Callaway2COLPEm Resource

From: Steve Hanna [steven_hanna@insightbb.com]
Sent: Tuesday, March 17, 2009 2:27 PM
To: Mazaika, Michael; Robert Kornasiewicz
Cc: Harvey, Brad; Ramsdell, James V Jr (Van); Arora, Surinder; Olson, Bruce; Fringer, John; Charles Cox; Marty Bowling; Callaway2COL Resource
Subject: RE: RE: Mixing heights

Mike - Please see my responses in blue below. Steve

At 01:08 PM 3/17/2009, Michael Mazaika wrote:

Bob/Steve:

Took a closer look at Holzworth and one of the stations for which observations have been summarized is Columbia, MO (about 25 to 30 miles NW of the site). The annual average mixing height for NOP conditions (which exclude precipitation, cold air advection, and missing periods in the statistics) is about 845 m - the value input to the AEOLUS3 model.

SH - The so-called Holzworth method and sets of mixing depths must be at least 40 years old. At the time that the analysis was done, there were more upper air stations and some were even different from what is available now. The "closest" upper air site is likely to be different now. Probably 845 m is an OK annual average, but the diurnal and monthly distributions would be different now.

Not sure why the applicant chose to characterize mixing height in FSAR Section 2.3.2.1.5 (ER Section 2.7.4.3) based on observations at Springfield, MO except for the fact that it might currently be the closest upper air station to the site (about 110 miles SSW). There doesn't appear to be any linkage between these climatological discussions of mixing height and the mixing height value input to the dispersion modeling (AEOLUS3 accepts only one mixing height value; I don't yet know whether the XDCALC model uses this parameter as input). In any case, I would expect the applicant to have identified this linkage (i.e., by cross-referencing) and provided an interpretation of the differences between the two mixing height discussions and how the respective information is used. This could be the subject of an RAI question (I suspect the response would be that the mixing height value input to the model is lower and therefore relatively more conservative).

Bob - unless you want more details as to how the Springfield, MO mixing height values were generated, I don't know that I would pursue obtaining, and if necessary processing, the data from NCDC. You may, however, want to contact them at the number provided by Bob Paine to see if some summary level information is available for the site region. The EPA SCRAM webiste has only seven years of processed (morning and afternoon) mixing height data for the upper air station at Monett, MO (about another 35 miles SW of Springfield).

Bob/Steve - in looking closer at the respective SAR and ER sections that address dispersion modeling inputs, I find that there is no tabular summary, at a minimum, in the ER that lists other model input data to the AEOLUS3 and XDCALC dispersion models that may be common to the PAVAN and XOQDOQ models that staff will run to confirm the applicant's results. There is a brief summary table (i.e., FSAR Table 2.3-88) that provides some info, but not to the level of detail as, for example, FSAR Tables 2.3-146 and 2.3-154 in the Bell Bend COL Application (which you can access from the NRC public web site). From the Safety Analysis Report (SAR) side of things, I plan to generate an RAI and related questions to revise the SAR to include this

information (one set for each model). The details will vary between how the model(s) were run for each application, but right now it is scant on the SAR side and absent from ER Section 2.7. I'll share the write-up with you when the questions get generated for the Callaway Unit 2 application so we don't duplicate effort and because I understand RAIs on the environmental side are currently handled differently for the ER.

SH - Isn't this what I have been saying about the Callaway ER all along? This is why I have been asking for the additional information in the Info Needs table (the word "additional" isn't really appropriate since only a tiny fraction of the needed information is in the present ER). And the NMP ER has the same deficiencies because it is written by the same group.

Please let me know if you have any questions.

Thanks,

Mike

From: Steve Hanna [mailto:steven_hanna@insightbb.com]
Sent: Tuesday, March 17, 2009 9:52 AM
To: Robert Kornasiewicz; Michael Mazaika
Subject: Fwd: RE: Mixing heights

Bob - Just to be sure, I asked Bob Paine of AECOM (formerly ENSR, formerly ERT), since he and his group do tons of EPA AQ permits. His response is below. The way that NCDC works, it helps to know the name of the person there who specializes in a certain type of met data. Otherwise you can bounce around the web site and waste a lot of time (sort of like the EARRTH site). Steve

Original-recipient: rfc822;steven_hanna@insightbb.com
Date: Tue, 17 Mar 2009 09:03:40 -0400
From: "Paine, Bob" <Bob.Paine@aecom.com>
Subject: RE: Mixing heights
To: Steve Hanna <steven_hanna@insightbb.com>
Thread-topic: Mixing heights
Thread-index: AcmnAIyxbVVkuwcHRjyE8k5HWZNEUwAACheg

Steve,

We usually call William Brown at NCDC at 828-271-4800 x 3161.

Bob

From: Steve Hanna [mailto:steven_hanna@insightbb.com]
Sent: Tuesday, March 17, 2009 9:02 AM
To: Paine, Bob
Subject: Mixing heights

Bob - Do you have a precise web address or phone number at NCDC for obtaining "EPA" mixing heights for several years for Springfield Missouri? For the NRC new reactor environmental statements, I recommended that Bob Kornasiewicz get the mixing heights from them but then realized I usually have somebody else actually find the data. Thanks. Steve

Original-recipient: rfc822;steven_hanna@insightbb.com
Date: Mon, 16 Mar 2009 21:38:07 -0400
From: Robert Kornasiewicz <rkorna@comcast.net>
Subject: Re: Reference Documents TO59
To: Steve Hanna <steven_hanna@insightbb.com>
X-Mailer: Microsoft Outlook Express 6.00.2900.3138
X-IronPort-Anti-Spam-Filtered: true
X-IronPort-Anti-Spam-Result:
AnABAJubvklMYDvTmWdsb2JhbACCUYdNgSoGiggBAQEBAQgLCgcRvluCPIFDBg
X-IronPort-AV: E=Sophos;i="4.38,375,1233550800"; d="scan'208,217";a="604403804"

Steve,

Do you have the web address for the NCDC data base on Mixing Heights? I believe that there is an upper air sounding station at Springfield, MO and perhaps that mixing height data is in the NCDC files. Also, thanks for the Lundquist email address. I will try to make contact to see what wind gust data are available.

Bob
----- Original Message -----
From: Steve Hanna
To: Michael Mazaika ; Robert Kornasiewicz
Cc: Brad Harvey ; Thomas Galletta ; Kevin Quinlan ; Leta Brown ; Charles Cox ; Ramsdell, James V Jr (Van) ; Callaway2COL Resource
Sent: Monday, March 16, 2009 8:46 PM
Subject: RE: Reference Documents TO59
Mike - Concerning the mixing heights - I normally use what was developed using the EPA method. It is available at NCDC for many sites, if they were previously asked by somebody to generate mixing heights at that location. Many other locations are available for a cost from companies such as Trinity and Lakes, who market windows-based EPA model software and data files. Multiple years are in the archives.

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Email Number: 86

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Subject: RE: RE: Mixing heights
Sent Date: 3/17/2009 2:26:41 PM
Received Date: 3/17/2009 2:27:14 PM
From: Steve Hanna

Created By: steven_hanna@insightbb.com

Recipients:
"Harvey, Brad" <Brad.Harvey@nrc.gov>
Tracking Status: None
"Ramsdell, James V Jr (Van)" <van.ramsdell@pnl.gov>
Tracking Status: None
"Arora, Surinder" <Surinder.Arora@nrc.gov>
Tracking Status: None
"Olson, Bruce" <Bruce.Olson@nrc.gov>
Tracking Status: None
"Fringer, John" <John.Fringer@nrc.gov>
Tracking Status: None
"Charles Cox" <>
Tracking Status: None
"Marty Bowling" <mbowling@numarkassoc.com>
Tracking Status: None
"Callaway2COL Resource" <Callaway2COL.Resource@nrc.gov>
Tracking Status: None
"Mazaika, Michael" <Michael.Mazaika@nrc.gov>
Tracking Status: None
"Robert Kornasiewicz" <rkorna@comcast.net>
Tracking Status: None

Post Office: asav03.insightbb.com

Files	**Size**	**Date & Time**
MESSAGE	7465	3/17/2009 2:27:14 PM

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
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