dispersion modeling as opposed to the requested MESOPUFF II modeling had been conducted for sulfate, nitrate, mercury and beryllium. The letter also stated that since its last letter of May 27, 1993, EPA had fully delegated the Prevention of Significant Deterioration (PSD) Program to the State of Florida (see EPA's October 26, 1993 letter at end of Appendix D). Beyond the PSD incremental assessment, the EPA response letter further indicated that the DOI Federal Land Manager (FLM) at the Chassahowitzka NWA may interpret the proposed power station to have an adverse effect on the environmental criteria for the Class I area and that consequently the State of Florida would be coordinating with the FLM consistent with Air Quality Related Values Analysis responsibilities noticed at 40 CFR 52.21(p)(2). In addition, EPA indicated it would also consider the need for additional modeling from a NEPA perspective based on the FLM's decision.

Subsequent DOI-FDEP Coordination: Because the PSD Program is now fully delegated to the State of Florida, additional coordination occurred between DOI and FDEP. In a letter dated February 14, 1994, DOI provided comments to the FDEP on the PSD application and the Technical Evaluation and Preliminary Determination for the proposed Polk Power Station (see DOI letter to FDEP with FDEP cover letter dated February 25, 1994 to Tampa Electric Company in Appendix B, U.S. Department of the Interior). In regard to the Air Quality Related Values Analysis, DOI expressed concern about cumulative depositional effects of sulfate, nitrate, mercury and beryllium and that the DEIS analysis was not cumulative for these pollutants. DOI stated that: "We need to know: (1) the cumulative deposition of pollutants, and (2) the ecological consequences of this deposition" and that, "We ask that TECO be required to perform these analyses when they apply for permits for future phases of their Polk Power Station" (also see Appendix D for other DOI comments in this letter regarding concurrence with selected best available control technology for sulfur dioxide and NO_x emission control, need for modeling of the 260-MW facility as opposed to the 1,150-MW facility to prevent "increment banking," and EPA VISCREEN modeling results).

EPA's NEPA Resolution: From a NEPA perspective, EPA agrees with the State of Florida that additional modeling to determine potential cumulative depositional effects for sulfate, nitrate, mercury and beryllium (as well as any other reasonable parameters that may need to be monitored) should be modeled for the proposed additional units beyond the 260-MW Polk Unit 1 (if Tampa Electric Company purchases these additional units and the additional need for power for these units is approved by the Florida PSC). Additional coordination should therefore be conducted by Tampa Electric Company with FDEP during prospective application for such additional units up to 1,150 MW at the Polk Power Station. Based on the February 14, 1994 letter from DOI to FDEP, it appears that the mechanism for resolving the air quality modeling issue has been established for units beyond the 260-MW and up to the proposed 1,150 MW full buildout for the Polk Power Station.

ECT
Environmental Consulting & Technology, Inc.

April 18, 1994
ECT No. 94014-0002-1300

Mr. Preston Lewis
Florida Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Mail Station 5500
Tallahassee, Florida 32399-2400

Re: Tampa Electric Company Polk Power Station

Dear Mr. Lewis:

As per your telephone conversation with Mr. Greg Nelson of Tampa Electric Company, enclosed is information describing proposed revisions to the Polk Power Station project and the impacts these revisions will have on ambient air concentrations. Please contact Mr. Nelson at 813/228-4847 if you have any questions prior to our meeting to discuss these revisions.

Sincerely,

ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.

Alan M. Trbovich

Alan M. Trbovich, CCM
Senior Scientist

AMT/dlm

cc: Greg Nelson, TEC
Jack Doolittle, ECT
S. Kinsey
C. Holladay
R. Thomas, SW Dist
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TAMPA ELECTRIC COMPANY POLK POWER STATION
POSTCERTIFICATION DESIGN REVISIONS
AIR QUALITY CHANGES

Design Revision	Reason for Revision	Effect of Revision
• Coal storage in silos instead of open piles.	Availability of coal delivery from Big Bend Station.	Significantly changes PM emission characteristics and reduces PM ambient impacts.
• Revised structure dimensions: 7F HRSG enclosure, SGC wings 1 and 2, gasifier, cold box, coal grinding day bin, coal storage silos 1 and 2, oil tanks 1, 2, and 3, coal delivery enclosure (see revised Table 3.2.0-2).	Ongoing detailed engineering by Bechtel.	Revised GEP modeling shows small changes in downwash characteristics.
• Revised locations of IGCC HRSG, auxiliary boiler, and thermal oxidizer stacks (see revised Figure 3.2.0-5).	Ongoing detailed engineering by Bechtel.	See discussion for auxiliary boiler changes, below.
• Increased size (49.5 to 120 MMBtu/hr) normal operating hours (1,000 to 3,000 hr/yr) and standby operating hours (0 to 8,760 hr/yr) for auxiliary boiler. Raising SH	Ongoing detailed engineering by Bechtel indicates previous boiler too small to meet IGCC unit needs.	Revised significant impact area (SIA) modeling shows slightly increased SO_2 and NO_x and annual PM ambient impacts compared to SCA Rev. 2 analyses, but are less than original SCA impacts. Revised SIA modeling shows decreased short-term PM and CO ambient impacts compared to SCA Rev. 2 and original SCA analyses. Revised SIA modeling shows SIAs for SO_2, NO_x, and PM_{10} are smaller than SIAs analyzed in original SCA. Revised detailed PSD Class I and II, AAQS, and air toxics modeling is not planned.
• Decrease use of HGCU system for treatment of syngas from approximately 50 percent of syngas flow to approximately 10 to 15 percent.	Ongoing design and pilot scale testing by GEESI.	No change in PSD permit emission limits for demonstration or postdemonstration periods.
• Provide separate stacks for sulfuric acid plant and thermal oxidizer and decrease size of thermal oxidizer for hot gas cleanup (HGCU) unit only.	Make sulfuric acid plant operation similar to standard design for other acid plants in central Florida and elsewhere.	Separate stacks and revised emissions rates included in revised SIA modeling discussed for auxiliary boiler changes above.

TAMPA ELECTRIC COMPANY POLK POWER STATION
POSTCERTIFICATION DESIGN REVISIONS
AIR QUALITY CHANGES
(Continued, Page 2 of 2)

Design Revision	Reason for Revision	Effect of Revision
• Changes in conditions of certification numbers XIII.E, XIII.G, XIII.I, XIII.L, and XIII.N.	Changes in size and hours of operation for auxiliary boiler, addition of coal storage silos, and elimination of coal storage piles.	E. Auxiliary boiler size increased. G. References to coal storage piles eliminated. I. Auxiliary boiler operating hours increased. L. Continuous NO_x and opacity monitoring required on auxiliary boiler emissions. N. 40 CFR Db added as applicable to auxiliary boiler.

Source: ECT, 1994.

Table 3.2.0-2. Dimensions of All Structures Exceeding 50 Ft in Height and Exhaust Stacks on the Polk Power Station Site

Elements	Structure Dimensions Length (ft)	Width (ft)	Height (ft)
Gasifier structure	60	~~40~~ 63	300
Syngas cooling wings (2)	~~180~~ 152	~~35~~ 25	~~100~~ 90
Air separation unit cold box	~~12*~~ 23*	--	~~110~~ 165
Coal grinding structure	~~80~~ 50	~~60~~ 25	~~175~~ 90
IGCC HRSG	~~150~~ 131	~~40~~ 43	~~80~~ 90
CC HRSGs (4)	75	33	57
H_2SO_4 plant absorbers (2) and dryer (1)	8*	--	60
H_2SO_4 plant gas cooling tower	8*	--	70
Acid gas removal stripper	10*	--	100
Water wash column	10*	--	80
Acid gas removal absorber	10*	--	100
~~One day~~ Coal storage ~~bin~~ silos (2)	~~25~~ 59*	~~25~~ --	~~70~~ 197
HGCU	65	52	~~218~~ 279
Oil Storage Tanks (3)	100*	--	57

Exhaust Stacks	Stack Height (ft)	Stack Diameter (ft)
IGCC HRSG stack	150	19
CC HRSG stacks (4)	150	14.5
HGCU thermal oxidizer	125	~~4~~
Auxiliary boiler	~~20~~ 75	~~5~~ 3.7
Flare	~~75~~ 150	4
CC/bypass stacks (10)	75	18†
H_2SO_4 plant ~~thermal oxidizer~~	199	~~3~~ 2.5

*Diameter.
†Equivalent diameter. Stack is usually square.

Sources: Texaco, 1992.
Bechtel, 1993~~4~~.

Table 7-9. Maximum Polk Power Station Criteria Pollutant Impacts

Pollutant	Averaging Time	Maximum Impact ($\mu g/m^3$)	Significance Level ($\mu g/m^3$)
SO_2 (HGCU/CGCU)	Annual	~~1.58~~ ~~1.24~~ *1.50*	1.0
	24-hour	~~19.0~~ ~~14.6~~ *16.0*	5.0
	3-hour	~~68.6~~ ~~47.3~~ *54.8*	25.0
SO_2 (100% CGCU)	Annual	~~1.58~~ ~~1.24~~ *1.35*	1.0
	24-hour	~~19.0~~ ~~14.6~~ *15.9*	5.0
	3-hour	~~68.6~~ ~~47.3~~ *54.4*	25.0
NO_x	Annual	~~1.78~~ ~~1.06~~ *1.20*	1.0
PM	Annual	~~1.49~~ ~~1.13~~ *1.14*	1.0
	24-hour	~~29.4~~ ~~33.6~~ *19.1*	5.0
CO	8-hour	~~67.1~~ ~~52.9~~ *49.6*	500
	1-hour	~~169.2~~ ~~137.4~~ *123.2*	2,000
Lead	Quarterly	~~0.0018~~ 0.0011	NA*

*The AAQS for lead is 1.5 $\mu g/m^3$.

Source: ECT, 1992 ~~3~~ *4*.

Table 7-10a. Summary of SO_2 Impacts Due to Polk Power Station Sources (HGCU/CGCU Case)*

	1982	1983	1984	1985	1986
Annual average					
Highest ($\mu g/m^3$)	~~1.34~~ ~~0.99~~ *1.32*	~~1.26~~ ~~0.84~~ *1.25*	~~1.35~~ ~~1.02~~ *1.32*	~~1.27~~ ~~1.07~~ *1.24*	~~1.58~~ ~~1.24~~ *1.50*
Location					
Distance (meters)	~~1,310~~ ~~3,500~~ *1,310*	~~1,310~~ ~~3,000~~ *1,310*	~~1,415~~ ~~3,000~~ *1,600*	~~1,415~~ ~~2,500~~ *1,310*	~~1,310~~ ~~2,000~~ *1,310*
Radial (°)	~~290~~ ~~270~~ *290*	~~290~~ ~~270~~ *290*	~~280~~ 270	~~280~~ ~~90~~ *290*	~~290~~ ~~90~~ *290*
24-Hour average					
Highest ($\mu g/m^3$)	~~15.9~~ ~~10.5~~ *13.6*	~~17.9~~ ~~12.0~~ *14.0*	~~18.4~~ ~~14.6~~ *16.0*	~~19.0~~ ~~11.4~~ *15.1*	~~15.1~~ ~~13.0~~ *13.8*
Location					
Distance (meters)	~~2,000~~ ~~2,500~~ *2,135*	~~2,000~~ ~~2,135~~ *2,000*	1,995	2,000	1,995
Radial (°)	120	120	130	120	130
Second highest ($\mu g/m^3$)	~~10.3~~ ~~7.52~~ *9.90*	~~15.5~~ ~~10.5~~ *13.9*	~~17.0~~ ~~11.1~~ *14.4*	~~18.1~~ ~~10.9~~ *14.0*	~~13.1~~ ~~10.3~~ *10.4*
Location					
Distance (meters)	~~2,000~~ ~~3,000~~ *2,000*	2,000	1,995	2,000	1,995
Radial (°)	~~110~~ 120	120	130	120	130
3-Hour average					
Highest ($\mu g/m^3$)	~~48.4~~ ~~32.3~~ *35.1*	~~53.3~~ ~~37.6~~ *38.7*	~~67.3~~ ~~47.3~~ *54.8*	~~56.0~~ ~~36.6~~ *40.7*	~~68.6~~ ~~41.8~~ *38.7*
Location					
Distance (meters)	~~1,675~~ ~~2,500~~ *1,770*	~~2,000~~ ~~2,500~~ *1,295*	1,995	2,000	~~1,660~~ 1,995
Radial (°)	~~160~~ ~~330~~ *340*	~~140~~ ~~330~~ *300*	130	120	~~70~~ 130
Second highest ($\mu g/m^3$)	~~34.7~~ ~~27.9~~ *30.1*	~~41.4~~ ~~31.0~~ *31.1*	~~44.3~~ ~~32.7~~ *33.4*	~~51.5~~ ~~35.8~~ *33.4*	~~51.7~~ ~~35.9~~ *34.5*
Location					
Distance (meters)	~~2,000~~ *1,995*	~~1,660~~ 1,995	1,995	~~2,000~~ *1,995*	~~2,000~~ 1,995
Radial (°)	~~140~~ ~~250~~ *130*	~~70~~ 130	130	~~120~~ *130*	~~120~~ 130

* Annual average impacts were based on ISCLT2 results using STAR data (1982 through 1986). Short-term average impacts were based on ISCST2 results for the individual years indicated.

Source: ECT, 1992 ~~3~~ *4*.

Table 7-10b. Summary of SO_2 Impacts Due to Polk Power Station Sources (100% CGCU Case)*

	1982	1983	1984	1985	1986
Annual average					
Highest ($\mu g/m^3$)	~~1.34~~ ~~0.99~~ *1.33*	~~1.26~~ ~~0.84~~ *1.14*	~~1.35~~ ~~1.02~~ *1.35*	~~1.27~~ ~~1.07~~ *1.21*	~~1.58~~ ~~1.24~~ *1.31*
Location					
Distance (meters)	~~1,310~~ ~~3,500~~ *1,310*	~~1,310~~ ~~3,000~~ *1,600*	~~1,415~~ ~~3,000~~ *1,600*	~~1,415~~ ~~2,500~~ *1,600*	~~1,310~~ ~~2,000~~ *1,980*
Radial (°)	~~290~~ ~~270~~ *290*	~~290~~ 270	~~280~~ 270	~~280~~ ~~90~~ *270*	~~290~~ 90
24-Hour average					
Highest ($\mu g/m^3$)	~~15.9~~ ~~10.5~~ *13.5*	~~17.9~~ ~~12.0~~ *13.9*	~~18.4~~ ~~14.6~~ *15.9*	~~19.0~~ ~~11.4~~ *14.8*	~~15.1~~ ~~13.0~~ *13.6*
Location					
Distance (meters)	~~2,000~~ ~~2,500~~ *2,135*	~~2,000~~ ~~2,135~~ *2,000*	1,995	2,000	1,995
Radial (°)	120	120	130	120	130
Second highest ($\mu g/m^3$)	~~10.3~~ ~~7.52~~ *10.1*	~~15.5~~ ~~10.5~~ *13.7*	~~17.0~~ ~~11.1~~ *14.3*	~~18.1~~ ~~10.9~~ *14.1*	~~13.1~~ ~~10.3~~ *10.1*
Location					
Distance (meters)	~~2,000~~ ~~3,000~~ *2,000*	2,000	1,995	2,000	1,995
Radial (°)	~~110~~ 240	120	130	120	130
3-Hour average					
Highest ($\mu g/m^3$)	~~48.4~~ ~~32.3~~ *36.7*	~~53.3~~ ~~37.6~~ *40.4*	~~67.3~~ ~~47.3~~ *54.4*	~~56.0~~ ~~36.6~~ *40.4*	~~68.6~~ ~~41.8~~ *43.1*
Location					
Distance (meters)	~~1,675~~ ~~2,500~~ *1,770*	~~2,000~~ ~~2,500~~ *1,770*	1,995	2,000	~~1,660~~ 1,995
Radial (°)	~~160~~ ~~330~~ *340*	~~140~~ 330	130	120	~~70~~ 130
Second highest ($\mu g/m^3$)	~~34.7~~ ~~27.9~~ *31.0*	~~41.4~~ ~~31.0~~ *30.9*	~~44.3~~ ~~32.7~~ *33.2*	~~51.5~~ ~~35.8~~ *33.2*	~~51.7~~ ~~35.9~~ *34.3*
Location					
Distance (meters)	~~2,000~~ *1,995*	~~1,660~~ 1,995	1,995	~~2,000~~ *1,995*	~~2,000~~ 1,995
Radial (°)	~~140~~ ~~250~~ *130*	~~70~~ 130	130	~~120~~ *130*	~~120~~ 130

* Annual average impacts were based on ISCLT2 results using STAR data (1982 through 1986). Short-term average impacts were based on ISCST2 results for the individual years indicated.

Source: ECT, 1992 ~~3~~ *4*.

Table 7-12. Summary of NO_x Impacts Due to Polk Power Station Sources (Full Buildout)*

	1982	1983	1984	1985	1986
Annual average					
Highest ($\mu g/m^3$)	~~1.44~~ ~~0.89~~ *1.11*	~~1.78~~ ~~0.73~~ *0.95*	~~1.76~~ ~~0.90~~ *1.12*	~~1.70~~ ~~0.91~~ *1.08*	~~1.63~~ ~~1.06~~ *1.20*
Location					
Distance (meters)	~~1,310~~ ~~3,000~~ *2,500*	~~2,000~~ ~~3,000~~ *2,000*	~~2,000~~ ~~3,000~~ *2,000*	~~2,000~~ ~~2,500~~ *2,000*	~~1,310~~ 2,000
Radial (°)	~~290~~ 260	~~140~~ ~~270~~ *140*	~~140~~ 260	~~120~~ ~~90~~ *100*	~~290~~ ~~90~~ *100*

*Annual average impacts were based on ISCLT2 results using STAR data (1982 through 1986).

Source: ECT, 1992 ~~3~~ *4*.

Table 7-13. Summary of PM Impacts Due to Polk Power Station Sources*

	1982	1983	1984	1985	1986
Annual average					
Highest ($\mu g/m^3$)	~~1.35~~ ~~1.06~~ *1.10*	~~1.23~~ ~~0.99~~ *1.01*	~~1.36~~ ~~1.09~~ *1.14*	~~1.20~~ ~~0.96~~ *1.01*	~~1.49~~ ~~1.13~~ 1.06
Location					
Distance (meters)	~~1,415~~ 1,600	1,600	1,600	1,600 ~~1,415~~ ~~1,600~~ *1,415*	
Radial (°)	~~280~~ 270	270	270	270	~~280~~ ~~270~~ *280*
24-Hour average					
Highest ($\mu g/m^3$)	~~28.6~~ ~~25.1~~ *15.6*	~~24.1~~ ~~21.8~~ *19.1*	~~29.4~~ ~~33.6~~ *19.0*	~~26.6~~ ~~23.3~~ *15.9*	~~27.5~~ ~~32.1~~ *15.5*
Location					
Distance (meters)	1,415	~~1,310~~ 1,600	2,000	~~1,415~~ *2,000*	~~1,415~~ ~~2,000~~ *1,995*
Radial (°)	280	~~290~~ 270	250	~~280~~ *250*	~~280~~ ~~250~~ *130*
Second highest ($\mu g/m^3$)	~~22.9~~ ~~17.7~~ *14.8*	~~22.7~~ ~~19.6~~ *14.7*	~~22.2~~ ~~22.4~~ *14.5*	~~22.7~~ ~~19.2~~ *13.4*	~~24.6~~ ~~23.6~~ *14.8*
Location					
Distance (meters)	~~1,415~~ ~~1,600~~ *1,415*	~~1,310~~ 1,600	2,000	2,000	~~1,415~~ *2,000*
Radial (°)	~~280~~ ~~270~~ *280*	~~290~~ 270	250	250	~~280~~ *250*

*Annual average impacts were based on ISCLT2 results using STAR data (1982 through 1986). Short-term average impacts were based on ISCST2 results for the individual years indicated.

Source: ECT, 1992 ~~3~~ *4*.

Table 7-14. Summary of CO Impacts Due to Polk Power Station Sources*

	1982	1983	1984	1985	1986
8-Hour average					
Highest ($\mu g/m^3$)	~~40.6~~ ~~26.9~~ *26.2*	~~40.4~~ ~~37.0~~ *30.7*	~~56.1~~ ~~40.8~~ *49.6*	~~67.1~~ ~~52.9~~ *43.9*	~~44.2~~ ~~34.8~~ *33.0*
Location					
Distance (meters)	~~1,750~~ ~~1,310~~ *1,995*	~~2,000~~ *1,415*	1,995	2,000	~~2,000~~ 1,995
Radial (°)	~~300~~ ~~290~~ *130*	~~120~~ *280*	130	120	~~140~~ 130
Second highest ($\mu g/m^3$)	~~35.0~~ ~~25.1~~ *22.3*	~~35.6~~ ~~28.5~~ *25.1*	~~44.2~~ ~~36.6~~ *38.8*	~~63.3~~ ~~50.4~~ *43.5*	~~39.3~~ ~~32.8~~ *29.1*
Location					
Distance (meters)	~~1,500~~ ~~1,295~~ *1,995*	~~1,310~~ 1,995	1,995	2,000	~~1,310~~ 1,995
Radial (°)	~~300~~ *130*	~~290~~ 130	130	120	~~290~~ 130
1-Hour average					
Highest ($\mu g/m^3$)	~~167.0~~ ~~134.9~~ *121.4*	~~149.7~~ ~~133.6~~ *113.5*	~~168.8~~ ~~136.9~~ *121.6*	~~169.2~~ ~~137.4~~ *123.2*	~~162.5~~ ~~125.5~~ *121.3*
Location					
Distance (meters)	~~2,000~~ *1,995*	~~1,675~~ ~~1,995~~ *2,000*	2,000	2,000	2,000
Radial (°)	~~120~~ *130*	~~160~~ ~~130~~ *140*	120	120	120
Second highest ($\mu g/m^3$)	~~148.0~~ ~~119.2~~ *120.5*	~~140.2~~ ~~133.0~~ *104.6*	~~165.6~~ ~~133.5~~ *120.5*	~~168.1~~ ~~136.1~~ *122.2*	~~147.8~~ ~~120.6~~ *100.3*
Location					
Distance (meters)	~~1,310~~ ~~2,000~~ *1,995*	~~2,000~~ ~~1,995~~ *2,000*	~~2,000~~ *1,995*	2,000	~~1,310~~ ~~2,000~~ *1,995*
Radial (°)	~~290~~ ~~120~~ *130*	~~110~~ 130	~~120~~ *130*	120	~~290~~ ~~120~~ *130*

*Short-term average impacts were based on ISCST2 results for the individual years indicated.

Source: ECT, 1992 ~~3~~ *4*.

Table 7-16. Summary of Lead Impacts Due to Polk Power Station Sources (Full Buildout)*

Year		Winter Quarter	Spring Quarter	Summer Quarter	Fall Quarter
1982	Seasonal average				
	Highest ($\mu g/m^3$)	0.0009 04	0.0010 07 *06*	0.0014 08	0.0012 11 *09*
	Location				
	Distance (meters)	1,415 2,000 *4,000*	1,415 2,000	2,000	2,000 *2,300*
	Radial (°)	280 250 *270*	280 250 *260*	120 90 *100*	250 240 *250*
1983	Seasonal average				
	Highest ($\mu g/m^3$)	0.0010 04 *05*	0.0018 07 *08*	0.0013 08 *07*	0.0010 09 *07*
	Location				
	Distance (meters)	2,000 1,560 *2,000*	2,000	1,415 2,000	1,600 2,000 *2,300*
	Radial (°)	140 180 *140*	140	280 250 *90*	270 240 *250*
1984	Seasonal average				
	Highest ($\mu g/m^3$)	0.0011 07 *05*	0.0013 06	0.0014 08 *07*	0.00 10 *08*
	Location				
	Distance (meters)	2,000	2,000	1,415 1,905 *2,000*	2,000 *2,300*
	Radial (°)	140 250 *140*	140 250 *110*	280 260 *100*	250 240 *250*
1985	Seasonal average				
	Highest ($\mu g/m^3$)	0.0010 05	0.0016 07 *08*	0.0011 09	0.0012 11 *09*
	Location				
	Distance (meters)	2,000	2,000 *2,075*	1,415 2,000	1,600 2,000 *2,500*
	Radial (°)	140 240 *140*	120 90 *100*	280 90	270 250 *260*
1986	Seasonal average				
	Highest ($\mu g/m^3$)	0.0011 05	0.0016 07	0.0014 11	0.0015 10 *07*
	Location				
	Distance (meters)	2,000	2,000	1,415 1,980	1,415 2,000
	Radial (°)	140 240 *140*	140 250 *100*	280 90	280 250 *260*

*Quarterly average impacts were based on ISCLT2 results using STAR data (1982 through 1986).

Source: ECT, 1992 3 *4*.

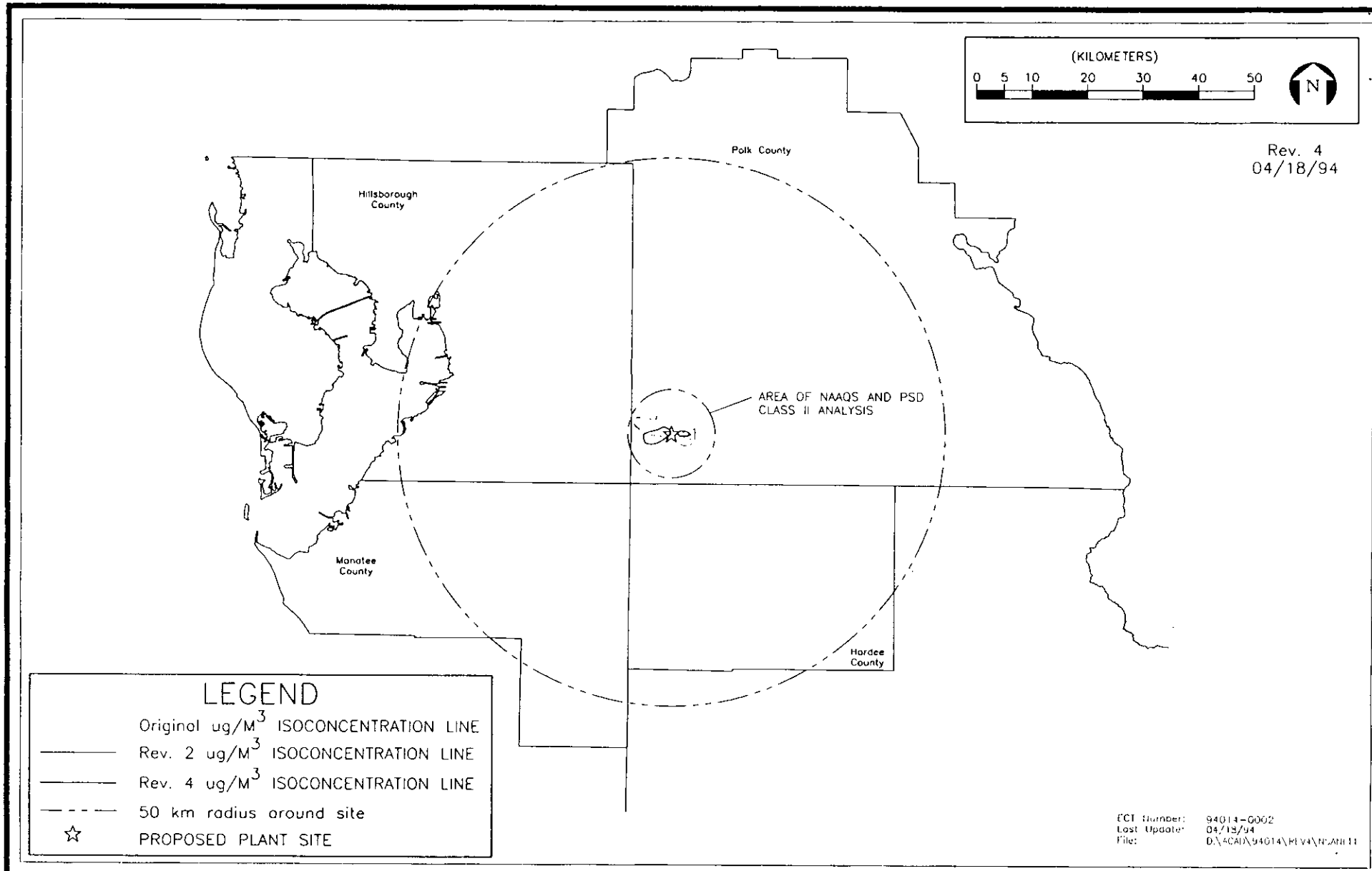

FIGURE 7-1.
ANNUAL SO2 SIA - COMPARISON

Source: ECT, 1994.

ECT
Environmental Consulting & Technology, Inc.

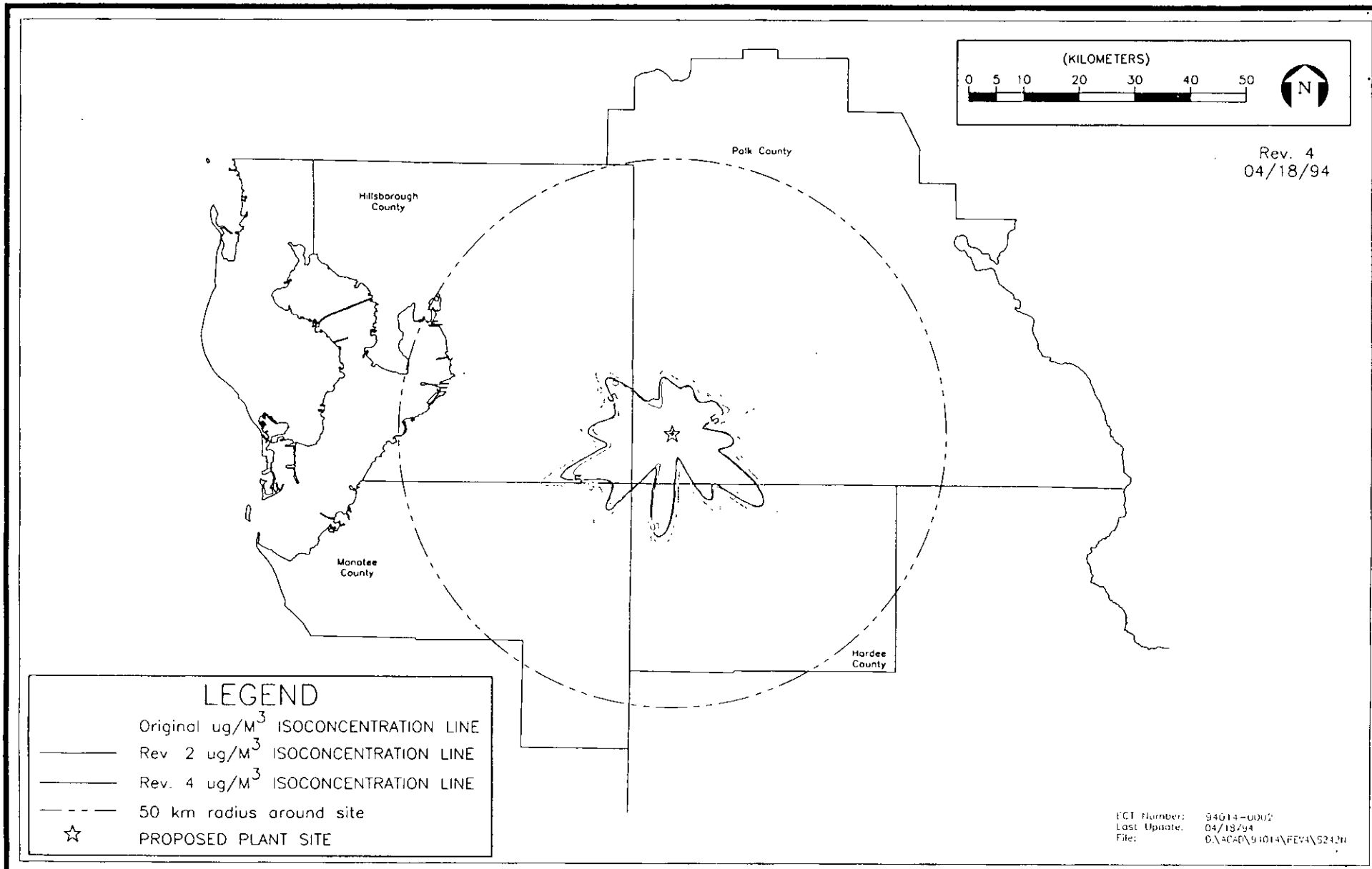

FIGURE 7-2.
24-HOUR SO2 SIA - COMPARISON

Source: ECT, 1994.

ECT
Environmental Consulting & Technology, Inc.

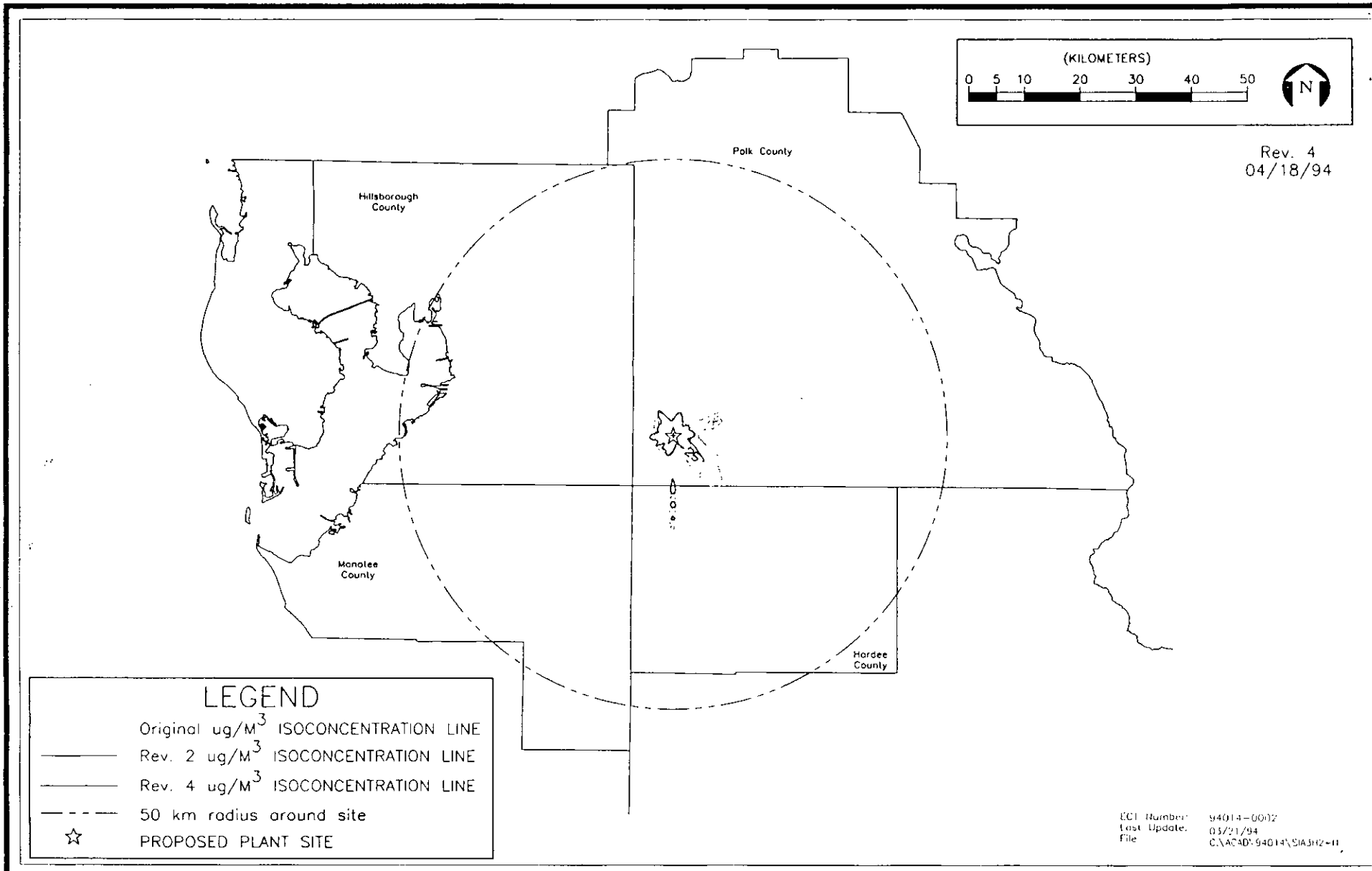

FIGURE 7-3.

3-HOUR SO2 SIA - ORIGINAL

Source: ECT, 1994.

ECT

Environmental Consulting & Technology, Inc.

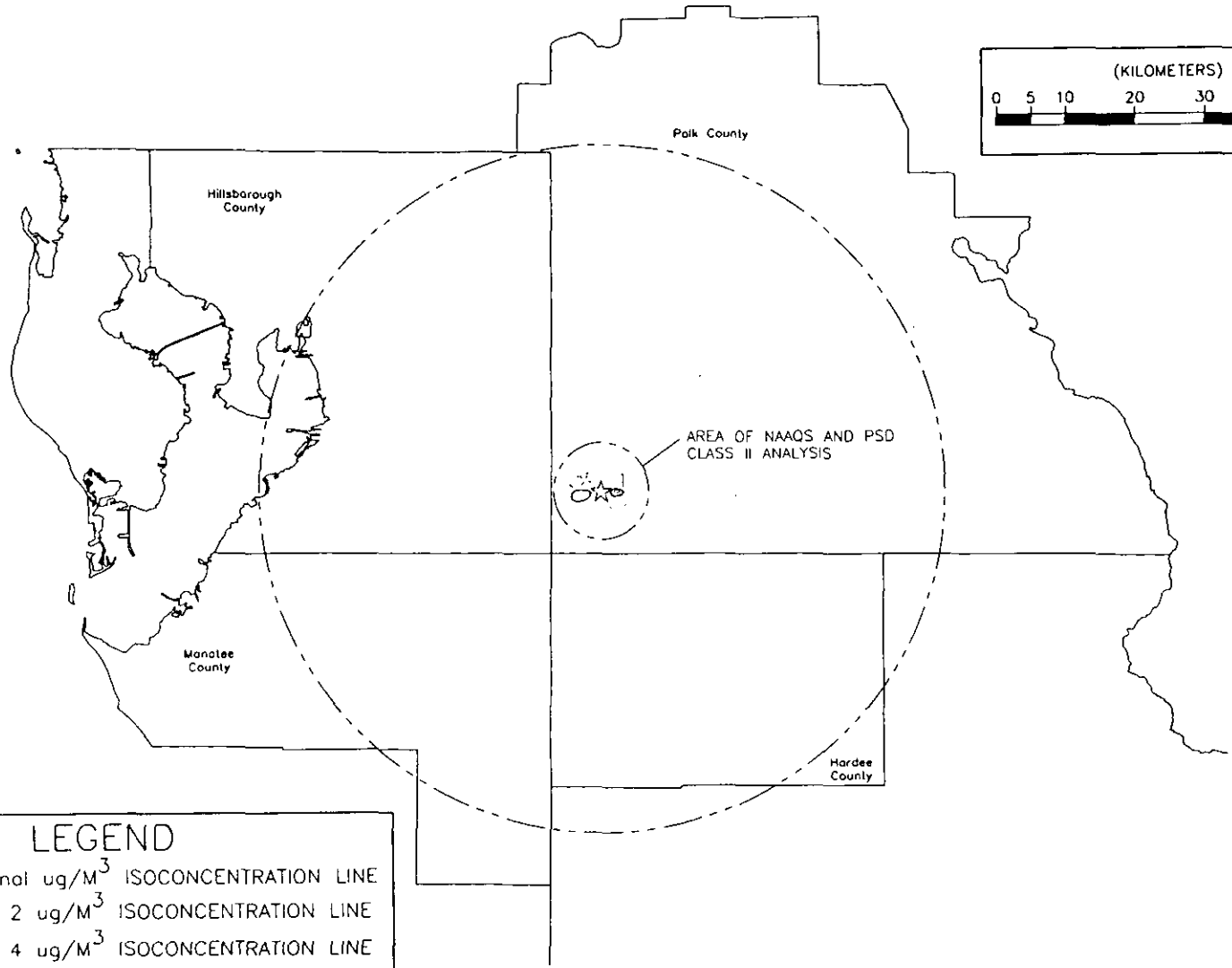

FIGURE 7-4.
ANNUAL NOX SIA - COMPARISON

Source: ECT, 1994.

ECT
Environmental Consulting & Technology, Inc.

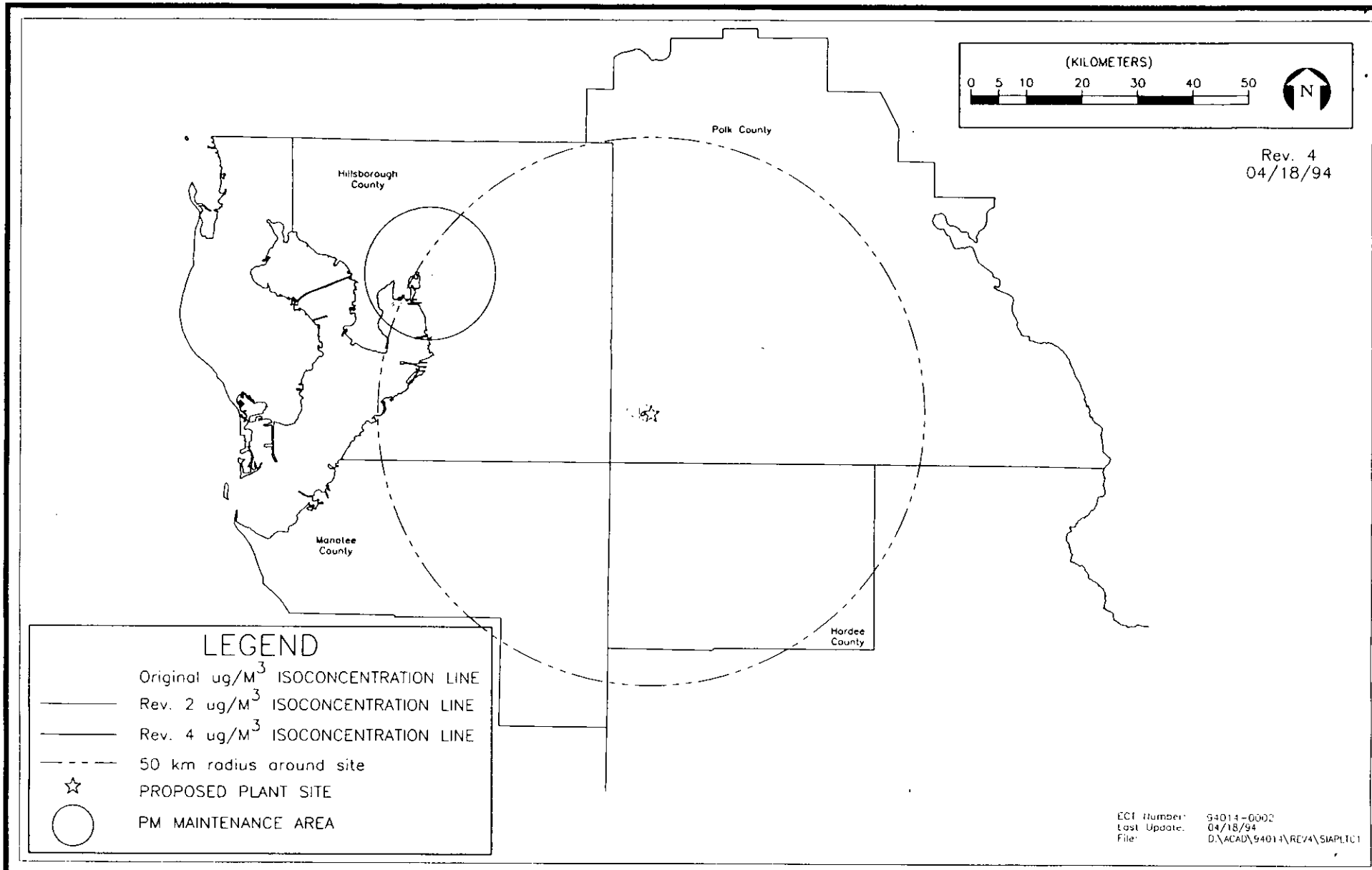

FIGURE 7-5.
ANNUAL PM SIA - COMPARISON

Source: ECT, 1994.

ECT
Environmental Consulting & Technology, Inc.

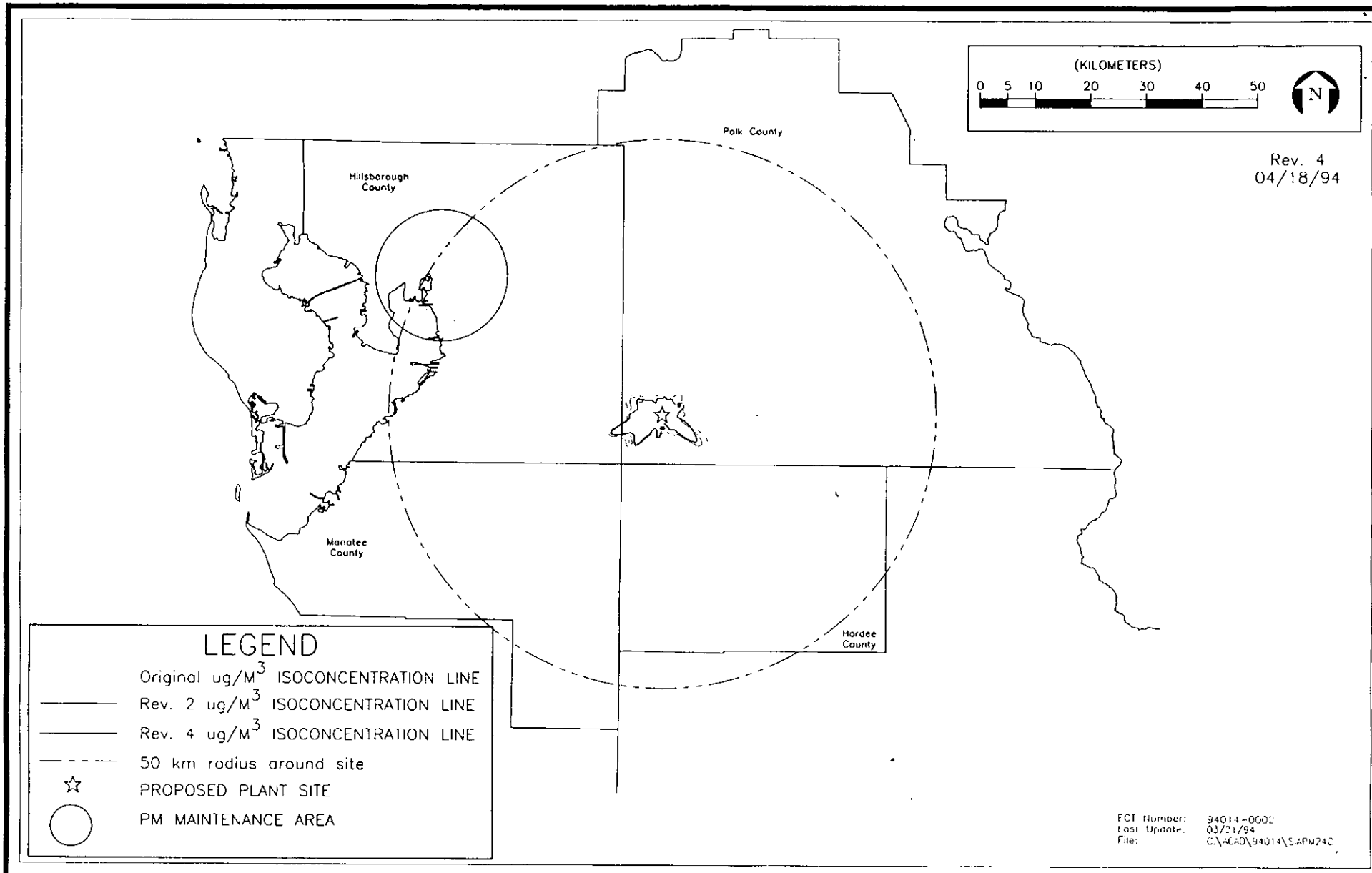

FIGURE 7-6.
24-HOUR PM SIA - COMPARISON

Source: ECT, 1994.

ECT
Environmental Consulting & Technology, Inc.

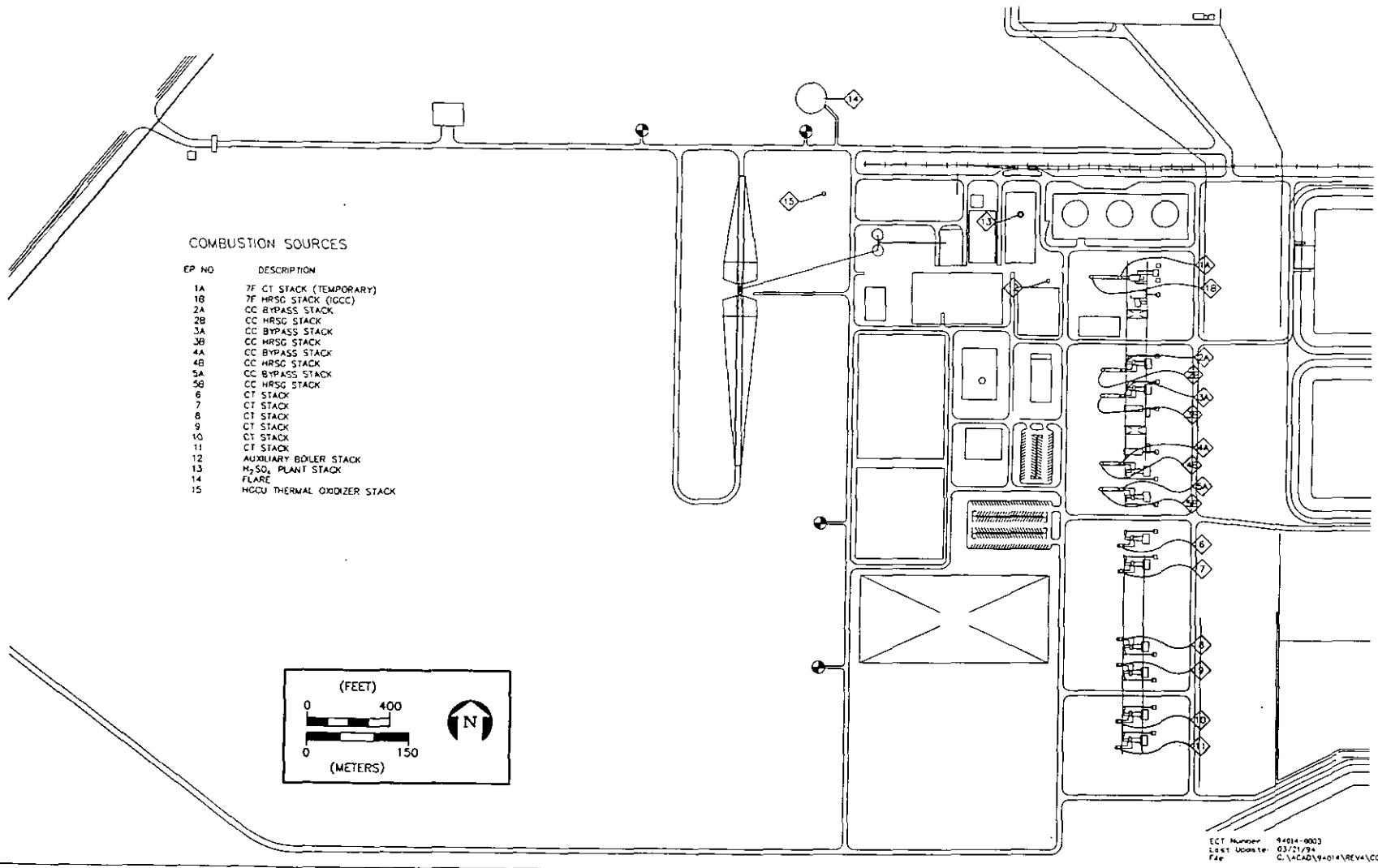

FIGURE 2-15.

LOCATION OF COMBUSTION SOURCES

Source: ECT, 1994.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

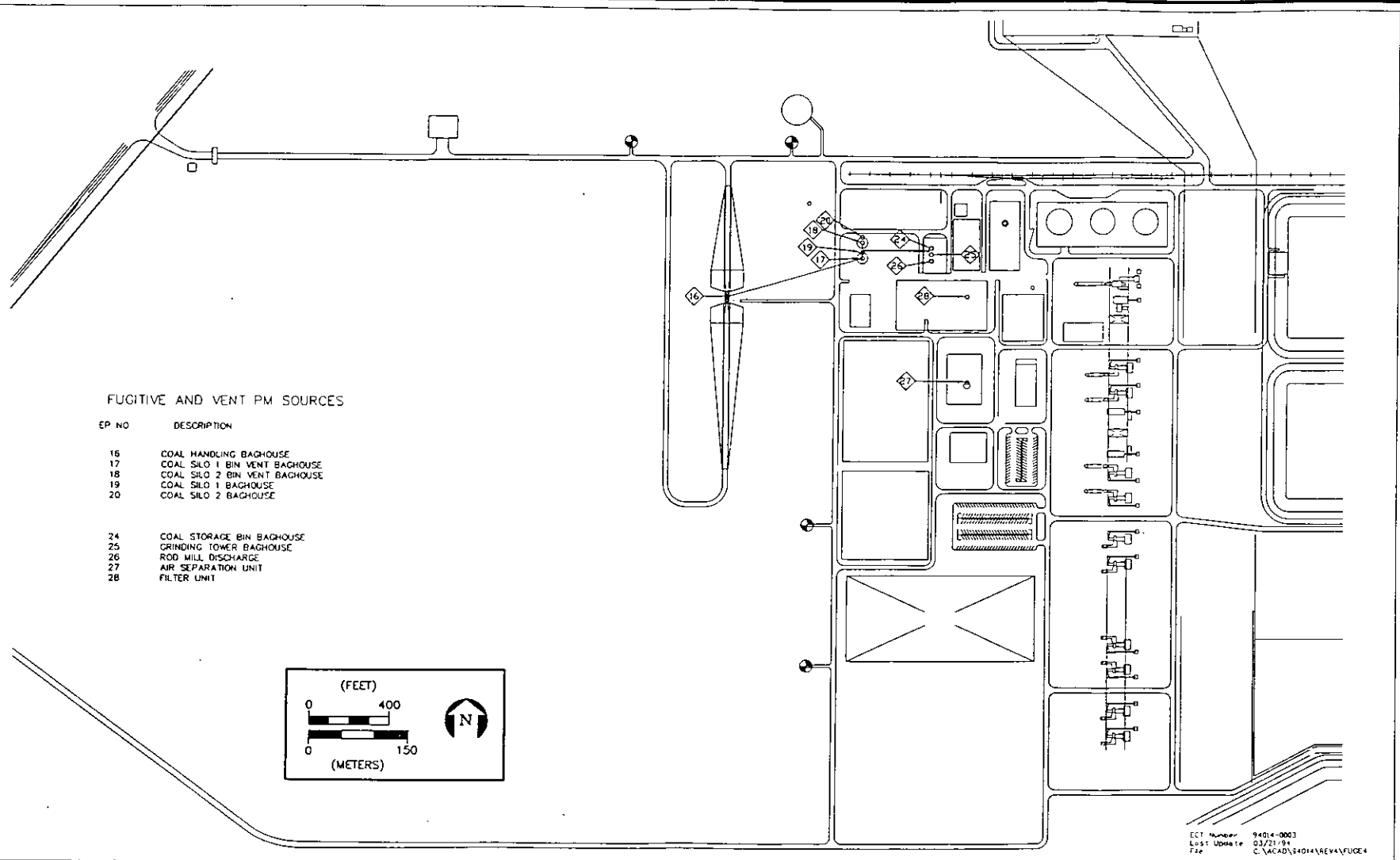

FIGURE 2-16.

LOCATION OF FUGITIVE AND VENT PARTICULATE MATTER SOURCES

Source: ECT, 1994.

TAMPA ELECTRIC
A TECO ENERGY COMPANY

POLK POWER STATION

Florida Department of
Environmental Protection

Memorandum

Patty
Copy for
all - Syed
will handle
Preston
3/26/94

TO: Power Plant Siting Review Committee

FROM: Buck Oven BSO

DATE: March 22, 1994

SUBJECT: Modification of TECO Polk Power Station
PA 92-32A

Today I met with TECO concerning a number of amendments to the site layout and plant design for their Polk Power Station. A number of these changes will require modifications to the Conditions of Certification. They will be filing their petition for modification within the next few weeks. I expect that they will meet with the Bureau of Air Regulation prior to submittal. I have asked them to file four copies of the modification request with Mike Hickey in Tampa.

Attached is a copy of summary sheets outlining TECO's proposed changes.

cc: S. Arif
C. Holladay
D. Outlaw

TAMPA ELECTRIC COMPANY POLK POWER STATION
POSTCERTIFICATION DESIGN REVISIONS

Design Revision	Reason for Revision	Effect of Revision
Site Layout Changes		
• Coal storage in silos instead of open piles.	Availability of coal delivery and storage facilities at TEC Big Bend Station.	Reduced PM emissions. Eliminates coal pile runoff/leachate wastewaters and treatment system/ sludge storage area. Reduced land area for facilities.
• Delete onsite rail loop and change truck coal delivery system. Maintain onsite rail spur for other deliveries	Coal delivery by truck from Big Bend Station more economical than rail at this time. Rail coal delivery still future option.	No change in effects since both truck and rail delivery addressed in SCA and EIS.
• Delete administration/visitor building, parking lot, and 0.2-acre stormwater detention basin.	Functions planned for building combined in general services building.	Slight change in onsite stormwater management plan due to deletion of 0.2-acre basin.
• Add 60 operational parking spaces near general services building.	Replace parking spaces previously associated with administration/visitor building.	No effect since no change in the total of 210 parking spaces for operations.
• Show propane unloading area on plot plan.	Need for propane discussed in SCA and EIS, but not shown on plot plan.	No effect since propane use included in SCA and EIS.
• Reduce size of southern construction laydown area to approximately 9 acres.	Larger area (20+ acres) not needed since construction parking moved to areas of future CC and CT units.	Reduced land area committed for facility activities.
• Delete mobile equipment maintenance shop.	Mobile equipment for coal pile no longer needed with coal storage in silos.	No effect.
• Delete brine storage area runoff basin.	Active brine storage cells under temporary enclosure, eliminating potentially contaminated runoff and need for runoff basin.	Eliminates potentially contaminated wastewater stream.
Air Quality Changes		
• Coal storage in silos instead of open piles.	Availability of coal delivery from Big Bend Station.	Significantly changes PM emission characteristics and reduces PM ambient impacts.

TAMPA ELECTRIC COMPANY POLK POWER STATION
POSTCERTIFICATION DESIGN REVISIONS
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Design Revision	Reason for Revision	Effect of Revision
• Revised structure dimensions: 7F HRSG enclosure, SGC wings 1 and 2, gasifier, cold box, coal grinding day bin, coal storage silos 1 and 2, oil tanks 1, 2, and 3, coal delivery enclosure (see revised Table 3.2.0-2).	Ongoing detailed engineering by Bechtel.	Revised GEP modeling shows small changes in downwash characteristics.
• Revised locations of IGCC HRSG, auxiliary boiler, and thermal oxidizer stacks (see revised Figure 3.2.0-5).	Ongoing detailed engineering by Bechtel.	See discussion for auxiliary boiler changes, below.
• Increased size (49.5 to 120 MMBtu/hr) normal operating hours (1,000 to 3,000 hr/yr) and standby operating hours (0 to 8,760 hr/yr) for auxiliary boiler.	Ongoing detailed engineering by Bechtel indicates previous boiler too small to meet IGCC unit needs.	Revised significant impact area (SIA) modeling shows slightly increased SO_2 and NO_x ambient impacts compared to SCA Rev. 2 analyses, but are less than original SCA impacts. Revised SIA modeling shows decreased PM and CO ambient impacts compared to SCA Rev. 2 and original SCA analyses. Revised SIA modeling shows SIAs for SO_2, NO_x, and PM_{10} are smaller than SIAs analyzed in original SCA. Revised detailed PSD Class I and II, AAQS, and air toxics modeling is not planned.
• Decrease use of HGCU system for treatment of syngas from approximately 50 percent of syngas flow to approximately 10 to 15 percent.	Ongoing design and pilot scale testing by GEESI.	No change in PSD permit emission limits for demonstration or postdemonstration periods.
• Provide separate stacks for sulfuric acid plant and thermal oxidizer and decrease size of thermal oxidizer for hot gas cleanup (HGCU) unit only.	Make sulfuric acid plant operation similar to standard design for other acid plants in central Florida and elsewhere.	Separate stacks and revised emissions rates included in revised SIA modeling discussed for auxiliary boiler changes above.

TAMPA ELECTRIC COMPANY POLK POWER STATION
POSTCERTIFICATION DESIGN REVISIONS
(Continued, Page 3 of 4)

Design Revision	Reason for Revision	Effect of Revision
• Changes in conditions of certification numbers XIII.E, XIII.G, XIII.I, XIII.L, and XIII.N.	Changes in size and hours of operation for auxiliary boiler, addition of coal storage silos, and elimination of coal storage piles.	E. Auxiliary boiler size increased. G. References to coal storage piles eliminated. I. Auxiliary boiler operating hours increased. L. Continuous NO_x and opacity monitoring required on auxiliary boiler emissions. N. 40 CFR Db added as applicable to auxiliary boiler.
Water Balance and Wastewater Treatment System Changes		
• Delete coal pile runoff treatment package and IWT sludge storage areas.	Treatment package not needed since coal pile deleted.	Eliminates coal pile treatment wastewater discharges to cooling reservoir, which should improve water quality in the reservoir. Also, eliminates potential effects of IWT sludge storage.
• Route runoff to sumps in coal unloading and silo storage areas to coal grinding.	Use of coal storage silos instead of coal pile.	Efficient reuse of water and eliminates need for wastewater treatment and discharge to cooling reservoir.
• Route small waste stream (less than 40 gpm) from sulfuric acid plant (approximately 5 percent H_2SO_4 concentration) to equalization basin.	Typical waste stream from sulfuric acid plants not discussed in SCA and EIS.	No adverse effect on water quality in cooling reservoir due to small volume of waste stream.
• Route wastewater filter backwash to equalization basin instead of coal pile retention basin.	Deletion of coal pile and associated retention basin.	No adverse effect on water quality in cooling reservoir.
Stormwater Management Changes		
• Delete 0.2-acre detention basin associated with administration/visitor building and parking lot.	Administration/visitor building and parking lot deleted.	Slight change in onsite stormwater management plan. No change in offsite peak flows.
• Route runoff from substation area to stormwater detention basin by gravity flow instead of cooling reservoir.	Ongoing detailed site planning and design by Bechtel to eliminate need for pumping runoff water to reservoir.	Slight change in design of outfall from stormwater detention basin to provide for additional runoff volume and not change offsite peak flows.

TAMPA ELECTRIC COMPANY POLK POWER STATION
POSTCERTIFICATION DESIGN REVISIONS
(Continued, Page 4 of 4)

Design Revision	Reason for Revision	Effect of Revision
• Changes in onsite subarea drainage basin sizes used for HEC-1 modeling for SCA and Conceptual Reclamation Plan (CRP).	Due to changes in site layout and substation runoff and 0.2-acre detention basin changes.	Revised TR-55 modeling basin on current detailed plans results in similar peak flow discharges to Little Payne Creek as HEC-1 results in SCA and CRP. Revised HEC-1 modeling is not planned.
Cooling Reservoir Discharge Pipe		
• Increase diameter of discharge pipe from 10 to 18 inches and add flow control valve.	Ongoing detailed engineering and longer discharge pipe.	No change in discharge volumes from cooling reservoir.
Construction Manpower		
• Increase peak construction manpower for Phase I from 600 to approximately 1,400 workers. Increase construction manpower for future units.	Ongoing construction planning by Bechtel to respond to compressed construction timeframe.	Revised transportation impact analysis shows levels of service (LOS) on roads and intersections will not decrease to unacceptable levels. Manpower increases already included in EIS.
Slag Storage Area		
• Change initial storage cell from 1 to 2.5 years storage capacity.	More economical development plan.	No effects since the total size of slag storage area unchanged.
Fire Protection Water		
• Increase system from 3,000 to 6,000 gpm and change primary source of system water from service water tank to cooling reservoir. Well water for initial fill.	Ongoing detailed design by Bechtel. Cooling reservoir more reliable source	No effects since cooling reservoir identified as supplemental source in SCA and EIS.

Source: ECT, 1994.

Power Plant Siting Review Committee:

Mike Hickey	Tampa	
Clair Fancy	Magnolia	MS 5505
Al Rushanan	Twin Towers	MS 3500
Trudie Bell	Twin Towers	MS 2505
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