



**FAQs on
Update of ESDM Reports due to MOECC's Adoption of Updated Air
Dispersion Model Versions on November 2, 2015**

**Presented to Air Practitioners' Full Group
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Rudolf Wan
Ministry of the Environment and Climate Change**

Background

- On November 2, 2015, MOECC adopted AERMOD and AERMET v. 14134 and ASHRAE 2011 as the regulatory versions of approved air dispersion models in O. Reg. 419/05 (EBR Registry 012-5177)
- Questions from air practitioners and regulated communities on impacts on ESDM reports update.
- ESDM reports have to be updated:
 - ✓ **Annually under Reg. 419/05 “so that the information in the report is as accurate as of December 31 in that year”;**
 - ✓ **Update under an ECA with LOF.**
 - ✓ **Source Testing results are higher than estimated in the Original ESDM Report**
 - ✓ **Aging equipment such that emissions are increased**
 - ✓ **Use of a different approved dispersion model under Reg. 419/05**
 - ✓ **Use of local met data**
 - ✓ **Registered under a Technical Standard**
 - ✓ **Other reasons e.g. order by MOECC local district office**
- Air Practitioners Working Group meeting on December 3, 2015 to develop FAQs.

Current Guidance

Current guidance in Procedure Document section 11.1 (ii):

“The ESDM Report must provide an indication of the likelihood and nature of any adverse effect that may be caused by a contaminant with no MOECC POI Limit. This may be addressed as follows:

(ii) If the ESDM Report is being prepared under sections 23 and 25 of the Regulation (419) ... If there is no value on the JSL List or the JSL is exceeded, then this can be dealt at the next available opportunity for MOECC review. The next review could occur as part of an application for a ECA, or if MOECC requests a copy of the ESDM report prepared under sections 23 or 25 of the Regulation.”

FAQs

Q1: My facility is subject to the requirements of section 19 of O.Reg.419/05. Am I affected by MOECC's adoption of updated air dispersion model versions?

A1: A facility that is subject to the requirements of section 19 and has used the Reg. 346 model to assess compliance is not affected by MOECC's adoption of the updated model versions. However, if it has an Environmental Compliance Approval (ECA) with Limited Operational Flexibility (LOF) in which an "older" version of AERMOD/AERMET is used to demonstrate compliance with Schedule 2 standards, and there is no valid s. 7 Notice to use the model versions, the updated model versions have to be used in the update of ESDM Report in 2016 as per the requirements in the ECA with LOF.

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Q2: When is a facility required to update its ESDM Report using the updated air dispersion model versions?

A2: A facility in Schedule 4 or 5 of Reg. 419/05 is required to update its ESDM Report by March 31, 2016 using the updated air dispersion model versions, unless you have a valid s. 7 Notice to use your current “older” model versions. A facility not in Schedule 4 or 5 that has an ECA with LOF is also required to update its ESDM Report at the time specified in the Approval, using the updated air dispersion model versions unless you have a valid s. 7 Notice to use the current “older” model versions.

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Q3: My facility is not a Schedule 4 or 5 facility of Reg. 419/05 and I do not have an ECA with LOF. I have a s. 20(4) Notice to use AERMOD to demonstrate compliance with Schedule 3 standards in O. Reg. 419/05 when I received my current ECA from the ministry and I do not have a valid s. 7 Notice to use my current version of AERMOD. Do I have to update my current ESDM Report using the updated air dispersion model versions?

A3: At present unless you are required by the ministry otherwise it is acceptable not to update your current ESDM Report using the updated air dispersion model versions. The ministry will review your ESDM Report when the next opportunity arises e.g. when an application for amendment to your current ECA has been submitted to the ministry or when you are required by the ministry to submit an ESDM Report. Your ESDM Report should use the air dispersion model versions most appropriate at that time.

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- Q4: My ESDM Report uses an “older” version of AERMOD/AERMET to assess compliance and do not have a valid s. 7 Notice to current the versions. My ECA is also one with LOF. I am planning to make a Modification before my next ESDM Report update. What should I do?
- A4: You are required to update your ESDM Report using the updated air dispersion model versions as per the requirements of your ECA with LOF or O. Reg. 419/05. It is acceptable for you to use the updated air dispersion model versions to assess just the Compound(s) of Concern of the Modification before the update.

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- Q5: (a) A Schedule 4 or 5 facility has an ECA without LOF and has to update its ESDM Report by March 31, 2016 using updated air dispersion model versions since there is no valid s. 7 Notice to use the current model versions. What are the procedures if this update revealed that the ministry's standards or guidelines or JSLs have been exceeded? (b) How would this differ if the ECA is one with LOF?
- A5: (a) If the update to the ESDM Report indicates that a contaminant has its new POI concentration less than its previously calculated value, there is no further assessment needed: document in the ESDM Report. If the update indicates that discharge of a contaminant may result in a contravention of section 20 (regulated standard) or that discharge of a contaminant may cause an adverse effect (e.g. guideline), notification to the ministry under section 28 of O. Reg. 419/05 is required. Once the notification is made, the facility is obligated to prepare and submit a written abatement plan within 30 days that recommends steps that would be taken to prevent and minimize discharges, as per section 29 of O. Reg. 419/05. Furthermore, section 30 of O. Reg. 419/05 sets out steps regarding exceedance of Upper Risk Thresholds (URTs). Immediate notification to the local District Office of the ministry is required followed by submission of an ESDM report for that contaminant within 3 months' time.

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If the update indicates that a contaminant has a new POI concentration higher than its previously calculated value and that contaminant has no value on the JSL List or its JSL is exceeded, in general this would not require notification to the Ministry and this can be dealt with at the next opportunity for MOECC's review i.e. as part of an application for an amendment to the ECA or when MOECC requests the submission of a copy of the ESDM Report. However, please note that Environmental Protection Act prohibits a person from discharging a contaminant or causing or permitting a discharge of a contaminant if the discharge causes or may cause an adverse effect.

- (b) If the ECA is one with LOF, the notification requirements above are the same for contaminants that have standards, guidelines or URTs. The process is different for contaminants that do not have standards, guidelines or a value on the JSL List or its JSL is exceeded, and is described in the next FAQ.

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Q6: A facility has an ECA with LOF and will update the ESDM Report using the updated air dispersion models as there is no a valid s. 7 Notice for the current model versions. If the update reveals exceedance of an Acceptable Point of Impingement Concentration (APOIC), what should the facility do?

A6: The process is the same if the facility is or is not a facility in Schedule 4 or 5 of O. Reg. 419/05. If a facility is re-modelling as a result of a Modification, then the updated AERMOD and AERMET versions should be used to assess the change in concentrations of the Compounds of Concern of the Modification. If the assessment indicates an exceedance of an APOIC, the procedures of Request for an APOIC in the ECA with LOF have to be followed.

If the facility is simply updating its ESDM Report as per the requirements of its ECA with LOF, and there is an increase of an APOIC due solely to the use of the updated dispersion model versions, the following process is proposed:

(a) If the increase is less than 5 times the original APOIC, this should be documented in the ESDM report and the ministry will review this change next time the ECA is reviewed e.g. ECA amendment or due to a Modification or required by the local office.

(b) If the increase is more than 5 times the original APOIC, this should be submitted to the ministry for review, following the same procedures of Request for an APOIC in the ECA with LOF for Modifications.

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The ministry will consider means to include these procedures in the ECAs with LOF issued.

Please note that the ministry may also request a copy of the ESDM Report as part of its abatement activities. This may also lead to an assessment of new APOIC levels.

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- Q7: What is required for the update of my ESDM Report? Do I have to replace the whole report with a new one? Or could I just prepare an addendum to the report documenting the changes to the report of last year and staple it to the original report? What would an MOECC environmental officer expect in his/her inspection?
- A7: The ministry requires a facility to update its ESDM Report annually “so that the information in the report is accurate as of December 31 in that year”. In the update, the facility should consider the changes that have occurred in the last year, which could include: a new standard or schedule of standards being phased-in, a new air dispersion model being used or model version, new POIs that need to be considered (e.g change in fence line or new receptors), new emission rates from e.g. source testing or aging equipment or process/operational changes at the facility. Typically these changes would require a new ESDM Report being generated. Copies of ESDM report updates must be kept on site for at least five years.
- In the case where nothing has changed at the facility or operational changes are minor in that they do not alter the maximum POI concentrations, the existing ESDM Report could simply be copied and re-dated to indicate that the required annual update was considered and that the ESDM report is up-to-date. A letter could be appended to the previous year’s report indicating that it is up-to-date. At minimum the addendum should include:

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- ✓ a clear indication that the update is for the applicable reporting year;
- ✓ date of update must be before March 31st of the year following the reporting year in order for facility to be compliant with section 25 of the Regulation, or the date specified in the ECA with LOF, whichever applicable;
- ✓ an indication that the production was not increased;
- ✓ indication that emissions have not increased (or have decreased) and the POI concentrations set out in referenced report reflect the maximum emissions and maximum POI concentrations resulting from the facility for the year in question;
- ✓ if emissions were reduced due to allowable changes under an ECA with LOF, a description of the changes and the revised emission rates.

There should be no more than four addenda to the ESDM Report before a whole new report is generated.

If the ESDM Report does not clearly indicate the compliance status of the facility, accurately reflect the operations at the site or document the changes that have occurred, the ministry could require a whole new ESDM Report to be generated. In addition, the ministry could request a whole new ESDM Report generated if there are concerns about emissions from the site or if the report will be audited by ministry staff.

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- Q8: For annual update of my ESDM Report, do I have to re-model all contaminants using the new AERMOD/AERMET since I do not have s. 7 Notice to use my current model versions? What if the POI concentrations of the contaminants in my ESDM are mostly small fractions of their respective ministry standards, guidelines or JSLs.
- A8: O. Reg. 419/05 requires some facilities to update their ESDM Reports on an annual basis “so that the information in the report is accurate as of December 31 in that year”. ECAs with LOF also may require a facility to update its ESDM Report on an annual basis. When a new model version is introduced, the ministry expects the facility to assess all the contaminants in its ESDM Report using the new model version. However, the ministry also recognizes the burden on the facility when there are a lot of contaminants in the facility’s emission inventory especially when the re-modelling is for contaminants with POI concentrations that were only fractions of their respective ministry standards or guidelines or JSL/APOICs. Therefore the ministry is prepared to accept alternative means of re-assessing POI concentrations for their ESDM Reports which use more recent versions of AERMOD/AERMET (i.e. AERMOD/AERMET version 12345 or later).

A facility may be able to propose and fully document a rationale for why facilities with POI concentrations that are well below the acceptable benchmark do not have to be re-modelled each time there is a change in the model versions. Examples of an acceptable rationale, for this round of updates, may include:

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- I have already modelled all the POIs using AERMOD/AERMET version 12345 or later and the expected changes in POI between this version and AERMOD/AERMET version 14134 are minimal.
- The current POI levels are very low (less than 10%), and hence I do not expect there to be any exceedence of ministry POI limit using the newer model versions.
- I re-modelled the key contributing sources and/or source groups with AERMOD/AERMET version 14134 for the contaminant(s) that are closest to the POI limits, and the remaining sources/source groups that were not modelled are all similar in nature to the key contributors. The re-modelling shows that if the percent changes to the maximum POI concentrations for the modelled contaminants are applied to the maximum POI concentrations for the remaining, un-modelled contaminants, the remaining contaminants are very likely to be well below their respective POI Limits. (Note that the complete rationale, including an assessment of the source types and characteristics will be required to be provided if this approach is to be used.)

However, if a facility is modelling using any AERMOD/AERMET version that predates AERMOD/AERMET version 12345, and there is no valid s. 7 Notice for use of the current version, the ministry recommends re-modeling POI concentrations as soon as practicable.

Thank you!

Questions?