

Microsoft Teams conversation, with Nick Davey ENV (2023-11-28)

Davey, Nick ENV:EX Tuesday 11:52 AM

ND Anything over 900ug/m3 near residences?

Tuesday 11:52 AM

Copyright

start up flaring, max 1-hour (NOT 99th)

max value (the red dot) is 1301 ug/m3, which is along the fenceline

but that whole 450/900 level thing is so out of date, and isnt used anywhere that i can see

best not to refer to those levels for health impacts

oh, that's without baseline too

Davey, Nick ENV:EX Tuesday 11:55 AM

ND well then if it's old and out of date all you have to go on is the CAAQS ? Nothing else?

Tuesday 12:07 PM

depends on the flare, usually 2 hours but some can be 6 hours

UF-SMAX	4-6 hours, once annually (less likely)
UF-SAVG	4-6 hours, once annually (more likely)
UF-PTSU	2 hours, once annually
SUFG-SMAX	2 hours, once annually
SUFG-SAVG	2 hours, once annually

these are the flare scenarios of my project

then there are instances where emissions can be higher due to other things like gas composition, and theres also a whole period of "initial performance" when the place starts up

which is 36 months and will have more frequent flaring

Skype conversation with Li Huang, 2023-11-28

Seagram, Annie ENV:EX 3:31 PM:

Hi Li; are you the right person to ask about the information for modelling flaring in the Guideline?

Huang, Li ENV:EX 3:35 PM:

Yes

Seagram, Annie ENV:EX 3:35 PM:

I was just wondering why there is a threshold for 450 ug/m3; where does it come from, and how should it be interpreted.

Seagram, Annie ENV:EX 3:35 PM:

From what I can tell, it is equivalent to the old PCO Level A for SO₂

Seagram, Annie ENV:EX 3:36 PM:

but I am reading an assessment that has a lot of modelling for flaring, and they are referring to the 450 ug/m3 threshold as though it should be compared to like an AQO.

Huang, Li ENV:EX 3:36 PM:

That is the old Canadian national standard for NO₂.

Huang, Li ENV:EX 3:36 PM:

for SO₂

Seagram, Annie ENV:EX 3:36 PM:

my interpretation is that it is in the Guideline to help determine if more refined modelling is needed, and not for something related to impact assessment.

Seagram, Annie ENV:EX 3:37 PM:

Am I correct? what is the purpose of the 450 threshold then?

Huang, Li ENV:EX 3:37 PM:

correct

Seagram, Annie ENV:EX 3:37 PM:

Ah.

Huang, Li ENV:EX 3:37 PM:

we use it as a threshold.

Seagram, Annie ENV:EX 3:39 PM:

there is some language in the guideline that explains the 450 and 900ug/m3 thresholds in relation to effects on vegetation

Seagram, Annie ENV:EX 3:39 PM:

are those still applicable?

Huang, Li ENV:EX 3:40 PM:

that is only for well testing flaring only.

Seagram, Annie ENV:EX 3:41 PM:

Oh. good point.

Seagram, Annie ENV:EX 3:41 PM:

so is there any utility to using that threshold for interpreting the output from other types of flares?

Seagram, Annie ENV:EX 3:41 PM:

eg upset flares, start-up flares

Huang, Li ENV:EX 3:41 PM:

no use for other types of flaring.

Seagram, Annie ENV:EX 3:42 PM:

OH.

Seagram, Annie ENV:EX 3:42 PM:

that's good to clarify.

Seagram, Annie ENV:EX 3:43 PM:

So my next question would be, do we have any guidance related to interpreting results from other types of flaring? or do you know of any from other jurisdictions?

Huang, Li ENV:EX 3:44 PM:

you can check out Alberta Energy Regulator's non-routine flaring guideline.

Seagram, Annie ENV:EX 3:44 PM:

i have that open on my computer, haha. I will look over it in detail.

Seagram, Annie ENV:EX 3:44 PM:

thanks for the info!

Huang, Li ENV:EX 3:50 PM:

If refine-model (e.g., CALPUFF) predicted hourly SO₂ concentration at a receptor is above 450 ug/m³ for upset/start-up flares (those are non-routine flaring), we will conclude that there is an exceedance at the receptor.

Seagram, Annie ENV:EX 3:51 PM:

actually yes, that's more like what i'm asking about. but why are we using the 450ug/m³ threshold in that way?

Huang, Li ENV:EX 3:52 PM:

Because SO₂ CAAQs doesn't make sense for intermittent flaring events.

Huang, Li ENV:EX 3:53 PM:

We need to use an objective (based on absolute 1-hr max) to determine exceedance for short period flaring.

Huang, Li ENV:EX 3:53 PM:

That's why we still keep the use of the old national SO₂ level A standard.

Huang, Li ENV:EX 3:54 PM:

However, for routine and continuous flaring, we use SO₂ CAAQs to determine exceedances.

Seagram, Annie ENV:EX 3:54 PM:

but that threshold isn't based on human health risk the same way it is for AQO/CAAQS

Huang, Li ENV:EX 3:55 PM:

I know

Seagram, Annie ENV:EX 3:55 PM:

The wording of the guideline doesn't really make it clear that you can use the 450 threshold for things that AREN'T well testing, like you said.

Seagram, Annie ENV:EX 3:55 PM:

and it sounds like it's to help design modelling, not to help interpret the impacts.

Huang, Li ENV:EX 3:55 PM:

that's why Jerome and I are trying to develop a new short-term SO₂ objective for flaring

Seagram, Annie ENV:EX 3:55 PM:

but you're saying QPs do that anyway?

Seagram, Annie ENV:EX 3:55 PM:

:) RIGHT

Seagram, Annie ENV:EX 3:55 PM:

haha, i forgot.

Huang, Li ENV:EX 4:00 PM:

On the bottom of page 83 of the model guideline, there is wording regarding the use of 450 ug/m² for exceedance determination.

Seagram, Annie ENV:EX 4:02 PM:

i actually interpret that differently. I read it as generally being higher than the number, but not as a formal "exceedance"

Seagram, Annie ENV:EX 4:02 PM:

there is no information beforehand in the guideline that tells me why the 450ug/m³ is important, other than how to refine the model set up

Huang, Li ENV:EX 4:04 PM:

This flaring section is kind of confusing. I'll update it sometime next year.

Seagram, Annie ENV:EX 4:04 PM:

Yes, it would be great to keep these things in mind. I will check in with Ben to see how this has usually been used in other assessments.