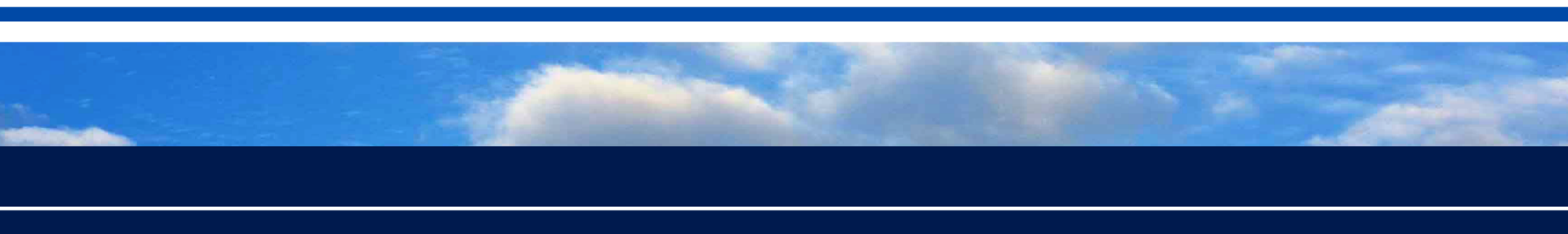


# **MRR 2020: Requirement for procedures in the monitoring plan**

Alex Pijnenburg – Dutch emissions Authority



# MRR- requirements

Article 12(2) MRR: operators are required to summarize the procedures in the monitoring plan

All procedures which are referred to in annex-I

Title of procedure	
Reference for procedure	
Diagram reference (w here	
Brief description of procedure	
Post or department responsible for the procedure and for any data	
Location w here records are kept	
Name of IT system used (w here applicable).	
List of EN or other standards applied (w here relevant)	

- 1(b) Managing assignments, responsibilities
- 1(c) Evaluation monitoring plan's appropriateness
- 1(d) Data flow activities
- 1(e) Control activities
- 2(e) Analysis
- 2(f) Sampling (underpinning and appropriateness)
- 3 Fall Back
- 4 Measurement methodologies
- ....

## Experiences

Assessing and approving brief description by competent authority before permitting has limited added value:

- Brief description is often repetition of the requirements.
  - Brief description is often general and does not enable CA to assess if procedures meets requirements in detail and is implemented.
- Full assessment of procedures is done afterwards (on site document review by verifier/inspector).
- Details of procedures can sometimes be important for determining emissions: need for approval by competent authority

## Brief description:

## Legislation:

(c) Please provide details about the procedures used to ensure quality assurance of measuring equipment in accordance with Article 58 and 59 of the MRR.

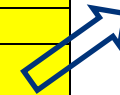
*The brief description should identify how all relevant measurement equipment is calibrated and checked at regular intervals, if applicable, and how non-compliance with the required performance is dealt with.*

Title of procedure	ETS
Reference for procedure	2.1
Diagram reference	
Brief description of procedure	<p>The maintenance manager keeps a list of all measurement equipment and ensures that all relevant measurement equipment is calibrated, adjusted and checked at regular intervals, in accordance with the risks which are identified</p> <p>Measurement equipment is checked against international measurement standards according to the MRR. Measurement systems which cannot be calibrated will be identified</p> <p>When the equipment is found to not to comply with required performance, the operation manager shall promptly take all necessary corrective actions</p>
Post or department responsible for the	Maintenance department
Location where records are kept	Maintenance department
Name of IT system used (where applicable).	Excel
List of EN or other standards applied	

Article 59

### Quality assurance

1. For the purposes of point (a) of Article 58(3), the operator or aircraft operator shall ensure that all relevant measuring equipment is calibrated, adjusted and checked at regular intervals including prior to use, and checked against measurement standards traceable to international measurement standards, where available, in accordance with the requirements of this Regulation and proportionate to the risks identified.



Where components of the measuring systems cannot be calibrated, the operator or aircraft operator shall identify those in the monitoring plan and propose alternative control activities.

When the equipment is found not to comply with required performance, the operator or aircraft operator shall promptly take necessary corrective action.

Repetition of requirements useful?

# Suggested improvement two levels of description in MP

Requirements for monitoring system

## Procedures with monitoring methods

Definition of calculations, criteria, relevant data handling which are used to determine the emission figures.

Need for complete and transparent documentation in MP:

$$\widehat{EF} = \hat{\beta}_0 + \hat{\beta}_1 \frac{\sum B_j D_j}{\sum B_j}$$

$$EF - \widehat{EF} = \beta_0 - \hat{\beta}_0 + (\beta_1 - \hat{\beta}_1) \frac{\sum B_j D_j}{\sum B_j} + \frac{\sum B_j Z_j}{\sum B_j}$$

Hieruit volgt dat

$$\frac{EF - \widehat{EF}}{\hat{\sigma}} = \frac{\frac{1}{\hat{\sigma}} (\beta_0 - \hat{\beta}_0 + (\beta_1 - \hat{\beta}_1) \sum w_j D_j) + \frac{1}{\hat{\sigma}} \sum w_j Z_j}{\sqrt{\frac{(n-2)\hat{\sigma}^2/\sigma^2}{n-2}}}, \quad w_j = \frac{B_j}{\sum B_j}$$

## (Additional) Procedures

Part of the management system aimed to describe the way the operator has organized the monitoring system and risk mitigation

No need for description of details in MP



# two levels of description in MP: requirements

## Requirements for monitoring system

```
graph TD; A[Requirements for monitoring system] --> B[Procedures with monitoring methods]; A --> C["Additional Procedures"];
```

### Procedures with monitoring methods

- ✓ Requirements in MRR
- ✓ Methods always documented in detail in MP
- ✓ Methods checked and approved by CA
- ✓ Implementation checked by verifier/inspector.

### "Additional Procedures"

- ✓ Requirements in MRR
- ✓ Documented in **Operator Management System**
- ✓ **Appropriateness checked in an "on site" document review by verifier/inspector**
- ✓ Implementation checked by verifier/inspector.

# two levels of description in MP: **examples**

Requirements for monitoring system

```
graph TD; A[Requirements for monitoring system] --> B[Procedures with monitoring methods]; A --> C["Additional Procedures"];
```

## **Procedures with monitoring methods**

- Data flow: calculations and data handling
- CEMS: calculations
- Fall Back: calculations
- Criteria and calculations for validation of data
- Sampling plan

## **“Additional Procedures”**

- Managing assignments and responsibilities
- Evaluation monitoring plan’s appropriateness
- Data flow activities: tasks and responsibilities
- Most control activities
- Evaluation of sampling plan

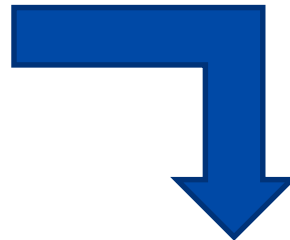
# Alternative to keep operators aware:

## Replace request of details procedure with "Tick box" approach

(c) Please provide details about the procedures used to ensure quality assurance of measuring equipment in accordance with Article 58 and 59 of the MRR.

*The brief description should identify how all relevant measurement equipment is calibrated and checked at regular intervals, if applicable, and how non-compliance with the required performance is dealt with.*

Title of procedure	ETS
Reference for procedure	2.1
Diagram reference	
Brief description of procedure	<p>The maintenance manager keeps a list of all measurement equipment and ensures that all relevant measurement equipment is calibrated, adjusted and checked at regular intervals, in accordance with the risks which are identified</p> <p>Measurement equipment is checked against international measurement standards according to the MRR. Measurement systems which cannot be calibrated will be identified</p> <p>When the equipment is found not to comply with required performance, the operation manager shall promptly take all necessary corrective actions</p>
Post or department responsible for the	Maintenance department
Location where records are kept	Maintenance department
Name of IT system used (where applicable).	Excel
List of EN or other standards applied	



**Please confirm that a written procedure to ensure quality assurance of measuring equipment is documented and implemented and covers the following elements**

- 1 *All relevant measuring equipment is calibrated, adjusted and checked at regular intervals including prior to use, and checked against measurement standards traceable to international measurement standards proportionate to the risks identified.*
- 2 *Components of the measuring systems which cannot be calibrated, are identified and alternative control activities are documented*
- 3 *When the equipment is found not to comply with required performance, the operator or aircraft operator shall promptly take necessary corrective action.*



## Questions

- What experience have other MS with the requirements to provide details on procedures?
- Is the suggested approach feasible for your country?
- Other observations or suggestions?

Contact:

[Alex.Pijnenburg@emissieautoriteit.nl](mailto:Alex.Pijnenburg@emissieautoriteit.nl)