

Texas Natural Resource Conservation Commission

INTEROFFICE MEMORANDUM

TO: NSRPD Technical Staff **DATE:** September 4, 1998
FROM: Dom Ruggeri, Team Leader
Air Dispersion Modeling Team (ADMT)
SUBJECT: Modeling Request Guidance (Supersedes May 15, 1996 document)

Air dispersion modeling is a tool used to predict concentrations from sources of air pollution. Staff should use this memo as a guide to determine when to request modeling support.

Background: The authority to conduct air dispersion modeling is contained in 30 TAC 116. The *Modeling and Effects Review Applicability* technical guidance package (RG-324) outlines procedures for effects reviews. The need to conduct modeling for other permit types is left to the judgement of the permit engineer—except in cases for which modeling is mandatory, such as modeling for sources that trigger Prevention of Significant Deterioration (PSD) review.

There are two levels of modeling: screening and refined. Either type may be used, as appropriate, to meet the modeling requirement. Usually, if a source passes a screening modeling analysis further refined modeling should not be required. That is, the source does not exceed a TNRCC de minimis level, or satisfies Steps 9a and 9b or 11 of RG-324, or TARA does not request additional information for their technical review.

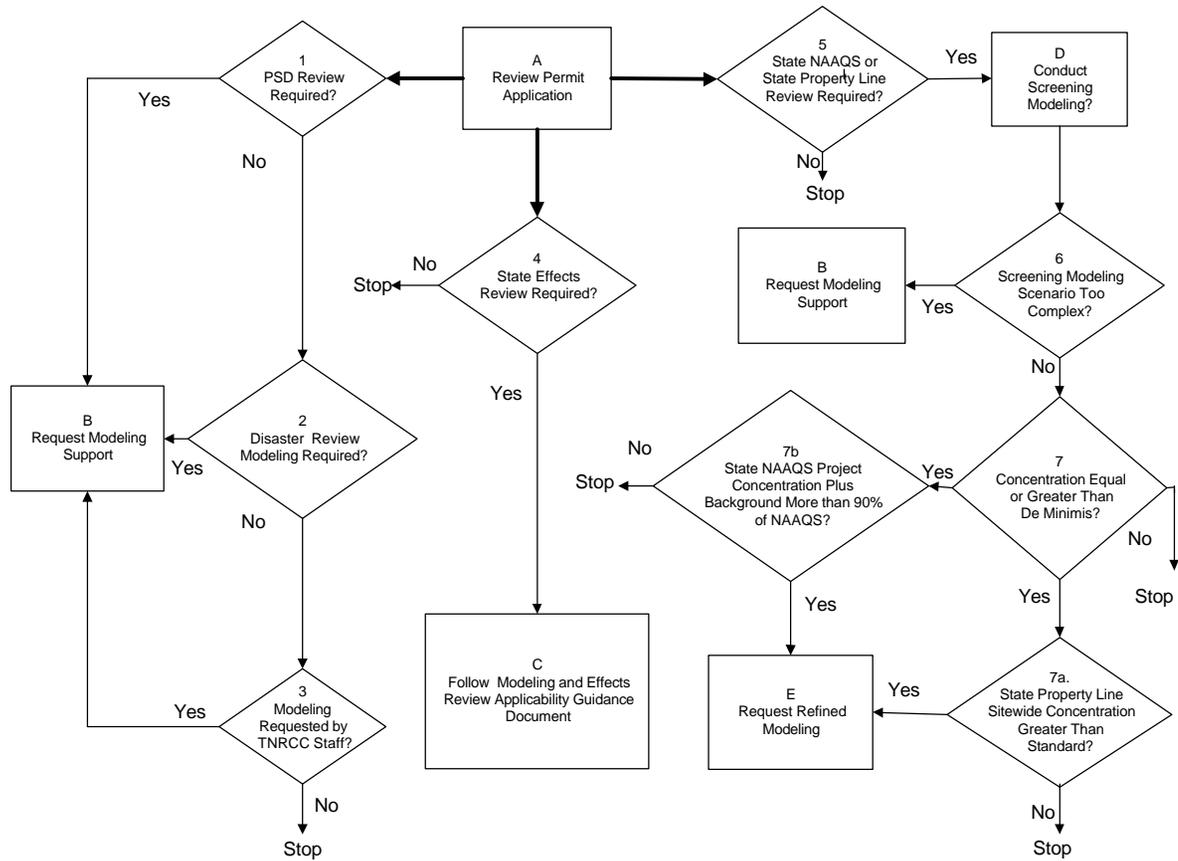
Procedure:

- Determine the type(s) of technical review required.
- Use the Modeling Request Flow Chart to determine if modeling is required. The flow chart is a guide, you do not need to accomplish all the steps to request modeling.
- Use a screening background concentration or a representative monitored concentration to determine potential impacts for State NAAQS review¹. Coordinate alternate procedures with the ADMT on a case-by-case basis.
- If modeling is required, send a letter to the applicant requesting that the applicant conduct the applicable modeling or send a modeling request to ADMT, as appropriate.

Attachments

¹ Use the Screening Background Concentration and Background Concentration Determination for Use in NAAQS Analyses memos.

Modeling Request Flow Chart



Following are explanatory notes for the boxes contained in the Modeling Request Process Flow Chart:

Box A. Review Permit Application. The engineer is the focal point of the permitting process and determines the need for air dispersion modeling.

Box 1. PSD Review Required? The engineer determines if PSD review is required.

Box 2. Disaster Review Modeling Required? The applicant develops reasonable worst-case scenarios; the permit engineer evaluates them. See Appendix F of Form PI-1, Air Quality Permit Application Instructions. Modeling may be required if appropriate preventative measures are not taken for certain contaminants; or, if an applicant disputes that reasonable worst-case release will cause adverse off-property effects.

Box 3. Modeling Requested by TNRCC Staff? Legal or TARA may request that modeling be conducted to assist them in preparation for a hearing, to assist in the routine technical review process, or to complete Commission-directed projects.

Box B. Request Modeling Support Box. The engineer should request that the applicant or ADMT conduct screening or refined modeling, as appropriate.

Box 4. State Effects Review Required? An effects review may be required for the constituents included in the permit.

Box C. Follow Modeling and Effects Review Applicability Guidance Document. Follow the flow chart in the *Modeling and Effects Review Applicability* guidance package.

Box 5. State NAAQS or State Property Line Review Required? The engineer determines if a State NAAQS or State Property Line Review (30 TAC 111 or 30 TAC 112) is required.

Box D. Conduct Screening Modeling. Engineers should follow applicable screening modeling procedures and use the latest version of EPA's SCREEN model.

Box 6. Screening Modeling Scenario Too Complex? After determining the type of review required (State NAAQS or State Property Line), engineers decide if they have the expertise to conduct screening modeling. Some factors to consider: Can you obtain or develop screening modeling input parameters? Can the sources be modeled adequately using screening techniques?

This determination is made on a case-by-case basis. Key factors usually considered are the complexity of the project (more than one source, mix of point and fugitive sources, high and low stacks, number of contaminants, downwash structures, and amount of emissions, etc).

Box 7. Concentration Greater Than De Minimis? If the predicted concentration is greater than the de minimis for the contaminant, additional analysis is required. If the concentration is below the de minimis for the contaminant, the modeling demonstration is complete.

Box 7a. State Property Line Sitewide Concentration Greater Than Standard. If the project consists of a single source, or you use a screening technique to model all sources and the predicted concentration is less than or equal to the regulation standard, the modeling demonstration is complete. If not, a refined modeling analysis is suggested.

Box 7b. State NAAQS Project Concentration Plus Background 90% of the NAAQS? If the predicted concentration from the project plus a background concentration is 90 percent or less of the NAAQS for the contaminant, the modeling demonstration is complete. If not, a refined modeling analysis is suggested.

Box E. Request Refined Modeling Box. If screening modeling concentrations are too high, a refined modeling analysis is suggested.