



Brenda Johnson

01/19/2000 02:58 PM

To: Jim\_Roller@ncair.net, Brenda Johnson

cc: Stanley Krivo, Kay Prince, Linda Anderson-Carnahan

Subject: Re: FW: ISC-Prime

Jim, it appears that Duke has made a good start in making a case for using the ISC-PRIME model. There still needs to be a justification for why ISC-PRIME is needed for the specific modeling application by Duke Power Clifftside. Specifically, the justification needs to address if and why downwash concerns exist for the Duke Power facility to require this model. Attached is a copy of the letter from Region 4 to US Sugar approving their use of ISC-PRIME. Much of the demonstration in that letter has been addressed by Duke Power. You should or require Duke Power to do a comparison between ISC3 and ISC-PRIME similar to that performed by Stan Krivo in the letter to illustrate the existence of downwash concerns near the perimeter of the facility and the performance of ISC-PRIME and ISC3 in addressing this issue. It should also illustrate the similarity of the models in predicting concentrations at increasing distance from the facility.

I mentioned that I was unsure if the SO2 problems that you are working with these sources would require a SIP revision. I'm still working on it. I'll follow up on this later.

Reply Separator

Subject: FW: FW: ISC-Prime

Author: Jim\_Roller@ncair.net at IN

Date: 10/27/1999 11:10 AM

Brenda,

Eldewins has submitted the attached document (his e-mail to me) to support his request to use ISC-PRIME in lieu of ISCST3 for the Dan River modeling compliance demonstration. I have reviewed the document and believe he has addressed your comments for providing justification. I am under the impression ISC-PRIME was developed to address concerns associated with the way ISCST3 handles plume rise and building downwash, particularly for tall, buoyant plumes associated with power plants. Based on the conclusions of the ISC-PRIME evaluation, ISC-PRIME would appear to be the more appropriate model to use for the Dan River modeling scenario. Please review and provide comments at your convenience. Thanks!

Jim Roller  
Supervisor, Air Quality Analysis Branch  
(919) 715-6262  
email: jim\_roller@aq.enr.state.nc.us

-----Original Message-----

From: Eldewins M Haynes [mailto:emhaynes@duke-energy.com]

<mailto:[mailto:emhaynes@duke-energy.com]>  
Sent: Wednesday, October 27, 1999 9:49 AM  
To: Roller Jim  
Cc: Marsha C Kinley; Robert A Mc Murry  
Subject: Re: FW: ISC-Prime

<<Mac Word 3.0>>

Jim,

Based on Brenda's letter, I have formulated responses which I believe provide sufficient justification to use ISC-PRIME in place of ISCST3. The response itself is in the attached document. My understanding is that you will forward my responses to EPA Region 4 for their review and approval. If you have any additional questions, or cannot read the document, feel free to contact me.

(See attached file: Prime justification.doc)

Roller Jim <Jim\_Roller@ncair.net <mailto:Jim\_Roller@ncair.net> > on 09/28/99 09:15:14 AM  
To: Eldewins M Haynes/Corp/DukePower@DukePower  
<mailto:Haynes/Corp/DukePower@DukePower>  
cc:  
Subject: FW: ISC-Prime

Eldewins,

The letter from Brenda Johnson provides a description of what you would need to do to obtain approval for using the ISC-PRIME model in lieu of ISCST3. The ISC-PRIME performance evaluation data is available from the 7th Modeling Conference web site (address below). The request to use ISC-PRIME and justification can be submitted with the modeling protocol or if the protocol has already been submitted or if you are using the protocol checklist then the request and justification can be submitted separately. Remember, this is a case-by-case approval and as such, you must obtain approval for each facility or compliance demonstration for which you wish to use ISC-PRIME. Call or e-mail me if you have questions.

<http://www.epa.gov/scram001/t29.htm#iscprime>  
<<http://www.epa.gov/scram001/t29.htm#iscprime>>  
<<http://www.epa.gov/scram001/t29.htm#iscprime>>  
<<http://www.epa.gov/scram001/t29.htm#iscprime>> >

Jim Roller  
Supervisor, Air Quality Analysis Branch  
(919) 715-6262  
email: [jim\\_roller@aq.enr.state.nc.us](mailto:jim_roller@aq.enr.state.nc.us) <mailto:jim\_roller@aq.enr.state.nc.us>

-----Original Message-----

From: Johnson.Brenda@epamail.epa.gov  
<mailto:Johnson.Brenda@epamail.epa.gov>  
<mailto:Johnson.Brenda@epamail.epa.gov>

<mailto:Johnson.Brenda@epamail.epa.gov> >  
[mailto:Johnson.Brenda@epamail.epa.gov]  
<mailto:[mailto:Johnson.Brenda@epamail.epa.gov]>  
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<mailto:[mailto:Johnson.Brenda@epamail.epa.gov]> >  
Sent: Monday, September 27, 1999 11:23 AM  
To: jim\_roller@aq.ehnr.state.nc.us;  
<mailto:jim\_roller@aq.ehnr.state.nc.us;>  
<mailto:jim\_roller@aq.ehnr.state.nc.us;  
<mailto:jim\_roller@aq.ehnr.state.nc.us;> > Johnson.Brenda@epamail.epa.gov  
<mailto:Johnson.Brenda@epamail.epa.gov>  
<mailto:Johnson.Brenda@epamail.epa.gov  
<mailto:Johnson.Brenda@epamail.epa.gov> >  
Subject: ISC-Prime

<<ISC-Prime>>

From: Brenda\_Johnson%REGION4@ccmail.epamail.epa.gov  
<mailto:Brenda\_Johnson%REGION4@ccmail.epamail.epa.gov>  
To: Wilson Cathy <Cathy\_Wilson@ncair.net <mailto:Cathy\_Wilson@ncair.net>  
>  
Cc: Kay\_Prince@ccmail.epamail.epa.gov  
<mailto:Kay\_Prince@ccmail.epamail.epa.gov> ,  
Randy\_Terry@ccmail.epamail.epa.gov  
<mailto:Randy\_Terry@ccmail.epamail.epa.gov> ,  
Stanley\_Krivo@ccmail.epamail.epa.gov  
<mailto:Stanley\_Krivo@ccmail.epamail.epa.gov>  
Subject: ISC-Prime  
Date: Tue, 18 May 1999 14:53:00 -0400  
    MIME-Version: 1.0  
    X-Mailer: Internet Mail Service (5.0.1460.8)  
    Content-Type: text/plain

Cathy:

The following questions are being sent in response to your telephone call on what is required to use the ISC-PRIME model for modeling demonstrations. First of all, ISC-PRIME is not an EPA guideline model but has been under review by EPA. For regulatory purposes, the ISC3 model should be used. Case-by-case consideration and approval of non-guideline models are possible with the appropriate justification per section 3.2 of 40 CFR Part 51, Appendix W: Guideline on Air Quality Models. Any approval for ISC-PRIME, unless it became an EPA model, would be on a case-by-case basis and would not imply approval for use by other sources. Specifically, some questions/items that must be addressed for a case-by-case approval of ISC-PRIME include:

1. Why does ISC-PRIME offer a better theoretical simulation of the problem?
2. Based on the available performance evaluation data for ISC-PRIME, why would ISC-PRIME be expected to perform better than ISC3 for this application. To do this latter evaluation, the source/state should

Identify the evaluation data base(s) that is (are) similar to the situation for the proposed source. To assess similarity, the building/source geometry and the stack effluent characteristics should be compared for the evaluation data base and the proposed source. This could include a comparison of the stack height to building height ratios, and a comparison of the momentum and buoyancy fluxes.

3. Discuss the model evaluation of the ISC-PRIME model.

If this demonstration will be submitted to EPA as a SIP revision, we would prefer that a modeling protocol be submitted first. Approval of a non-guideline model should be approved prior to its use. Please let me know if I can be of further assistance. Have a great day....

Brenda Johnson



- fnlprime.letRFC-822-headers:

Received: from merlin.rtpnc.epa.gov by epamail.epa.gov (PMDF V5.1-12 #26438) with ESMTP id <0FK900FE5QZWMB@epamail.epa.gov> for brenda\_johnson%region4@ccmail.epamail.epa.gov; Wed, 27 Oct 1999 11:58:02 -0400 (EDT)

Received: from exchange.aq.ehnr.state.nc.us (mail.aq.ehnr.state.nc.us) by epamail.epa.gov (PMDF V5.1-12 #26439) with ESMTP id <0FK9005R1QXGKD@epamail.epa.gov> for brenda\_johnson%region4@ccmail.epamail.epa.gov; Wed, 27 Oct 1999 11:56:22 -0400 (EDT)

Received: by mail.aq.ehnr.state.nc.us with Internet Mail Service (5.5.2650.21) id <4WSXHN9P>; Wed, 27 Oct 1999 11:10:22 -0400

Content-return: allowed

Date: Wed, 27 Oct 1999 11:10:21 -0400

From: Roller Jim <Jim\_Roller@ncair.net>

Subject: FW: FW: ISC-Prime

To: "Johnson.Brenda@epamail.epa.gov" <Johnson.Brenda@epamail.epa.gov>

Cc: "Eldewins Haynes (E-mail)" <emhaynes@duke-energy.com>, Wilson Cathy <Cathy\_Wilson@ncair.net>, Butler Laura <Laura\_Butler@ncair.net>

Message-id: <A781D85D6504D211B40F00805F9F4C3A678928@mail.aq.ehnr.state.nc.us>

MIME-version: 1.0

X-Mailer: Internet Mail Service (5.5.2650.21)

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