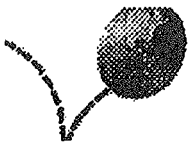

Brenda Johnson
05/25/2000 12:46 PM

To: Joe Tikvart/RTP/USEPA/US@EPA

cc:

Subject: ISC-Prime to set stack height vs fluid modeling

Joe:

Jim Roller of NC DENR may be contacting you to ask you why fluid modeling is recommended if a facility wants to raise the stack height that is above the 65 meters de minimis level. Modeled SO2 violations were identified by NC DENR many years ago for several Duke Energy plants. Duke Energy challenged the results and questioned the results based on the out-dated downwash algorithms in ISC. The state allowed the source to verify the monitored violations for some of the facilities though the siting of a monitor at the facilities. Monitored violations resulted and the state allowed Duke Energy to use higher stack heights in modeling to set emission limits (the facility generally contained up to four collocated stacks) with some emission reductions. Region 4 recently discovered this problem and resolution approaches and questioned compliance with the stack height regulations. (I've been over this with Dean and Gary in other areas.) Region 4's recommendation is for fluid modeling to address the excessive concentration criterion prior to actually the raising the stacks and modeling to set new emission limits. Before meeting with Duke to give them this news, Jim wanted to know why the fluid modeling requirement was initially recommenced with the stack height revision of 1985 and why newer models such as ISC-Prime would not be used today for this requirement.. I told him that fluid modeling is preferred probably because of the types of mathematical models in place at the time. I stated that if we were to allow ISC-PRIME to be used instead of fluid modeling, there would need to be developed some sort of equivalency demonstration to show that ISC-PRIME predicted a GEP Stack height within a comparable degree of accuracy and reliability. What that would entail, I did not know because if was never tried to my knowledge. Well, Jim will contact you to ask you this question. Please let me copy me in any responses. I'm in class today and out tomorrow until Tuesday. Have a great Memorial Day. .... Brenda

Brenda C. Johnson
US EPA Region 4
Air Planning Branch
ph: 404/562-9037