



Interoffice Memorandum

TO: Julie Cobb

FROM: Steve Smallwood *SS*

DATE: April 24, 1986

SUBJ: SOUTH BROWARD MSW INCINERATOR, APPLICATION P.A. 85-21
BACT Determination

FOR ROUTING TO OTHER THAN THE ADDRESSEE

To: *Clair Fancy* LOCTN: _____
To: _____ LOCTN: _____
To: _____ LOCTN: _____
From: _____ DATE: _____

NOTES ON KEN KOSKY'S TESTIMONY

Mr. Kosky's testimony begins on page 2484. Ken said that he didn't really agree with DER's reason for rejecting the applicant's recommended BACT because he thought the technical information in his client's application supported the recommendation.

He describes the BACT analysis as a consideration of environmental impacts, economic impacts, and energy impacts. He said the purpose of the BACT analysis is to optimize the PSD increment consumption and to allow for economic growth. Note that the environmental, economic and energy impacts are actually only secondary considerations in a BACT determination. The primary consideration, as I will describe later, is a technology determination. Also note that the BACT analysis has nothing to do with PSD increment consumption other than the fact that if the application of BACT doesn't limit emissions sufficiently to prevent violating PSD increments or ambient standards you still can't build the facility.

He did note on page 2486, line 16, that weighing the three factors he described is somewhat a subjective balance.

He noted that there are no PSD increments for other than particulate or SO₂, which may have lead the hearing officer to believe that BACT doesn't normally concern itself with pollutants other than these two. In fact, on page 2487 he says, for the purpose of the BACT, the first aspect of the balancing would be to focus on these two pollutants. Again, he is stressing the tie-in between BACT and PSD increments which is a fallacious connection. He emphasized, again, environmental, economic, and energy impacts concerning the incremental difference between the applicant's recommendations and the department's. On page 2489, at the top of the page, he suggests that the department, in making its BACT analysis, didn't consider the differential cost and

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benefits between these two proposals which may have lead the hearing officer to conclude that the department didn't conduct a complete and thoughtful analysis of BACT.

On that same page, beginning on line 16, he says that in the second stage of his analysis he looks at those pollutants that are regulated by the act (referring to the Clean Air Act) and regulated by the department in a normal case of a BACT engineering analysis and looks at those impacts. It is important to note here that he didn't stop at saying those pollutants regulated by the Act, he went on to acknowledge that the department may look at pollutants other than those specifically regulated by EPA under the Clean Air Act, though I am not sure this inference came through to anyone.

Again, by the way he said it, he emphasized pollutants regulated under the Act which may have led the hearing officer to think that "unregulated" pollutants were not the proper subject of a BACT determination. He continues to emphasize ambient impacts through the next several paragraphs, again, taking the focus away from what BACT really is: a technology-based determination, not an ambient-based determination.

By emphasizing the ambient impacts, or as he presented it, the lack of significant differences in the ambient impacts of the two technologies with respect to particulate and sulfur dioxide, he is laying the ground work for ascerting that any increased cost or energy consumption is unreasonable because there is no resultant environmental benefit associated with it. A good argument, if it were true.

He then discusses the cost associated with the technologies and presents so many numbers that I think anybody would be confused. On page 2493, line 4, he says that Mr. Fancy said that it was appropriate to include a loss revenue figure in his calculation. If you check with Clair, I think you will find that Clair does not think he said that. You will have to check the transcript to see what he actually said.

What all the cost data seems to suggest is that the dry scrubber/baghouse control technology is economically in line with the typical cost of complying with EPA new source performance standards (NSPS), which is the upper limit for BACT. This then is partly a question of what you are comparing. If you are comparing the cost of the department's proposal with typical NSPS

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limits in view of whether the cost of the department's control technology is significantly out of line with what is generally required in BACT determinations, you would have to conclude that it is not out of line. If you look at it the way Kosky presented it, certainly the department's proposal cost more than the applicant's proposal and if there are no environmental benefits associated with the difference, then obviously the additional cost is judged unreasonable. Again, it goes back to Kosky's proposition that BACT is primarily an air quality based determination, which it is not.

On energy, he starts out with a reference to the energy crisis and pointed out that the energy aspect is not so much a matter of the cost of the energy, but whether we are unnecessarily increasing the energy consumption of a facility. Considering that this facility is a net producer of energy, its not logical to argue in any fashion that the facility, as a result of the department's recommended BACT, would be an unreasonably high energy consuming operation. Again, though, if you approach the question from the ambient based view point Kosky uses, it will appear that any increase in energy consumption is unreasonable, if you also start with the premise that there is no significant environmental benefit associated with the department's recommended technology.

He points out that the energy consumption of the baghouse and the precipitator would be about the same. He says that the electrical utilization will increase by about 41% due to the acid gas control (referring to the operation of the dry scrubber). This may have been one of the other factors that lead the hearing officer to feel that the dry scrubber technology was not appropriate since it was to control "unregulated pollutant" through a nonrule policy and was going to substantially increase energy utilization, as Kosky presented it. It would be interesting to know what the differential energy consumption, that is what that 41% represents in terms of the total megawatt output planned for the facility. Also, as Clair has pointed out, the whole purpose of the resource recovery technology is to prevent the disposal of solid waste from being a health and environmental hazard and, even with the department's proposed tehcnology the facility will still be a net generator of energy. So I don't believe that energy considerations are a major factor in this BACT determination.

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On page 2499, Kosky has asked an opinion on the degree of reasonable engineering certainty on the department's BACT. You objected, but the hearing officer let him go on anyway. He then proceeded to present seven reasons why he thought the department was in error. He talks about how the department represented the control technology cost on page 2500. From the transcript its not clear to me what he is talking about and I doubt that it was to the hearing officer either. It just sounds like the department staff was inconsistent about how they presented their data, though I'm not sure that's the case. You need to ask Clair about that particular point. Next he talks about the impacts. He appeared to object to the fact that the department didn't appear to give very much weight to the applicant's ambient impact analysis in the BACT determination, and we probably didn't, because its not appropriate to do so. He then talks about using other information to look at other "subjective" impacts and again its not clear what he is talking about. I think he is talking about acid gases and dioxin. At the top of the next page he seems to be referring to the department taking one piece of information out of the literature and applying it. I don't know what he is talking about but perhaps you and Clair do. He then said that we didn't look at the impacts associated with the Connecticut facility. On the rest of it, I can't figure out what he is really trying to say. He seems to be saying that the Connecticut facility and the Broward facility are very similar, yet somehow the impacts are very different. It is not at all clear what he is talking about. He implies on the top of the next page that applying the control technology without "sort of looking at" all of the scientific information, is inappropriate. Again, that brings me back to how he apparently thinks a BACT analysis should be done which is to give a lot of weight to the ambient impact as opposed to it being a control technology determination, which it basically is.

He then proceeds to present some more numbers which probably confuses people even more. Next, he said that he concluded that there were air quality considerations in the Connecticut determination, and by implication we didn't properly make such determinations in the Broward Co. determination. On page 2506, line 16, he says that the department didn't really consider impacts. Again, his choice of words gives the implication that the department didn't really do a rigorous analysis, but that is not literally what he is saying. But, I believe thats the emotional impression that was left from his comments. For example, on page 2507, line 8, he said that installing the dry scrubber would

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increase impacts - referring to the fact that there would be a lower plume rise with the dry scrubber than with the ESP because the exit gas temperature would be cooler. He goes on to say that its an offsetting thing, (since the emissions would be less from the dry scrubber/baghouses) but again, the impact of his statement is that this is untried technology that may have some adverse affects. Its interesting to note that on page 2508, Mr. Miertschin moved to strike the opinions Kosky offered about plume height and air modeling, presumably on the basis that it wasn't relevant to BACT, but the hearing officer overruled him.

See the top of page 2509 and ask Clair what this 43% vs 70% discussion is all about. With these comments, Kosky is giving the impression that the department did a very sloppy job on making and presenting its BACT analysis. He goes on to cite the lack of referencing in our BACT determination as a indication that we did an unprofessional job.

On page 2511, again, Kosky says that in "couching" his discussion on why he thought the county's BACT was reasonable, he indicated that the purpose of the BACT was to optimize consumption of the PSD increment. Again, he is just flat wrong on that. BACT has nothing to do with PSD increment other than what I noted before. He then indicates that there wasn't any reference in the BACT analysis to PSD consumption, I think leaving the hearing officer with the impression that there should have been. Of course, there should not have been, because that was addressed in the modeling analysis under increment consumption and not as part of the BACT analysis.

Kosky then says that his interpretation of the policy and purpose of BACT is consistent with EPA guidelines. Again, in his answer, he skips over the part about BACT being a technology based determination and emphasizes the secondary considerations on selecting the appropriate candidate technology to use.

All of what follows about the space shuttle, HCL mist, and clouds probably just served to confuse everybody and is really not relevant to the BACT determination. The discussion about acid rain is also irrelevant. You again objected, but the hearing officer let this irrelevant discussion continue. Page 2516, Kosky says that DER did not provide technical information on HCL in its cost-benefit analysis.

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On page 2528, Kosky is asked his opinion of the Department of Interior's recommended BACT. He said he felt the analysis done by the Department of Interior was totally based on control and it did not include really any evaluation of the impacts. He implied by his answer that since they didn't consider environmental, energy, and economic impacts to the extent he did, that their analysis was incomplete and that they were only suggesting what was the highest level of control that can be placed on the plant.

We should have put Clair back on the stand, or perhaps you should have gotten me to refute what Kosky said. Kosky may believe what he said is correct, but I think it very much mislead the hearing officer. It is not so much a matter of Kosky being blantly wrong on every point, it is more a matter of how he presents it--how he puts the emphasis on what he says, and what he implies, and the fact that he did not emphasize the central feature of BACT which is a technology based determination, which I will discuss next.

BACT DETERMINATIONS

17-2.100(24) defines BACT. 17-2.630 describes procedurally how BACT determinations are made and generally what considerations are taken into account in determining what BACT is in each particular case. It is important to understand that BACT is essentially a technology determination. It is a generalization of the process EPA has used for years to establish federal new source performance standards. It, like NSPS, is based on the policy that all new and modified sources should be controlled to the greatest degree reasonable irregardless of the associated ambient air quality impact.

If a new source is complying with NSPS or would comply with BACT and still not be able to comply with the ambient standards or the PSD increments, then it could not be built unless the applicant were able and willing to accept a more stringent emission limitation than BACT or NSPS.

The definition states that BACT is an emission limitation that is based on an engineering determination of the maximum degree of reduction of each pollutant emitted which the department determines is achievable through application of production processes, available method or systems, and techniques including

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fuel cleaning or innovative fuel combustion techniques for the control of each such pollutant.

It further states in the definition that if the department determines that it's not practical to establish a specific emission standard or methodology, that a design, equipment, work practice, operational standard, or combination thereof, will be prescribed instead of a specific emission limiting standard (instead of in terms of a specific pounds per hour emission limit) and that each BACT determination shall include a test method or other means for determining compliance with the standard, established.

The procedure for making this determination basically involves identifying which process changes or add-on air pollution control equipment can be used with the source to reduce the emissions of each air pollutants of concern.

It is important to note that in the department's definition of BACT a reference to controlling each pollutant emitted from the source is made. 17-2.100(7) defines air pollutant as any substance which in the outdoor atmosphere may result in or contribute to air pollution. 17-2.100(8) Air Pollution defines the presence in the outdoor atmosphere of any one or more substances or pollutants in quantities which are or may be harmful or injurious to human health or welfare, animal, plant, or property, or unreasonably interfere with enjoyment of life or property including outdoor recreation.

It is important with respect to that definition to note that it says "which are or may be harmful to human health or welfare", etc. Therefore, BACT may properly consider the discharge of any air pollutant from the facility if such emission may result in air pollution as defined in 17-2.

Therefore, the determination of BACT is not strictly limited to pollutants for which the department has established ambient air quality standards, or PSD increments, or other emission limiting standards for that matter; but may consider any air pollutant emitted from the facility which may result in air pollution. In passing it is worth noting that definition (1) Acid Mist includes hydrochloric acid mist as well as nitric acid mist, and well as sulfuric acid mist. All are certainly air pollutants and certainly can result in air pollution as defined by rule; and therefore, considering the emission and appropriate control of

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acid mist as part of a BACT determination is not only appropriate but is necessary whenever acid mist is or may be emitted from a particular facility.

In many cases, if not most, there is more than one type of technology or combination of technologies, that can be applied to a particular source to reduce the emissions of the various pollutants of concern. Determining what is the maximum degree of reduction possible for each pollutant requires a balancing because any given technology may be effective in removing one pollutant and not effective in removing another. Therefore, it is necessary to consider which pollutant emissions are of the most concern in a particular case and which technology or combination of technologies are most effective on an overall basis.

The various technologies that are feasible from an engineering point of view, will often produce different secondary affects. For example, a wet scrubber may produce wet sludge which can be difficult to dispose of, whereas a dry collector will produce a more manageable waste product. Wet scrubbers may require a high degree of water consumption. When clean water is needed and a source of clean water is not available, special water treatment facilities may have to be installed to allow for recirculation. Some control devices, such as electrostatic precipitators, can be effective in removing particulate matter, but ineffective in removing vapors and gases. If vapors and gases are emitted from the facility in sufficient amount to be of concern, a precipitator alone will never be adequate control technology.

In looking at how the secondary considerations of the BACT analysis are to be assessed, it is useful to understand BACT in the context of LAER and RACT.

LAER stands for Lowest Achievable Emission Rate see (definition 107). It is the most stringent emission level that can be achieved, supposedly not considering the cost of control. For a given category of source BACT is equal to or less stringent than LAER, and RACT is equal to or less stringent than BACT.

Definition number 153, states that RACT (Reasonable Available Control Technology), is the lowest emission limit that a particular source is capable of meeting through the application of control technology that is reasonably available, considering technological and economic feasibility. It may require

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technology that has been applied to similar, but not necessarily identical source categories.

Under both considerations it is clear that BACT, by definition, should be at least as stringent as NSPS (if there is one for the category), and certainly at least as stringent as RACT which requires the application of control technology that is reasonably available and technically and economically feasible.

Definition 24 on BACT says that in determining the maximum degree of reduction that is achievable for each pollutant that is emitted, the department will take into account, energy, environmental, economic impacts, and other costs. 17-2.630 further notes that in making a BACT determination the department will consider any EPA BACT determinations, NSPS standards, NESHAPS standards, all scientific, engineering, and technical material, and other information available to the department, including emission limiting standards or BACT determinations of any other state, and the social or economic impacts of the application of such technology.

An example of an environmental consideration is the balancing of increased particulate control, for example from a scrubber vs increased sludge disposal needs associated with it vs less sludge control and perhaps less emission control associated with other types of control devices.

The economic considerations are related to the economic feasibility of using the control equipment (note the economic feasibility requirement in RACT which is generally equal to or less stringent than BACT); and the general range of cost for complying with NSPS, which in 1978 dollars was approximately \$2,000 per ton of pollutant removed (which in terms of today's dollars would be more in the range of \$3,500 per ton of pollutant removed).

Energy considerations are related to net energy consumption by a facility and whether the increased energy consumption required to use a particular technology is balanced by the increased amount of pollutants removed or by the lessening of other environmental impacts such as sludge disposal, noise, etc.

The environmental impacts refer to in the definition of BACT are not primarily related to an assessment of compliance with ambient air standards or PSD increments. These ambient criteria are separate permitting criteria which must be complied with in

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addition to BACT. Differential air quality impacts may be considered in the analysis, particularly if one technology can provide substantially greater emission reduction than another or if one technology or combination of technologies is capable of removing a greater range of pollutants of concern than another technology.

The general procedure, then, for making such a determination would be to first identify the air pollutants of concern that will be emitted from the facility; identify process changes, operational practice, or control technology that can be used to limit the emission of each pollutant to the maximum degree feasible; then look at the balancing of these technologies, particularly to what extent they might be used in combination to control all the pollutants of concern to the greatest degree possible. Review the cost of implementing these various control strategies, keeping the cost within the general cost range of what is required for NSPS, that is approximately in the range of \$3,000 to \$4,000 per ton, 1985 dollars.

Take into concern the affect various technologies could have on dealing with the social needs and concerns of the people who live in the area. In many cases, the precise environmental consequences of emitting some pollutants is not known or immediately knowable. Also, because of the complicated nature of some processes, it is not always possible to know with a high degree of certainty what the actual maximum emissions will be during normal operation - particularly during startup and shut-down operations. In such cases it may not be possible to either prescribe a specific emission limiting standard, nor to prescribe the precise environmental impacts that may or may not be associated with the emission of such pollutants. The fact that they are not strictly quantifiable does not mean that they should not be considered in a BACT determination. In fact, they very specifically should, particularly if the air pollutants of concern are potentially toxic.

Julie, as a side note, observe that the department's rules say that the department shall make a determination of BACT. Does the Power Plant Siting Act, in fact, supplant that, or should the hearing officer just note that the department has determined BACT in a particular case? Basically, what I am raising is the question as to whether the hearing officer should legally even be involving himself in making a determination of BACT.

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SOUTH BROWARD NSW INCINERATOR BACT

The following is a qualitative description of the thought process for determining BACT for a facility such as the south Broward MSW Incinerator.

The pollutants of concern, at a minimum, would include: particulate matter; sulfur dioxide; nitrogen dioxide; carbon monoxide; volatile organic compounds (VOC); lead; other heavy metals such as the NESHAPS metals, cadmium, arsenic, etc.; acid mist emissions; and the emissions of dioxins and furans.

Particulate matter can be controlled by mechanical collectors called cyclones, electrostatic precipitators, wet scrubbers, and baghouses. Mechanical collectors are too inefficient to even be considered RACT on a process such as this so the only serious contenders for BACT will be high energy electrostatic precipitators, high energy venturi scrubbers, and baghouses.

SO₂ can be controlled through controlling the amount of sulfur content in the fuel or by adding either wet or dry sulfur dioxide scrubbing equipment. Nitrogen dioxide generally can be controlled by controlling the combustion process to limit the maximum flame temperature. The higher the flame temperature, generally the more nitrogen dioxide emitted.

VOC and carbon monoxide emissions can be controlled by providing adequate dwell time, turbulence and temperature for complete combustion.

Acid mist can be controlled with either wet or dry scrubbers.

Heavy metals are specific constituents of the particulate emission. They are generally a greater percentage of the finer particles. To control these toxic metals it is necessary to have as high a degree of fine particulate control as feasible.

Mercury vapor can be removed either through cooling the gas stream to condense the vapor into liquid metal droplets and removing them with conventional particulate control equipment, or collecting mercury in a wet or dry scrubber at reduced temperature, which will also collect organics which escape complete combustion.

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Dioxins and furans may be present in herbicides that are disposed of in the incinerator. They also may be produced in the combustion process itself, particularly if plastics and synthetic resins are burned. Dioxin emissions may be minimized through very high temperature combustion. The dioxin that is not decomposed by combustion tends to collect on the finer particles in the gas stream; therefore, technology that removes fine particulate also will tend to remove dioxin.

Looking at these choices, it is obvious that it will be difficult to have both NOx control and dioxin control using combustion practices alone on the same unit. Dioxin is a much more significant concern for these incinerations than NOx emissions, and, therefore, it is obvious that BACT in this case will include high temperature turbulent combustion of the municipal solid waste, providing for at least 1800°F in the primary combustion zone and at least several seconds dwell time. Since the composition of incinerator waste is variable, high temperature combustion alone may not always be successful, because it may not always be possible to maintain the temperature needed due to changes in waste composition, particularly the moisture content of the waste. Therefore, if possible, it is desirable to have some type of secondary/backup control for dioxin emissions. Such control can be in the form of controlling fine particulate to the greatest extent possible.

Heavy metals that are solid particles at stack temperature lead to the same consideration. The greatest degree of control of fine particulate is desirable to minimize the emission of such heavy metals. Also, as with dioxin, it is not easy, based on current data, to know what the actual maximum emissions of all of the heavy metals may be or what the ambient concentrations that result may be. What is known is that both toxic metals and dioxin can be minimized through the application of control technology that is efficient in removing fine particulate.

Acid gas emissions can be controlled through either wet or dry scrubbers. Some acid mist can be removed in electrostatic precipitators. However, acid gas emissions tend to corrode precipitators and degrade their performance over time.

Sulfur dioxide can be reduced through limiting the sulfur content of the waste burned or through the application of either wet or dry caustic scrubbers.

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Either electrostatic precipitator scrubbers, wet scrubbers, or baghouse can be used for particulate control.

Whether a particular specific emission limiting standard or test method should be applied in a particular case depends on whether it is technically and economically feasible to do so, and whether doing so would have any meaning as an indicator of how well the selected technology was being maintained and applied.

There are a couple of basic systems that present themselves as candidates for BACT as a result of this analysis. They all involve high temperature combustion of the waste and monitoring carbon monoxide, as a indicator of how well that combustion process is being managed.

If one discounts concerns about the need to control acid gases and toxic metals plus providing secondary or backup control for dioxin and furans, one can conclude that a precipitator and limiting the sulfur content of the combustible waste could be BACT.

If one feels that acid gas, heavy metals, and dioxin need to be controlled to minimize the public health risk of exposure to these contaminants; and to minimize potential corrosion problem to the equipment itself and the surrounding neighborhood, you would conclude that the use of a scrubber (either wet or dry) in combination with the best fine particulate control system, is BACT. A wet scrubber produces sludge which would be difficult to manage and dispose of, particularly in the south Florida environment. Therefore, if a scrubber is to be used it should be a dry scrubber. A dry scrubber could be used in combination with an electrostatic precipitator. However, electrostatic precipitators generally are not as efficient as baghouses, nor as reliable as baghouses in controlling very fine particulate. An ESP may just not perform adequately with a dry scrubber.

Therefore, the best candidate for BACT for these types of incinerators, giving weight to public concern and the potential public health risk from exposure to those pollutants for which the technical data is sparse, BACT would be high temperature combustion of the waste in combination with a dry scrubber and baghouse, with emissions test of those parameters that can be monitored, and CO monitoring as a check on the high temperature combustion efficiency.

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It is then, in fact, the potential environmental/public health risk that lead to this consideration as opposed to just looking at the easily quantifiable ambient impacts associated with particulate and SO₂ (which are not the pollutants of primary concern associated with these facilities anyway).

As for energy considerations there will be increased energy consumption in using a dry scrubber as opposed to just using electrostatic precipitators. However, the overall facility remains a net generator of electricity and the amount of electricity used to drive the dry scrubber does not prevent the facility from being a viable source of commercial electric power; and it in no way interferes with our natural energy independence. Therefore, energy consumption is not a significant consideration in determining BACT for this kind of facility.

The general estimates of cost which I have seen for this kind of system are well in line with what is generally required to comply with NSPS, which generally should be a minimum cost for BACT-- particularly a facility such as this that handles variable waste and presents a very large public health concern to the local community. In such a case, the public concern, the uncertainties, the potential adverse effects of some of the pollutants that will be emitted, more than justifies spending a little extra money to reduce the risk of exposure to toxic air pollutant emissions.

Considering the BACTs and permits issued by other states it has been noted that Connecticut and other states have within the last year or so found the high temperature combustion - dry scrubber/baghouse combination to be BACT for new MSW incinerators in their state. Increasingly, all of the major populated states over the last year have been coming to this same conclusion.

The basic question then becomes why use a precipitator just because its a little less expensive when you have a better technology that addresses all the pollutants of concern, and also provides the maximum degree of assurance to the people who live in the area that all that can reasonably be done is being done to minimize the emission of air pollutants from the facility.

The argument for this is that it is cheaper than the scrubber/baghouse and using the scrubber/baghouse is only justified by assuming unproven adverse health and environmental effects (impacts) from pollutants (acid gases, non-NESHAPS heavy metals, and dioxin) that should not be considered in a BACT determination

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(since they are not pollutants "regulated" by EPA under the Clean Air Act).

EPA's legal situation may be that they cannot consider pollutants in a federal BACT determination for which they have not already established an ambient or emission standard. If that is the case, they would not be allowed to consider dioxin, non-NESHAPs heavy metals, or HCL (perhaps - its debatable: because of their hazardous waste incinerator HCL standard under RCRA - not the CAA) in their determination. Not considering these pollutants makes it more likely that EPA would find BACT to be high temperature combustion and an ESP. If the only issues involved were non-toxic particulate and sulfur dioxide control, I think we would agree that an ESP would be ok.

CONCLUSION

I think the essence of the MSW Incinerator issue is this:

From a technical and policy point of view acid gases, heavy metals, and dioxins should be considered in determining BACT for these facilities. The BACT determination should be approached as I have described it. I believe our rule allows that. I am aware that there are several plausible arguments against the conclusion I have reached and what I have recommended.

If we cannot consider all air pollutants of concern (not just "EPA regulated" pollutants) in our BACT determinations, and if BACT cannot be determined as I have outlined, (because of the way our rules are written and how they would be interpreted by a court), we need to rewrite them as soon as feasible to clearly allow what I have presented.

Regardless of the legal determination on how we can use the existing BACT rule, I believe we need to promptly initiate rule-making to establish specific state performance standards for all MSW Incinerators - both new and existing. The state performance standards would serve as a ceiling on what BACT could be for these facilities. The state performance standard should require the use of a dry scrubber/baghouse with high temperature combustion and adequate emission testing and continuous monitoring (at least CO & opacity) for those pollutants that can be readily measured or monitored.

SS:jr

cc: John Brown
Clair Fancy
Walter Starnes
Hamilton Oven

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION
INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee		
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TO: Steve Smallwood *JS*
FROM: Walter Starnes *WES*
DATE: April 23, 1986
SUBJ: EPA New Source Performance Standards and Guideline Documents for Municipal Solid Waste Incinerators

We contacted Mr. Ray Morrison--Pollutant Assessment Branch of EPA's Office of Air Quality Planning and Standards at Research Triangle Park--about EPA's development of new source performance standards and guideline documents for toxic air pollutant emissions from municipal solid waste incinerators. He said the study is still being structured, but indicated that work is already under way. Presently EPA plans to publish a draft document about the end of this year and a final document before spring of 1987. A summary document will probably be published first because EPA has to make a report to Congress concerning Dioxin emissions.

Mr. Morrison said the study is presently tied to the development of new source performance standards for small boilers because EPA thinks most new municipal solid waste incinerators will be equipped with heat recovery and be large enough to be subject to the standards. Depending on the findings of the study, a new NSPS or NESHAPS for municipal solid waste incinerators might result. He expects EPA's standards to require the use of dry scrubbers in series with fabric filters. EPA has been looking at some testing done by the Canadians which indicates that this is an effective technology. He said results he has seen show that the removal efficiency is influenced by gas temperatures--at least where organic compound emissions are concerned. Lower gas temperatures seem to result in greater removal efficiencies. A municipal solid waste incinerator in Marion County, Oregon which is equipped with a dry scrubber in series with a fabric filter is being compliance tested. EPA may elect to test this incinerator to evaluate the effectiveness of the control device for removal of toxic air pollutants. Other study plans include examining the control technology used by the Europeans and Japanese. Mr. Morrison told us that the states seem to be pushing for the use of dry scrubbers in series with fabric filters.

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Although the structure of the study is not finalized, he was able to give us the names of some of those who were slated to be involved. He suggested that we talk to those whose names have an asterisk beside them. He seemed to feel that Mr. Peter Schindler is well versed about the control technology. The names and a description of the proposed responsibilities of those to be involved in the study are as follows:

- Steve Green--Office of Solid Waste Management, Washington, DC (202) 382-4608--Responsible for the project coordination. He will be assisted by a technical advisory committee.
- Ray Morrison--Pollutant Assessment Branch, Office of Air Quality Planning and Strategies, Research Triangle Park, NC (919) 541-5645--Responsible for risk assessment.
- * Pete Schindler--Emission Standards and Engineering Division, Research Triangle Park, NC (919) 541-5601--Responsible for examining technology for the control of toxic metal particulates.
- * Jim Kilgro--Office of Research and Development, Research Triangle Park, NC (919) 541-2854--Responsible for examining the effects of combustion variables on emissions of acid gases and toxic organic compounds.
- * Charlie Sedman--Office of Research and Development, Research Triangle Park, NC (919) 541-7700--Responsible for examining technology for the control of acid gases and toxic organic compound emissions.
- Silva Garg--Office of Solid Waste Management, Washington, DC (202) 382-7933--Responsible for looking at operation and maintenance requirements. He is also responsible for looking at the control technology being applied in Japan and Europe.

Mr. Morrison asked if we had a list of incinerators under construction or planned through 1995. We agreed to find out and send him a copy, if available. He plans to use this list as part of the study which includes projecting the number of municipal solid waste incinerators to be constructed through 1995. He also told us that EPA is evaluating the solid waste disposal aspects of the collected particulate materials.

cc: Julie Cobb
Clair Fancy

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION



Interoffice Memorandum

TO: Victoria J. Tschinkel
Secretary

FROM: Steve Smallwood *SS*
Chief, Bureau of Air Quality Management

Julie Cobb *JC*
Air Attorney, Office of General Counsel

DATE: May 8, 1986

SUBJ: South Broward County Resource Recovery Project
BACT Determination
Power Plant Siting Application No. 85-21

FOR ROUTING TO OTHER THAN THE ADDRESSEE

To: _____ LOCTN: _____
To: _____ LOCTN: _____
To: _____ LOCTN: _____
FROM: _____ DATE: _____

In his April 30, 1986 letter to you, Clifford Schulman, an attorney employed by Broward County for the above captioned case, continues to assert his misinterpretation of the department's BACT rule.

By emphasizing the exceptions to the rule, rather than the basic intent of the rule, he seeks to have the BACT process applied in a way that would have the department intentionally ignore important potential environmental consequences associated with his client's project.

Mr. Schulman may well believe his interpretation of our rule is correct, but we believe he is mistaken. Because of the importance of this issue to the air program we have outlined the following counterpoints to the points he makes in his letter to you.

A BACT determination is not essentially an analysis of the energy, environmental, and economic impacts of applying demonstrated technology. To state it that way, is to state it backwards. A BACT determination is basically a technology determination with those considerations--energy, environmental, and economic impacts--as secondary considerations for selecting a specific technology to apply in a particular case or in determining the stringency with which to apply a particular technology. Moreover, the attainment or nonattainment status of an area has nothing to do with how a BACT determination is made, although it is one determinant as to whether a BACT determination is required.

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He asserts on page two that DER has adopted a generic approach to the determination of appropriate control technology in nonattainment areas, referring to the "Lowest Achievable Emission Rate" (LAER) rule. He is mistaken in that LAER is not a generic approach; but, like BACT, is a case-by-case determination. The difference is the criteria on which the determinations are based. He further asserts that the BACT rules are not technology-forcing regulations, but require a case-by-case analysis of benefits and impacts. Again, he is incorrect. Not only BACT, but also the less stringent RACT (Reasonable Available Control Technology) rules, can -- and are intended to be -- technology-forcing in that they may require the application of a technology to a process that is similar to one on which the technology has been proven, but not identical.

He next asserts that BACT requirements do not apply to every pollutant emitted by a facility. On this point we have a fundamental difference of opinion. He cites the PSD rule, which refers to a table of pollutants that are to be considered in a BACT determination. Our view is that these pollutants are to be considered as a minimum. It is clear in the department's definition of BACT that a BACT determination addresses all pollutants emitted from an affected source. It is only by excluding consideration of potential pollutants such as dioxin, hydrochloric acid, and toxic heavy metals, that the county's proposed BACT can be justified in light of currently available air pollution control technology for a new municipal solid waste (MSW) incinerator.

In the next paragraph he suggests that the department has taken a generic approach to the consideration of environmental, energy, and economic costs in its BACT determination. This is not the case. We just do not give the same weight to these factors that he would. He attempts to establish that much reliance should be given to modeling ambient impacts although, in fact, this is just one factor that may be considered in the analysis of the "environmental" effects. The environmental effects considered in a BACT analysis are much broader than that -- including considerations such as whether a particular air pollution control device may cause potential water pollution and/or disposal problems.

In the next paragraph he suggests that in the department's BACT analysis we have not considered all of these factors. Again, it is clear that we have, but we have not considered them in the way in which he would have us do it. In fact, we have considered

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some environmental impacts that he wishes to exclude us from considering.

He next attempts to establish that the department should be instructed by Ken Kosky on how to do BACT determinations. I think its clearly established in law that in interpreting an agency's regulations, deference is to be given to the agency that adopted the regulations. In this case, this department developed the regulations and it is, therefore, clear that the department should be deferred to and, perhaps Mr. Kosky and others should be instructed by the department as to the appropriate way of applying BACT.

In the next paragraph he suggests that the department may believe that the rule does not presently provide for any "weighing" of factors to be used in the review process. In this case he is, for whatever reason, attributing a position to the department that the department has never taken. The department staff has made it clear that all these factors are to be taken into account or, as he says, "weighed". Its just a matter that we don't give them the same weight that he would have us give them and, therefore, in this paragraph he is attempting to assert that we haven't weighed these factors at all.

He then goes on to suggest that we should settle this whole thing through rule-making, which perhaps is an attempt on his part to assert that we don't have the authority to make these kinds of determinations through the BACT rule. It is the staff's opinion that we do have the authority to make such determinations and the recommendation made for the Broward County South MSW Incinerator is an appropriate application of the BACT rule. However, we would not disagree with him that additional rule-making may be an appropriate mechanism for helping to deal with this issue in Florida, since we expect to have so many of these facilities built over the next several years. However, it would not be appropriate in our view to say that we do not currently have the authority and necessary technical information to regulate new MSW incinerators on a case-case-basis through the current rule. We believe we do. Developing an additional rule that would establish minimum requirements might serve to eliminate some disputes, but a case-by-case BACT determination would still be required for new facilities and, in some cases, might result in performance standards more stringent than the minimum standards that the additional rule might specify. The additional rule would be the appropriate means of establishing if any of the

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existing MSW incinerators need to be retrofitted with the new control technology. Further in this paragraph he suggests that having to comply with the dry/scrubber baghouse technology recommended by the staff would somehow disrupt or make it unfeasible to build new resource recovery facilities. I think it is clear that is not the case. Palm Beach County has accepted the dry scrubber/fine particulate technology, and just about all new resource recovery facilities built anyplace in this country from now on will most likely have this kind of air pollution control technology.

In his last paragraph he offers to meet with you and bring his expert consultant to assist in the discussion. We have no objections to a meeting nor to the presence of his consultant(s). However, it is a bit presumptuous of him to imply that his consultants are more expert than your own staff, particularly in the matter of how to apply department rules.

SS:jr

cc: Al Devereaux
Howard Rhodes
Clair Fancy
Walt Starnes
John Brown
Gary Early