

Appendix C
Modeling Scenario Examples

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[These first 8 examples are an attempt to directly match the 8 scenarios in the guidance]

Scenario 1 (*Minor SER Greenfield*):

Applicant proposes to construct a new stationary source at a Greenfield site. Potential criteria pollutant emissions associated with the new source are less than the applicable SERs. Therefore, the requirement to submit a demonstration would not typically be applicable to the project, and the criteria in Tables 1-3 would not apply.

Scenario 2 (*Minor SER Modification*):

Facility X is currently classified as an existing minor source. The facility proposes to add a new fuel for an existing boiler at the facility. Facility-wide pre-project allowable emissions of those criteria pollutants that are affected by the modification are below the applicable SERs. The new fuel is lower emitting for all pollutants on a short term and annual basis, and post-project facility-wide allowable criteria pollutant emissions for those pollutants affected by the modification remain below the applicable SERs. Therefore, the requirement to submit a demonstration would not typically be applicable to the project, and the criteria in Tables 1-3 would not apply.

Scenario 3 (*Minor SER Modification of Non-Major Pollutant*):

Facility X is currently classified as an existing major source because allowable VOC emissions are above the major source threshold. Facility-wide pre-project allowable emissions of all other criteria pollutants are below the applicable SERs. The facility proposes to install a new coating line that includes a gas-fired drying oven. With the exception of VOCs, post-project allowable emissions for all criteria pollutants from the facility remain below the applicable SERs. Under this scenario, the applicant is not required to meet either the applicable Table 1 through 3 requirements or submit a demonstration for any of the criteria pollutants associated with the project, as VOC emissions are not typically subject to modeling requirements and allowable emissions of all other criteria pollutants remain less than the SERs.

Scenario 4 (*Minor SER Modification at an Existing Minor Source*):

Facility X is currently classified as an existing minor source. Facility-wide pre-project allowable emissions of all criteria pollutants are below the applicable SERs. The facility proposes to install a new natural gas-fired boiler. The new boiler has a potential to emit criteria pollutants less than the applicable SERs. However, post-project facility-wide emissions of NO_x will now be above the SERs (though less than the major source threshold). Under this scenario, the applicant must either meet the applicable Table 1 through 3 requirements or submit a demonstration for NO_x. Modeling of those criteria pollutants whose project emissions are less than the SERs would not typically be required.

Scenario 5 (*Minor SER Modification at an Existing Minor Source*):

Facility X, which is an engine test cell facility, is currently classified as an existing minor source. The facility proposes to install a new engine test cell. Facility-wide pre-project allowable emissions of all criteria pollutants that may be emitted from engine test cells are above the applicable SERs. The emissions increase of one or more criteria pollutants associated with the project are greater than the applicable SERs. Under this scenario, the applicant must submit a

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demonstration for those criteria pollutants whose project emissions are greater than the SERs. Modeling of those criteria pollutants whose project emissions are less than the SERs would not typically be required.

Scenario 6 (*Minor SER Modification at an Existing Minor Source*):

Facility X is currently classified as an existing minor source with allowable NO_x emissions of 249 tons per year. The facility proposes to install a new natural gas-fired boiler that will have a potential to emit NO_x less than the SER (40 tons per year). The resultant facility-wide potential to emit NO_x is now above the major source threshold. Though the project is not subject to PSD review, the applicant must either meet the applicable Table 1 through 3 requirements or submit a demonstration for NO_x and any other criteria pollutants for which post-project facility-wide emissions are now greater than the SERs. Modeling of those criteria pollutants whose post-project facility-wide emissions remain less than the SERs would not typically be required.

Scenario 7 (*Minor SER Modification at an Existing Major Source*):

Facility X is currently classified as an existing major source with allowable VOC emissions above the major source threshold (250 tons per year) and allowable emissions of all other criteria pollutants below the applicable SERs. The facility proposes to install a new coating line that includes a gas-fired drying oven. With the exception of VOCs and NO_x, facility-wide post-project allowable emissions of all criteria pollutants remain below the SERs. Under this scenario, the applicant must either meet the applicable Table 1 through 3 requirements or submit a demonstration for NO_x emissions. Modeling of those criteria pollutants whose post-project facility-wide emissions remain less than the SERs would not typically be required.

Scenario 8 (*Minor SER Modification at an Existing Major Source*):

Facility X, which is comprised of various pieces of process equipment including fuel oil-fired boilers, is classified as an existing major source with allowable SO₂ and NO_x emissions above the major source threshold (250 tons per year). The facility proposes to install one new natural gas-fired boiler and retire all existing fuel oil-fired boilers as part of the project. Potential criteria pollutant emissions of all criteria pollutants (including NO_x) due to the project are less than the applicable SERs. Under this scenario, the applicant must either meet the applicable Table 1 through 3 requirements or submit a demonstration for NO_x emissions.

[Some additional examples]

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Scenario 9:

This scenario is in relation to footnote 1a in Tables 1 and 3

Facility X is classified as an existing major source. Pre-project facility-wide allowable criteria pollutant emissions are all above the applicable SERs. The facility proposes to install five pieces of equipment – four (4) boilers and one (1) space heater. Potential NO_x emissions from all five pieces of equipment are 30 tons per year. The four boilers contribute 25 tons of the total 30 tons and meet the stack requirements identified in the table(s). The space heater contributes 5 tons to the project emissions but does not meet the stack requirements identified in the table(s). However, because the space heater alone generates less than 20% of the total project emissions, the project is still deemed to meet the Table 1 through 3 requirements and there is no need to submit a demonstration for the space heater.

Scenario 10:

This scenario is in relation to footnote 1b in Tables 1 and 3

Facility X is currently classified as an existing major source. Pre-project facility-wide allowable criteria pollutant emissions are all above the applicable SERs. The facility proposes to install a diesel-fired emergency engine that will operate on an intermittent basis, and the potential to emit for all criteria pollutants from the engine are less than the applicable SERs. In accordance with Footnote 1b of Tables 1 and 3, the requirement to meet either the Table 1 or 3 requirements or submit a demonstration is not applicable to the emergency engine.

Scenario 11:

Facility X is currently classified as an existing major source. Pre-project facility-wide allowable criteria pollutant emissions are all above the applicable SERs. The facility proposes to install emissions controls on three existing boilers, and the post-project allowable criteria pollutant emissions from the boilers will remain greater than the SERs. The project is not subject to PSD review because there is no net emissions increase for the project. While the emission controls will result in emission reductions, the controls are expected to lower flue gas temperatures and entail additional material handling operations at the facility. Under this scenario, a demonstration is required because the allowable emissions from the existing boilers and new material handling operations are greater than the one or more of the SERs.

Scenario 12:

Facility X is currently classified as an existing major source. Pre-project facility-wide allowable criteria pollutant emissions are all above the applicable SERs. The facility proposes to add a new fuel to an existing boiler, and the allowable emissions for the boiler (which aren't increasing as part of the project) are greater than the SER for NO_x. The new fuel is lower emitting for all pollutants on a short term and annual basis. All of the stack parameters remain the same for the emission unit, and no new standards have been promulgated. Under this scenario, a

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demonstration for NO_x is required as the allowable NO_x emissions for the boiler are greater than the SER.

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