

SUMMARY of CHANGES to MERA

March 2008

Steps	Step Summary	Comments/Notes/Reasons for Change
Step 1	Overall, this step is limited to non-APWL areas with no increase in short-term (ST) emissions but there may be limited increases in annual emissions.	
	1A Decrease in annual emissions with no increase in ST emissions from any emission point.	No change. The current MERA Step 1 becomes Step 1A.
	1B Allow for total annual emission increases ≤ 10 percent of the current authorized annual emissions for the EPNs with the annual emission rate increases. Only consider annual emission rate increases (no decreases), and there can be no increases for short-term emission rates per EPN.	This idea comes from Straw Man Proposal 4. Also, the current MERA deals mainly with a change in ST rate except for constituents with long-term ESLs $< 10\%$ of short-term ESLs. Further, it was also brought up in the February 2007 stakeholder meeting that in certain cases, MSS emissions may only add to the annual, not hourly authorized emission rate. Case-by-case impact review will be conducted by APD to ensure protection of public health and welfare.
	1C No overall net increase in both ST and annual (long-term, LT) emissions even though the individual emission point ST and annual emission rate can vary from current permitted emissions.	Concept comes from Straw Man Proposal 4. It provides operational flexibility by allowing the movement of emissions from one emission point number (EPN) to another without adding additional emissions into the air. Case-by-case impact review will be conducted by APD to ensure protection of public health and welfare.
Step 2	<p>Toxicology Emissions Screening List: Certain type of emissions, activities, facilities do not require a health effects review if they appear on this list.</p> <p>(1) Added emissions of PM, except for metals and silica, from surface coating operations if properly controlled to this list.</p>	<p>(1) Concept comes from Straw Man Proposal, Flowchart item 7 (page 11). Based on permit reviews conducted by the Coatings Team, PM emitted from indoor painting/surface coating and when properly controlled, (captured, abated with filters/water wash system, and discharged vertically with no obstruction to flow) generally show no problems. Coating particulates such as metals and silica may pose problems because of their low ESL values, thus, they cannot be screened out. $PM \leq 10\mu m$ in size must still meet NAAQS.</p>

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Step 3	<p>This step applies to APWL constituents/areas. Toxicology Section will designate APWL area/constituents.</p> <p>For non-APWL constituents, proceed to Step 4.</p>	<p>Concept comes from Straw Man Proposal, Flowchart item 2 and TCEQ staff.</p> <p>This step allows for small increase ($\leq 1\%$ of reductions) coupled with large decrease ($\geq 30\%$ within the last five years from the received date of this project). The main goal of this step is to clean up the APWL area and in order to do this, more emissions would have to be removed from the APWL area than added to it. Also, any emission reductions resulted from enforcement action cannot be used (counted toward the 30%) to offset the small increase.</p>
Step 4	<p>This step applies for projects with a limited (de minimis) increase in emissions without going through a full health effects review.</p>	
4A	<p>This step asks the question whether planned MSS and other unevaluated emissions occur at the same time as production.</p>	
4B	<p>For planned MSS and other unevaluated emissions NOT occurring at the same time as production, with emissions of ≤ 0.1 lb/hr and $ESL \geq 2 \mu\text{g}/\text{m}^3$.</p>	<p>Concept comes from Straw Man Proposal 3a. Since planned MSS emissions would not be occurring at the same time as production emissions, APD proposes a higher rate than 0.04 lb/hr, the rate currently used to screen out small increase in the current MERA process.</p> <p>The rate of 0.1 lb/hr is basically double 0.04 lb/hr and rounded to the nearest significant digit. This higher rate is being proposed because planned MSS activities occur on a much less frequent basis than production.</p>
4C	<p>For planned MSS and other unevaluated emissions which occur at the same time as production, allow for several de minimis levels depending on the ESL of a constituent.</p> <p>$\geq 2 \mu\text{g}/\text{m}^3 < 500 \mu\text{g}/\text{m}^3$ & ≤ 0.04 lb/hr</p> <p>$\geq 500 \mu\text{g}/\text{m}^3 < 3500 \mu\text{g}/\text{m}^3$ & ≤ 0.1 lb/hr</p> <p>$\geq 3500 \mu\text{g}/\text{m}^3$ & ≤ 0.4 lb/hr</p>	<p>Concept comes from Straw Man Proposal, Flowchart item 8. Basically this step allows for higher emission rates to be screened out with corresponding higher short-term ESL values as long as the annual ESL is ≥ 10 percent of the short-term ESL. Otherwise, APD review is required.</p> <p>An increase in an emission rate for a compound with a low ESL results in a higher percent change in impacts when compared to the same increase in emission rate for a compound with a higher ESL (Ex. A 0.1 lb/hr increase in emissions would result in a higher percent change in impact for a compound with an ESL of $2 \mu\text{g}/\text{m}^3$ vs. a change in impact for a compound with an ESL of $2,000 \mu\text{g}/\text{m}^3$).</p>
4D	<p>Project increase ≤ 0.04 lb/hr and $ESL < 2 \mu\text{g}/\text{m}^3$</p>	<p>Current MERA step 4B becomes 4D. Also, the review will be performed on a case-by-case basis by APD rather than TCEQ Toxicology Section.</p>

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Steps	Step Summary	Comments/Notes/Reasons for Change
Step 5	This step provides look up tables as an alternative to screen modeling.	Concept comes from Straw Man Proposal, Flowchart item 10. This step doubles the look up tables from 2 to 4. Also, the new tables will include more distances (up to 5000ft from 3000ft), taller stacks (up to GEP of 200 ft from 60ft), and emissions during the day time and all hours. These tables would also allow for interpolation between stack heights and distances.
Step 6	No change	
Step 7	Overall this step deals with annual emission reductions coupled with limited short-term emission increases of the same constituent.	APD staff proposes to: combine annual reduction options and limit hourly increase.
7A	Total annual project reductions to increases must be $\geq 5:1$ AND must meet 7B in order to go to Step 12.	The current reductions to increases of 6:1 and 4:1 (with D > 500 ft) options are being combined into 5:1. This helps streamlining the process since staff seldom sees the 4:1 option being used.
7B	Total short-term increases must be $\leq 10\%$ of the current permitted short-term emissions.	In the past, just because there is a large annual reduction as compared to increases, there can be an increase in hourly emissions. To minimize a potential problem linked to large hourly increases, a maximum of up to no more than a 10% increase is being proposed by APD staff to ensure that an hourly increase is not too excessive just because a large decrease in annual emissions has occurred.
7C	No change	
Step 8	In this step, all new and increased emissions, or proposed permit allowable emissions, will be modeled.	This step resulted from the workgroup meeting on June 25, 2007.
8A	This step must be used if the constituent is new or may be used for an existing constituent (constituent that appears in the Maximum Allowable Emission Rate Table (MAERT) for this permit). The applicant must model the new and increased emissions for planned MSS or Production scenarios separately	No change. The current MERA Step 8 becomes Step 8A. Only new and increased emission rates are modeled in this step.
8B	The step may be used for existing constituents (constituent that appears in the MAERT for this permit). The applicant must model the permit wide proposed emissions (existing emissions plus project emissions) for planned MSS or Production scenarios separately.	This step resulted from the workgroup meeting on June 25, 2007. All allowable emission rates for the permit (proposed new MAERT) are modeled in this step.

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Step 9	<p>Results from Step 8 are used in this step to determine if sitewide modeling is needed.</p> <p>Removed baseline date of August 12, 1993.</p>	<p>This step is being revised to include magnitude and frequency criteria for planned MSS emissions.</p> <p>Baseline date was removed since this is no longer needed since flowchart process has existed for many years.</p>				
9A	<p>This step must be used if the constituent is new or may be used for an existing constituent (constituent that appears in the MAERT for this permit). If the project includes both planned MSS and Production, the modeling results at the GLCmax should be evaluated individually against the following table.</p> <table border="1"> <thead> <tr> <th>Planned MSS only</th> <th>Production only</th> </tr> </thead> <tbody> <tr> <td> <p>≤ 25% ESL AND ≤ 50% ESL from all new and increased planned MSS emissions since the most recent sitewide modeling</p> </td> <td> <p>≤ 10% ESL per project AND ≤ 25% ESL from all new and increased emissions since the most recent sitewide modeling</p> </td> </tr> </tbody> </table> <p>For planned MSS only, if concentrations exceed thresholds above, proceed to Step 9C.</p>	Planned MSS only	Production only	<p>≤ 25% ESL AND ≤ 50% ESL from all new and increased planned MSS emissions since the most recent sitewide modeling</p>	<p>≤ 10% ESL per project AND ≤ 25% ESL from all new and increased emissions since the most recent sitewide modeling</p>	<p>Concept comes from Straw Man Proposal 3B at February 2007 meeting, the workgroup meeting from June 25, 2007, and APD staff. Both higher magnitude and frequency of exceedance are being proposed because planned MSS tend to occur on a less frequent basis than production.</p>
Planned MSS only	Production only					
<p>≤ 25% ESL AND ≤ 50% ESL from all new and increased planned MSS emissions since the most recent sitewide modeling</p>	<p>≤ 10% ESL per project AND ≤ 25% ESL from all new and increased emissions since the most recent sitewide modeling</p>					
9B	<p>The step may be used for existing constituents (constituent that appears in the MAERT for this permit). The applicant must model the permit wide proposed emissions (existing emissions plus project emissions) for planned MSS or Production scenarios separately. If the project includes both planned MSS and Production, the modeling results at the GLCmax should be evaluated individually against the following table.</p> <table border="1"> <thead> <tr> <th>Planned MSS only</th> <th>Production only</th> </tr> </thead> <tbody> <tr> <td> <p>≤ 50% ESL AND ≤ ESL from all new and increased planned MSS emissions since the most recent sitewide modeling</p> </td> <td> <p>≤ 20% ESL for the permit AND ≤ 50% ESL from all new and increased emissions since the most recent sitewide modeling</p> </td> </tr> </tbody> </table> <p>For planned MSS only, if concentrations exceed thresholds above, proceed to Step 9D.</p>	Planned MSS only	Production only	<p>≤ 50% ESL AND ≤ ESL from all new and increased planned MSS emissions since the most recent sitewide modeling</p>	<p>≤ 20% ESL for the permit AND ≤ 50% ESL from all new and increased emissions since the most recent sitewide modeling</p>	<p>Concept comes the workgroup meeting from June 25, 2007 and APD staff.</p>
Planned MSS only	Production only					
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Steps	Step Summary	Comments/Notes/Reasons for Change								
9C	<p>Projects with the following constituents may not use Step 9C: Acrolein, Acrylonitrile, Benzene, Bromine, 1,3-butadiene, Carbon disulfide, Chlorine, Chloroform, Chloroprene, Epichlorohydrin, Fluorine, Formaldehyde, HCl, HF, Hydrazine, Mercaptans, Methyl bromide, MDI, Phosgene, Phosphine, Styrene, and TDI Use the current ESL list for the thresholds specified below:</p> <table border="1"> <thead> <tr> <th>Planned MSS only</th> </tr> </thead> <tbody> <tr> <td>≤ 24 hours at 1 X ESL</td> </tr> <tr> <td>AND</td> </tr> <tr> <td>≤ 12 hours at 2 X ESL</td> </tr> <tr> <td>AND</td> </tr> <tr> <td>≤ 6 hours at 4 X ESL</td> </tr> <tr> <td>AND</td> </tr> <tr> <td>1 hour at 10 X ESL</td> </tr> </tbody> </table>	Planned MSS only	≤ 24 hours at 1 X ESL	AND	≤ 12 hours at 2 X ESL	AND	≤ 6 hours at 4 X ESL	AND	1 hour at 10 X ESL	<p>Constituents excluded from this step are listed in Appendix B, and will be revised as needed.</p> <p>The most recent ESL list can be found on the TCEQ Toxicology website and the MERA document will link to this list (similar to current link to APWL area, Step 3).</p>
Planned MSS only										
≤ 24 hours at 1 X ESL										
AND										
≤ 12 hours at 2 X ESL										
AND										
≤ 6 hours at 4 X ESL										
AND										
1 hour at 10 X ESL										
9D	<p>Projects with the following contaminants may not use Step 9D: Acrolein, Acrylonitrile, Benzene, Bromine, 1,3-butadiene, Carbon disulfide, Chlorine, Chloroform, Chloroprene, Epichlorohydrin, Fluorine, Formaldehyde, HCl, HF, Hydrazine, Mercaptans, Methyl bromide, MDI, Phosgene, Phosphine, Styrene, and TDI Use the current ESL list for the thresholds specified below:</p> <table border="1"> <thead> <tr> <th>Planned MSS only</th> </tr> </thead> <tbody> <tr> <td>≤ 48 hours at 1XESL</td> </tr> <tr> <td>AND</td> </tr> <tr> <td>≤ 24 hours at 2 X ESL</td> </tr> <tr> <td>AND</td> </tr> <tr> <td>≤ 12 hours at 4 X ESL</td> </tr> <tr> <td>AND</td> </tr> <tr> <td>≤ 2 hours at 10 X ESL</td> </tr> </tbody> </table>	Planned MSS only	≤ 48 hours at 1XESL	AND	≤ 24 hours at 2 X ESL	AND	≤ 12 hours at 4 X ESL	AND	≤ 2 hours at 10 X ESL	<p>Constituents excluded from this step are listed in Appendix B, and will be revised as needed.</p> <p>The most recent ESL list can be found on the TCEQ Toxicology website and the MERA document will link to this list (similar to current link to APWL area, Step 3).</p>
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≤ 48 hours at 1XESL										
AND										
≤ 24 hours at 2 X ESL										
AND										
≤ 12 hours at 4 X ESL										
AND										
≤ 2 hours at 10 X ESL										
Step 10	<p>Clarification that ratio test should be applied for combined planned MSS and Production emissions and impacts.</p>	<p>Concept comes from APD staff. Ensures that both planned MSS and Production emissions and their impacts are appropriately protective.</p>								
Step 11	<p>No change</p>									
Step 12	<p>No change</p>									