

Draft REC Regulation REC-09-02

EMA Comments

18.01.2012

NOx Control Measures

- *Type III and IV* retrofit emission control devices are intended to control NOx emissions
- To comply with the NOx limits for Reduction level 1 and 2 reagents may be required
- Without effective control measures frequent tampering can be expected

NOx Control Measures

- REC 09 - 02:
 - In § 8.6 limited requirements for NOx control such as reagent quality, dosing requirements and freezing protection
 - The lack of sensors and inducement measures represent a “cheap” solution compared with the comprehensive type certification

NOx Control Measures

- R 96 § 5.3.3 :
 - Requirements to ensure correct operation of NOx control measures by means of a reagent quality sensor, NOx sensor or any equivalent component

NOx Control Measures

- Amendments of 97/68/EC :
 - Comprehensive requirements for NOx control including provisions against tampering and an inducement system as described in Annex XVI

NOx Control Measures

- EMA / EPA SCR guidance
 - This guidance include a warning that if a problem exists and $\text{NO}_x > \text{NTE}$ then a light inducement would be activated followed by a severe inducement

NOx Control Measures

- EURO VI:
 - This regulation is the origin of other sophisticated NOx control system
 - It requires a NOx sensor, which actuates operator warnings if NOx > 900 mg/kWh or the filling volume in the reagent tank is < 26 %
 - If no actions occur the light and heavy inducement system will be initiated

NOx Control Measures

- EMA proposal for Type III and IV NRMM retrofit emission control devices :
 - Add provisions for the detection of NOx control malfunctions
 - Add requirements for an inducement system similar to R 96

PM Number emissions requirements for NRMM in REC 09 - 02

- Type I, Type II and Type IV REC approved to PM Reduction Level 2 shall provide a reduction efficiency for PM number of at least [97]% from the engine baseline emissions
- No national requirements other than the Swiss LRV Ordinance exist, even R 96 requires only max. PM mass concentrations

PM Number emissions requirements for NRMM in REC 09 - 02

- Test procedure: The Swiss requirements are based on steady state test cycles while REC 09-02 refers to NRTC
- If PM Number requirements would be introduced in REC 09 then all certified retrofit systems would have to be tested again

PM Number emissions requirements for NRMM in REC 09 - 02

- Most of the existing DPF's using wall flow filter characteristics would reduce the PM Number emissions as well when meeting the PM mass limits
- Recommendation:
 - Delete or delay the PM Number requirements and/or
 - Introduce the Swiss LRV as alternate compliance method in an Annex