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August 16, 2000

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

Via Fax and U.S. Mail

Re: Tampa Electric Company (TEC) - F.J. Gannon Station
Units 5 and 6 Stack Height Increase Construction Permit Application
FDEP File No. 0570040-009-AC

Dear Mr. Fancy:

Tampa Electric Company requests to withdraw the above referenced permit application. Thank you for your assistance in this matter.

If you have any questions, please contact Shannon Todd or me at (813) 641-5125.

Sincerely,

Patrick L. Shell
Administrator - Air Programs
Environmental Affairs

EP\gm\SKT188

c: Mr. Al Linero - FDEP
Mr. Cleve Holladay - FDEP
Mr. Jerry Kissel - FDEP SW
Ms. Alice Harman - EPCHC

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

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4APT-APB

DEC 2 1 1999

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

Dear Mr. Holladay:

This letter responds to the November 8, 1999, letter from Jamie Hunter of the Tampa Electric Company to Clair Fancy of the Florida Department of Environmental Protection. The November 8 letter responded to Region 4's comments on the fluid modeling protocol used to support increasing to110 meters the stack heights for the Frances J. Gannon Generating Station's Units 5 and 6 smokestacks. These new stack heights will be less than the formula Good Engineering Practice (GEP) stack height of 133 meters.

The letter appears to satisfactorily address Region 4's fluid modeling protocol concerns. However, it remains to be demonstrated that the sub-GEP stack heights of 110 meters and whatever emission limits that Units 5 and 6 are subject to will show compliance with the sulfur dioxide (SO2) National Ambient Air Quality Standards (NAAQS) under any downwash conditions that may exist. Specifically, air dispersion modeling, conforming to modeling guidance, should demonstrate that for the 100% operating load conditions (and other applicable load conditions) and including background ambient concentrations and nearby sources, do not adversely impact the SO2 NAAQS for the three averaging periods.

If questions arise, please do not hesitate to contact Brenda Johnson of the EPA Region 4 staff at (404) 562-9037.

Sincerely,

Linda Anderson-Carnahan
Chief
Air Planning Branch

cc: SWD
Hillsboro Co.
G. Nelson, TECO

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AUG 27 1999
BUREAU OF AIR REGULATION

August 20, 1999

Mr. Cleve Holladay
Florida Department of Environmental Protection
111 S. Magnolia Ave., Suite 4
Tallahassee, Florida 32301

Via FedEx
Airbill No. 8132 1667 7530

Mrs. Linda Anderson-Carnahan
Chief-Air Planning Branch
United States Environmental Protection Agency
Region 4
Atlanta Federal Center
51 Forsyth Street
Atlanta, Georgia 30303-3960

Via FedEx
Airbill No. 8132 1667 7585

813-641-5081

Re: Tampa Electric Company (TEC) - F.J. Gannon Station
Units 5 and 6 Stack Height Increase Construction Permit Application
FDEP File No. 0570040-009-AC

Dear Mr. Holladay and Mrs. Anderson-Carnahan:

Please find enclosed the Wind Tunnel Study Protocol associated with the above referenced permit application. Recall that this study is required by EPA in support of Title V permitting at F.J. Gannon Station to ensure that increasing the stack heights on Units 5 and 6 will allow the station to comply with the sulfur dioxide National Ambient Air Quality Standard.

Please let me know if you have any questions. You can contact me at (813) 641-5033.

Sincerely,

James Hunter
Administrator - Air Programs
Environmental Planning

EP\gm\SKT110

Enclosure

c: Mr. Al Linero - FDEP
Mr. Jerry Kissel - FDEP SW
Mr. Rick Kirby - EPCHC

TAMPA ELECTRIC COMPANY
P. O. BOX 111 TAMPA, FL 33601-0111
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OUTSIDE HILLSBOROUGH COUNTY 1 (888) 223-0800

Florida Department of
Environmental Protection

Memorandum

7/28/93

TO: Bruce Mitchell
Bill Thomas

FROM: Buck Oven BO

DATE: July 19, 1993

SUBJECT: TECO Big Bend Coal Yard Modification

Attached please find a copy of TECO's responses to Bruce Mitchell's comments from last October. Please review and comment to me by 8/18/93.

cc: Clair Fancy
Richard Donelan
Gary Smallridge

TAMPA ELECTRIC
A TECO ENERGY COMPANY

June 28, 1993

Mr. Hamilton S. Oven
Administrator
Siting Coordination Office
Florida Department of Environmental Protection
Mail Station 45
Tallahassee, Florida 32399-3000

Re: Tampa Electric Company
Big Bend Station
Site Certification PA 79-12 Modification

Dear Mr. Oven:

Attached are one original, with original signatures and certification, and three (3) copies of the Big Bend Station Coal Yard Modification Addendum and Responses to Information Requests. This information is submitted pursuant to the Department's requests, dated October 7th and November 4, 1992, for additional information pertaining to the modification of the Big Bend coal yard and the replacement of the north coal yard reclaimed equipment. TEC is providing responses to the concerns raised on the coal yard modification, however, TEC is still evaluating options and alternatives for long-term reliability for the coal yard reclaimer equipment. At this time, TEC requests that the Department proceed with the review of the coal yard modification, only. TEC will provide the additional information on the reclaimer equipment at a later date.

If you need any additional information, please contact me or Karen Zwolak at (813) 228-4836.

Sincerely,

Lynn F. Robinson for

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

SS545

Attachment

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JUN 30 1993
D. E. R.
SITING COORDINATION

Permit File Scanning Request from Clive Holladay

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Facility ID	Project#/PATS#	Type	PSD #	Submittal Date	Batch #
0570040	009	AC			

☒ File Approved For Disposal ☐ Correspondence ☐ Intent ☐ Permit ☐ Draft (Title V)

☐ Return File to BAR ☐ Amendment ☐ Application ☐ OGC ☐ Proposed (Title V)

Document Date Nov 9, 1999

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

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November 8, 1999

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

Via FedEx
Airbill No.7918 0713 9757

Re: Tampa Electric Company - F.J. Gannon Station
Units 5&6 Stack Height Increase Construction Permit Application
DEP File No. 0570040-009-AC
Response to Comments on the Proposed Wind Tunnel Study Protocol

Dear Mr. Fancy,

The following is a review and explanation of Tampa Electric Company's (TEC) understanding of the Gannon 5 & 6 Stack Height Increase permitting issues. In addition, specific responses to EPA's comments on the fluid modeling protocol are addressed.

Background

As part of the Title V permitting process sulfur dioxide (SO_2) emissions from Gannon Station were modeled using existing conditions (stack height and emission rate) to determine current possible impact on ambient air quality standards (AAQS). The results of the air dispersion modeling predicted exceedances of the AAQS in the immediate vicinity of the Gannon Station under extreme meteorological conditions. Because the actual current stack height is less than the "Good Engineering Practice" (GEP) formula stack height of 133 meters (based on the 40 CFR 51.100 (ii)(2)(ii) formula height equation), TEC proposed to resolve this problem through an increase in the stack height of Gannon Units 5 & 6 to 110 meters accompanied by a corresponding reduction in the emission rate.

In reasonable permitting prudence, the FDEP requested evidence that the purpose of the stack extension was to reduce downwash effects and was therefore a credible dispersion technique. TEC provided substantial evidence through computer modeling that the SO_2 concentrations in vicinity of the source were due to cavity or wake effects (downwash) due to the Gannon boiler structures. The FDEP and EPA deemed this evidence insufficient and fluid modeling was requested.

TAMPA ELECTRIC COMPANY
P. O. BOX 111 TAMPA, FL 33601-0111

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TEC agreed to undertake a fluid modeling demonstration, at substantial cost, to confirm that the exceedances of the ambient air quality standard shown in the air dispersion modeling referenced above were, in fact, due to downwash effects. To this end, TEC contracted with Dr. Neff at Colorado State University to conduct the necessary fluid modeling demonstration. The intent of the modeling demonstration is to establish that under the existing stack height conditions, that excessive concentrations occur due to downwash effects. A "Study Protocol" dated August 1999, was submitted to the FDEP and is the source of the comments addressed below.

TEC understands that the fluid modeling is being required to provide evidence of the presence of downwash or cavity effects on the ground level concentrations of pollutants. This evidence would provide the permitting agency assurance that TEC is not raising the stack to simply disperse the pollutants but to correct a localized effect of downwash and/or cavity effects. The presence of downwash and/or cavity effects would be evident in the fluid model by the presence of a greater than 40% increase in ground level concentrations due the presence of building structures as compared to the instance without building structures. A positive demonstration of the greater than 40% concentration test from the fluid modeling, along with the exceedance of the ambient air quality standard shown in the air dispersion modeling, provide the necessary confirmation required in the applicable stack height regulations to show that TEC is justified in raising the stacks to a new height, up to and including, the GEP formula height.

Response to Comments

1. **There are two stacks for the boiler units five and six, each stack being 96 meters tall. The purpose of this fluid modeling exercise is to determine the most restrictive stack height, using the existing emission rates and background air quality such that both "excessive concentration" criteria are met. When determining a good engineering practice (GEP) stack height greater than the formula height, the New Source Performance Standard (NSPS) emission rate for that source (i.e., 1.2 lb. SO2/MMBTU) must be used in the wind tunnel demonstration. The excessive concentration is defined as a maximum ground-level concentration due to emissions from a stack due in whole or in part to downwash produced by nearby structures or nearby terrain features which individually is a least 40 percent in excess of the maximum concentration experienced in the absence of such downwash, wakes and eddy effects and which contributes to a total concentration due to emissions or an exceedance of a National Ambient Air Quality Standard (NAAQS) or available Prevention of Significant (PSD) increment. The request is to raise the stack eight to 110 meters.. However, it is our understanding that excessive concentrations continue to occur at 110 meters. If this was true, then some greater stack height would be needed for the new GEP height. The new GEP height must be the lowest height at which the 40% criterion is met in order to get credit for the new stack height in air quality dispersion modeling (see item 3 below for more discussion). The purpose of the fluid modeling should be to determine the new GEP height for units five and six based on the nearby structures. Otherwise, the current stack height (i.e., 96 meters) must be used in any modeling to set emission limitations.**

TEC Response

There are several issues in the above comment that need to be addressed. First, the purpose of this fluid modeling exercise is not to determine the most restrictive stack height such that both "excessive concentration" criteria are met. This reference would only apply in the case of requesting to raise the stacks to a height greater than the formula height. Since this is not the case here, the purpose of this fluid modeling exercise is to seek justification for raising the existing stacks for Units 5 & 6 above their current height to some new height, up to and including the formula height. The need to conduct fluid modeling is discusses on page 49 of the *Guideline for Determination of Good Engineering Practice Stack Height (Technical Support Document for the Stack Height Regulations) Revised* (EPA-450/4-80-023R), which states the following:

> "Sources with stack height greater than 65 meters but less than the GEP height given by Equation 1, and wishing to raise the stack to that height given by Equation 1, must provide evidence that additional height is necessary to avoid downwash-related concentrations raising health and welfare concerns. This can be accomplished by either one of two methods: (1) demonstrate by fluid modeling or a comparable field study, using the existing stack and emission rate (before the stack is raised) and adding in the background air quality, that both "excessive concentration" criteria are met; or (2)..."

Therefore, the goal of the fluid modeling exercise in this case is only to support the demonstration that, at the existing stack height and emission rate, both "excessive concentration" criteria are met. Both "excessive concentration" criteria are defined in 40 CFR 51.1(kk) as

> "a maximum ground-level concentration due to emissions from a stack due in whole or part to downwash, wakes or eddy effects produced by nearby structures or nearby terrain features which individually is at least 40 percent in excess of the maximum concentration experienced in the absence of such downwash, wakes, or eddy effects and which contributes to a total concentration due to emissions from all sources that is greater than an ambient air quality standard."

As noted on page 51 of the above referenced document,

> "If a successful demonstration is made, the stack height can be increased up to Equation 1 height and the emission limitations established at this new height."

This process is further outlined in Section F of Table 3.1 of the referenced document. Subpart 2c of Section F states that after a successful fluid modeling demonstration that the applicant "may increase physical stack up to " the Equation 1 height. Note that words such as "can", "may" and "up to" clearly indicate that it is the applicants option to raise the existing stack up to and including the Equation 1 height, but it does not require the applicant to go *only* to the full Equation 1 height. (It is clear that if the applicant was requesting to go above the Equation 1 height that further demonstrations would be necessary, but this is not the case here.) Once the applicant has selected a new stack height in this range (between existing and formula height), the

provisions discussed in Chapter 4 of the above referenced document should be used to establish the proper emission limit at the new stack height to ensure protection of the ambient air quality standards.

Second, the statement: "When determining a good engineering practice (GEP) stack height greater than the formula height, the New Source Performance Standard (NSPS) emission rate for that source (i.e. 1.2 lb. SO2/MMBTU) must be used in the wind tunnel demonstration." does not apply to this study, since TEC is not attempting to determine a GEP stack height greater than the formula height. Rather, TEC is proposing to raise the stacks to 110 meters to avoid downwash related exceedances of the ambient air quality standards.

Third, the discussion regarding the definition of excessive concentration in EPA's comment above seems to be incomplete and unclear as stated. Please refer to the definition noted earlier in this response.

Fourth, the remaining discussion presented in EPA's comment above is incorrect for the reasons already addressed in this response. Since it is clearly TEC's intent to only raise the stacks to a height within the formula height, then the only demonstration required is that both excessive concentration criteria *at the existing conditions* be met.

2. **It is Region 4's understanding that the Tampa Electric Company (TECO) wants to determine if a stack height of 110 m is the new GEP height to use in air quality dispersion modeling. The last sentence at the bottom of page 1, states that the stack heights for the units five and six stacks as determined by *40 Code of Federal Regulations* (CFR) 51.100(ii)92)(ii) are 110 meters. Past correspondence from the Tampa Electric Company (TECO) indicates that the GEP formula height is 133 m. The correct GEP formula height must be stated in the protocol.**

TEC Response

TEC will change the GEP formula stack height in the protocol to 133 meters. However, TEC does not intend to determine if a stack height of 110 m is the new GEP height to use in air quality dispersion modeling, as Region 4 understands. In fact, rule 62-210.550 states that:

> *(3) "Good engineering practice" (GEP) stack height means the greater of:*
>
> *1. 65 meters, measured from the ground-level elevation at the base of the stack'*
> *2. The stack height as determined below:*
> *a. For stacks in existence on January 12, 1979, and for which the owner or operator had obtained all applicable permits or approvals required under 40 CFR Parts 51 and 52, Hg = 2.5H, provided the owner or operator produces evidence that this equation was actually relied on in establishing an emission limitation;*

b. For all other stacks, Hg = H + 1.5L , where
Hg = good engineering practice stack height, measured from the ground-level elevation at the base of the stack,
H = height of nearby structure(s) measured from the ground-level elevation at the base of the stack,
L = lesser dimension, height or projected width, of nearby structure(s) provided that the EPA, Department, or local air program may require the use of a field study or fluid model to verify GEP stack height for the emissions unit; or

3. *The height demonstrated by a fluid model or a field study approved by the EPA, Department, or local air program which ensures that the emissions from a stack do not result in excessive concentrations of any air pollutant as a result of atmospheric downwash, wakes, or eddy effects created by the emissions unit itself, nearby structures, or nearby terrain features. If this height exceeds the height allowed by Rule 62-210.550(3)(a)1. or 2., FAC, the Department shall notify the public of the availability of the demonstration study and provide an opportunity for a public hearing on it.*

Since 133 meters is the formula height and GEP stack height is the greatest of the three options above, 110 meters cannot, by definition, be the GEP stack height. Therefore, TEC intends only to determine if credit for this new stack height of 110 m is justifiable to use in air quality dispersion modeling.

3. **In contrast to the statement in the second paragraph of the Background section, Region 4 requested a fluid modeling demonstration to justify raising the TECO stack above 96 m such that credit for this new stack height could be used in air dispersion modeling, and not to support the GEP formula height. Any new height that a stack is raised above the 65 m *de minimis* height which complies with the stack height regulations would be the new GEP height, and may not necessarily be the formula height. This new height would be demonstrated through fluid modeling (see *Raising stacks Below Formula Height to Formula Height* in 50 *Federal Register (FR) 27899*, July 8, 1985). A company may increase a stack or build a stack to any height. The stack height regulation requires Environmental Protection Agency (EPA) to ensure that the degree of emission limitation required for control of any air pollutant under an applicable State implementation plan (SIP) is not affected by that portion of any stack height which exceeds GEP or any other dispersion technique (see 50 *FR 27892*). That is, EPA regulates the stack height credits rather than the actual stack height. Air quality dispersion modeling for regulatory purposes requires that the GEP stack height be used as input to the model assessment (see item 20 and 21 in the October 10, 1985, enclosed memo, *Questions and Answers on Implementing the Revised Stack Height on Prevention of Significant Deterioration (PSD) Modeling and Monitoring*). The GEP stack height is defined as "the height necessary to insure that emissions from the stack do not result in excessive concentrations of any air pollutant in the immediate vicinity of the source as a**

result of atmospheric downwash, eddies or wakes which may be created by structures or nearby terrain obstacles" (see section 123(c) of the Clean Air Act).

TEC Response

TEC agrees with the first statement made above and will correct the Background section to clarify this issue. With regard to the remainder of the above comment, TEC provides the following response.

By definition, the statement "Any new height that a stack is raised above the 65 m de minimis height which complies with the stack height regulations would be the new GEP height" applies *only* to those stacks which exceed the GEP formula height. In addition, *FR 27899* states that:

> *"Raising a stack below formula height to formula height is not, in EPA's judgment, subject to the same statutory reservations as building stacks greater than formula height. However, as the court has cautioned, it may still be necessary for these sources to show that raising stacks is necessary to avoid "excessive concentrations" that raise health or welfare concerns.*
>
> *For these reasons, sources wishing to raise stacks subsequent to October 11, 1983, the date of the D.C. Circuit opinion, must provide evidence that additional height is necessary to avoid downwash-related concentrations raising health and welfare concerns. These rules allow sources to do this in two ways.*
>
> *The first way is to rebut the presumption that the short stack was built high enough to avoid downwash problems; i.e., to show, by site-specific information such as monitoring data or citizen complaints, that the short stack had in fact caused a local nuisance and must be raised for this reason. The EPA believes that both the historical experience of the industry and the data on short-term peaks discussed earlier show that short stacks can cause local nuisances due to downwash. However, where a source has built a short stack rather than one at formula height, it has created a presumption that this is not the case. General data on short-term peaks may not be strong enough to support, by themselves and in the abstract, a conclusion that the stack must be raised to avoid local adverse effects. Instead, that proposition must be demonstrated for each particular source involved.*
>
> *In the event that a source cannot make such a showing, the second way to justify raising a stack is to demonstrate by fluid*

> *modeling or field study an increase in concentrations due to downwash that is at least 40-percent in excess of concentrations in the absence of such downwash and in excess of the applicable NAAQS or PSD increments. In making this demonstration, the emission rate in existence before the stack is raised must be used." (50 FR 27899, EPA's response to comments on Raising Stacks Below Formula Height to Formula Height)*

Careful examination of this passage reveals that when raising a stack to some height below formula height, a company need only prove that it is raising the stack to avoid excessive concentrations due to downwash using the existing stack height and emission rate. Completing a fluid modeling study for the purpose of defining GEP is irrelevant in this case, since GEP cannot be any height below 133 meters. Tampa Electric will submit the required evidence of downwash effects as outlined in the referenced Federal Register passage above.

In addition, EPA's above statement "Air quality dispersion modeling for regulatory purposes requires that the GEP stack height be used as input to the model assessment (see item 20 and 21 in the October 10, 1985, enclosed memo, *Questions and Answers on Implementing the Revised Stack Height on Prevention of Significant Deterioration (PSD) Modeling and Monitoring*)" is incorrect and incomplete. The references given state that "GEP stack height should (*emphasis added*) be used as input to the model assessment. If a source is operating with a less than GEP stack height, then the actual stack height should be input to the model." The latter is clearly the case here. TEC is clearly aware that in order to receive credit for the 110m height to be used as the input for the regulatory modeling that the stack must be physically raised to this level. TEC also understands that the appropriate emission level at the new stack height must be determined through the procedures described Section 4 of the *Guideline for Determination of Good Engineering Practice Stack Height (Technical Support Document for the Stack Height Regulations) Revised* (EPA-450/4-80-023R) in order to insure protection of the ambient air quality standards.

4. **The size of all building structures and the general topography in the vicinity of the source should be examined to determine the structures to include in the modeling. The criteria in the protocol does not appear to meet the guidance for including or excluding tall structures when defining the modeling area.**

TEC Response

The first item on page 3 of the testing protocol states that "All structures and terrain features with heights greater than 1/20th the distance to the plant stack should be included in the geometrically scaled model. This is in accordance of Section 4.1.1 of Guideline for Use of Fluid Modeling to Determine Good Engineering Practice Stack Height. With respect to tall, slender structures, page 23 of the Guideline states that "For tall obstructions (height greater than width), the width replaces the height scale in the above determination of the critical distances." In stating that "The less stringent requirement of width being 1/20th the distance should be used for tall slender

structures," the protocol makes the exact same assertion; it is simply worded differently than the text in the Guideline.

5. **A site roughness of length of 0.2 meters is proposed. Using table 1 in the Guideline for Use of Fluid Modeling to Determine Good Engineering Practice Stack Height document, a 0.2 meters surface roughness length corresponds to surfaces located in the outskirts of towns and suburbs. However, approximately one-fourth of the topography within 3 kilometers of the sources is water (i.e. bays in the area). Also, the land south of Hookers Point appears to be undeveloped. An explanation should be provided as to why these surfaces would not require a modification of the surface length chosen. A discussion of the topography around the stacks would help in justifying the surface roughness choice.**

TEC Response

Figure 2 of the study protocol identifies the model configuration and primary wind direction used in the study. Based on this primary wind direction and surrounding terrain features, a surface roughness length of 0.2 meters was chosen. Three kilometers prior to passing over Gannon Station, wind passes over an urban development, Hookers Point, and a short stretch of water. After passing over Gannon Station, the wind proceeds to pass over a fertilizer plant before moving on to a small residential town. Therefore, the experimenter felt that a surface roughness length of 0.2 meters best represented this topography.

6. **Depending on the choice of the surface roughness length, the site power law index could change. It is unclear how the power law index or exponent was developed.**

TEC Response

Please refer to the above chosen surface roughness length and Figure 1 on page 26 of Guideline for Use of Fluid Modeling to Determine Good Engineering Practice Stack Height (EPA-450/4-81-003, July, 1981).

7. **A 100% operating load condition for the stacks must be used in the fluid modeling, unless a compelling argument otherwise is made. Other operating loads could be modeled in a sensitivity simulation, if they are frequently used. There is no clear demonstration to support the use of the 50% load that was proposed in lieu of the 100% load. Fluid modeling parameters associated with the operating load conditions will need to be revised per the 100% load conditions. Please see item 12 in the October 10, 1985, memo enclosed entitled, *Questions and Answers on Implementing the Revised Stack Height Regulation* for a reference on this issue.**

TEC Response

TEC feels that a 50% load is justified based on a similar fluid modeling study performed by William H. Snyder and Robert E. Lawson, Jr. titled Fluid Modeling Demonstration of Good-

Engineering-Practice Stack Height in Complex Terrain. (EPA/600/3-85/022, April, 1985) Specifically, page iv states that "...a stack height of 326 m meets that current GEP criteria under 50% plant-load conditions, i.e., the nearby upwind terrain effected an increase of 40% in the maximum ground-level concentration."

8. **The excessive concentration criterion must be determined for all applicable averaging periods for the affected pollutant.**

TEC Response

Modeled ambient air quality exceedances are only seen for the 24-hour averaging period. As such, excessive concentration criteria will be presented for this averaging period.

9. **Background sources must be accounted for by adding their air pollutant contribution to that of the source in question for assessing the GEP height. The air pollutant concentration that would be used for the applicable averaging periods should be addressed in the protocol. Please refer to page 49 of the *Guideline for Determination of Good Engineering Practice Stack Height (Technical Support Document for the Stack Height Regulations) Revised* (EPA-450/4/80/023R) for this discussion.**

TEC Response

Since the goal of this fluid modeling exercise is only to determine if there is an excessive (greater than 40%) concentration due to downwash effects, it is not necessary to consider background air quality. The air dispersion modeling performed already indicates an exceedance of the ambient air quality standards (at the existing conditions) without the addition of background air quality. Inclusion of background air quality in that modeling will only exacerbate the predicted exceedance, and therefore, is not necessary to demonstration that there are excessive concentrations at the existing conditions.

10. **The protocol states that four unidentified wind directions will be selected for determining the excessive concentration(s). It is unclear how these wind directions will be determined. The directions used in the fluid modeling should be those directions producing the largest building downwash as determined during the visualization phase of the study.**

TEC Response

The referenced four unidentified wind directions will be selected through visualization. Please see section 5.1 on page 8 of the protocol for further clarification.

Summary

The above responses clarify TEC's understanding of the need for, and purpose of, the fluid modeling demonstration. In summary, that understanding is that a positive showing of excessive ground level concentrations due to downwash effects (at the existing stack height) from the fluid modeling, along with the dispersion modeling already performed (showing a modeled exceedance of the ambient air quality standard), provides the assurance necessary that raising the existing stacks to a new height, up to and including the formula height, is clearly justified.

A revised version of the August 1999 "Study Protocol", which conforms to the issues addressed in this letter, is enclosed. If you have any questions, please do not hesitate to telephone me at (813) 641-5033.

Sincerely,

Jamie Hunter
Administrator-Air Programs
Tampa Electric Company

EP\gm\JJH906

Enclosure

c: Ms. Linda Anderson-Carnahan, EPA (enc)
Mr. Greg Worley, EPA
Mr Cleve Holiday, FDEP (enc)
Mr. Bill Thomas, FDEP-SWD
Mr. Jerry Campbell, EPCHC

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

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Permit File Scanning Request from Cleve Holladay

Priority: ☐-ASAP (Public Records Request, etc.) ☒-Place in Normal Scanning Queue

Facility ID	Project#/PATS#	Type	PSD #	Submittal Date	Batch #
0570040	009	AC			

☒ File Approved For Disposal ☒ Correspondence ☐ Intent ☐ Permit ☐ Draft (Title V)

☐ Return File to BAR ☐ Amendment ☐ Application ☐ OGC ☐ Proposed (Title V)

Document Date Aug 27, 1999