Monitoring, Reporting and Verification

Verification in Practice
Experiences and Practical Insights

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Who we are

Verico SCE

- SCE = Societas Cooperativa Europaea, a European cooperative

- based in Langenbach (Germany) close to Munich

- Recently 23 members in 5 EU countries

- all members are small enterprises or freelancers

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Our business areas

Accredited validation and verification body

- ✓ ETS verifier in Germany and Spain
- ✓ MRV scheme of the maritime sector
- ✓ Verification of F-gas reports
- ✓ Validation and verification of upstream emission projects according to the EU fuel quality directive

Accredited certification body for energy management systems (ISO50001) including energy audits

Our business areas (2)

Capacity building in MRV

- ✓ verifiers
- ✓ authorities
- ✓ educational institutes
- ✓ operators especially in complex industries

Studies and policy support in the context of MRV

- ✓ National inventories
- ✓ QA/QC of inventories
- ✓ Gap analysis regarding capacities

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Topics

➢ Objects of investigation

➢ Competence requirements

➢ Strategic analysis, risk analysis, process analysis

'Objects of investigation'

- ✓ Raw data
  - ✓ Signal of any kind of meter
  - ✓ Invoice / receipt
  - ✓ Log book for counts
  - ✓ Laboratory reports
- ✓ Processing
  - ✓ Analogue to digital
  - ✓ Standardization
  - ✓ Software algorithms
  - ✓ Logging and archiving

'Objects of investigation' (contd.)

- ✓ Data Aggregation
  - ✓ Consolidation and corrections
  - ✓ Summing and averaging
  - ✓ Algorithms
- ✓ Data transfers
  - ✓ Manual or automatic
  - ✓ Reproducibility
  - ✓ Controls and automatic checks
  - ✓ Change management

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'Objects of investigation' (contd.)

- ✓ Reporting
  - ✓ Correctness
  - ✓ Compliance with approved monitoring plan
  - ✓ Completeness
  - ✓ Other reporting duties (e.g. improvement reports)
- ✓ Boundary
  - ✓ Correctness
  - ✓ Completeness
  - ✓ Production processes
  - ✓ Flow of fuels, raw material and products

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'Objects of investigation' (contd.)

- ✓ Data quality / correctness
  - ✓ Devices
  - ✓ Kind of installation
  - ✓ Operation conditions
  - ✓ Certificates
  - ✓ Sample taking
  - ✓ Sample handling
  - ✓ Logging / recording of manual activities
  - ✓ External services

'Objects of investigation' (contd.)

- ✓ Quality assurance
    - ✓ Documented procedures
    - ✓ Records and certificates
    - ✓ Qualification of personnel
    - ✓ External services
- ✓ Legal compliance
    - ✓ Approvals / permit
    - ✓ Other legal requirements

Knowledge of the MRV scheme specific legislation and relevant guidance

- ➢ MRV scheme legislation;

- ➢ the AVR and guidance material;

- ➢ the MRR and the guidance material;

- ➢ ISO 14064-3 and ISO 14065;

- ➢ templates (e.g. verification report);

- ➢ relevant legislation and guidance issued in which the verifier is carrying out a verification (e.g. metrological control);

Knowledge and experience of data and information auditing methodologies, e.g.

➢ check the initial effectiveness of control activities;

➢ determine the extent of substantive testing;

➢ determine corrective action and its impact on the data and information assessment;

➢ identify risks that could result in material misstatements and decide on the need to gather additional evidence or to extend the depth and detail of verification activities;

➢ identify inconsistencies, unexpected circumstances and findings by carrying out for example analytical procedures;

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Knowledge and experience of sampling techniques, e.g.

➢ manage complex data collection and recording interfaces;

➢ deal with data manipulation processes and their challenges;

➢ identify actual data system problems and failures, and take appropriate action;

➢ use audit processes to identify information, statements and facts that contradict the data in the emission report;

➢ challenge assumptions and statements in the emission report.

Competence requirements for verifiers

Knowledge and experience in assessing data and information systems, data flows, control activities and procedures, e.g.

➢ understand statistics, financial and economic accounting tools and practices;

➢ assess computer information system environments;

➢ Selection of use appropriate methods: e.g. document review, observation, cross checking with external sources, interviews, inspection of whether the control activities are functioning;

➢ evaluate the functioning of control activities and correct implementation of procedures for control activities;

➢ evaluate data, errors in data, data sources, applicable processes and data management systems;

Competence requirements for verifiers

The ability to perform the verification activities, e.g.

- ➢ carry out data verification and analytical procedures;

- ➢ think critically and analyze multiple inputs, distinguish between facts and inferences, and to exercise professional skepticism;

- ➢ carry out independent research and challenge assumptions and evidence asserted by the operator;

- ➢ strike a balance between attention to detail and a high level assessment of the anticipated outcome during the verification process;

- ➢ evaluate the information, data and assumptions and make professional judgments;

- ➢ ensure that the internal verification documentation contains sufficient information to support the verification report and meets the requirements of the AVR;

Competence requirements for verifiers

Sectoral knowledge and experiences

➢ Knowledge in combustion technologies and emissions by fuel is a pre-requisite;

➢ Knowledge on technologies, processes, emissions sources and specific monitoring approaches of the sector;

➢ Some sectors have unique monitoring approaches

Strategic Analysis in Practice

➢ Strategic analysis identifies what the validation and verification team needs to look at vs the assessment of risk that identifies how to look at the issues identified.

➢ The strategic analysis provides the verifier with the basis for the development of the risk analysis and the verification plan. The output from the strategic analysis is used as an input to the assessment of risks, sampling plan and verification plan.

➢ The verification process should not proceed until the verifier has obtained and evaluated sufficient relevant information on which to base the strategic analysis.
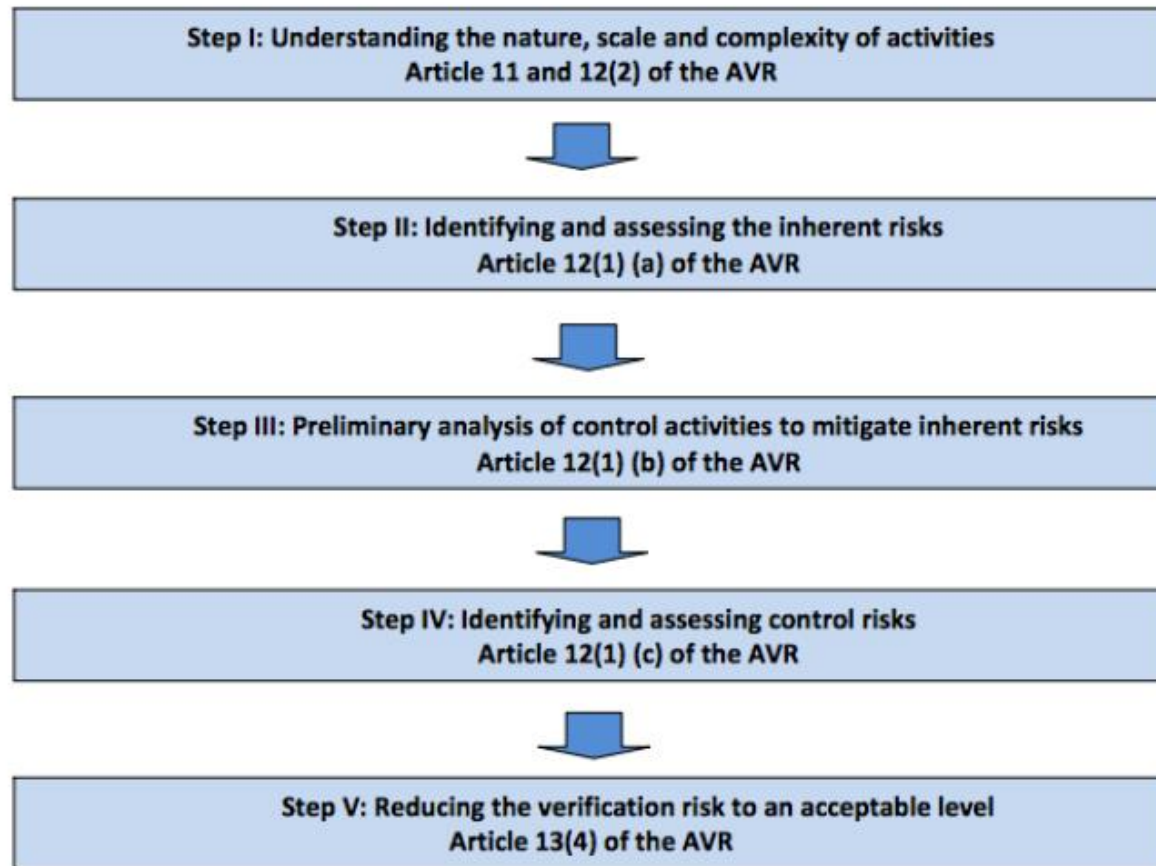
Strategic Analysis – some lessons learnt

➢ Sufficient collection of information at the beginning eases later activities and avoids unexpected, compromising situations

➢ Efforts are converted to routines, in case the verifier keeps a long-term contract

➢ Changes in data flow at the operator's side (e.g. new software or database systems) during a reporting year may result in almost doubling the efforts for data checks

➢ Complex installations could require auditors for various scopes and competences

➢ Results of strategic analysis are used to design the verification plan

Risk analysis – Inherent Risks – aspects

i. Installation and operation of metering devices

ii. malfunctions, shut-downs or changes in the production process

iii. addition of new emission sources or removal/closure of existing ones

iv. significant manual transfers and input of data

v. complex data management systems

vi. changes in data management

vii. complex monitoring methodologies and reporting policies

➢ Control activities are any acts carried out or measures implemented by the operator to mitigate inherent risks

➢ Some examples

- quality assurance of information technology systems

- quality assurance of the measurement equipment used

- segregation of duties

- internal reviews

➢ Analysis of the control activities and the robustness and adequacy of the control activities (control risk assessment)

Verification Risks

> The EU ETS Directive and Article 12 of the AVR require the verifier to carry out a risk analysis. The objective of the risk analysis is to assess the likelihood of risks of misstatements and/or non- conformities and to assess their likely material impact on the reported data.

> Its outcome determines how and to what extent the verification activities should be designed, planned and implemented.

> Verification risk is the overall risk that the verifier issues an inappropriate verification opinion. It consists of three components, i.e. inherent risk, control risk and detection risk.

Reducing Verification Risks

Step I: Understanding the nature, scale and complexity of activities
Article 11 and 12(2) of the AVR

Step II: Identifying and assessing the inherent risks
Article 12(1) (a) of the AVR

Step III: Preliminary analysis of control activities to mitigate inherent risks
Article 12(1) (b) of the AVR

Step IV: Identifying and assessing control risks
Article 12(1) (c) of the AVR

Step V: Reducing the verification risk to an acceptable level
Article 13(4) of the AVR

Process analysis – frequent seen issues

- ✓ Data gaps or double-counting, especially when introducing new software

- ✓ Typos in manual data transfers

- ✓ Time demand for data consolidation

- ✓ Reference to cells in spreadsheets

- ✓ Overwriting of calculation cells by figures

- ✓ Averaging

- ✓ Wrong units or mistyping of numbers

- ✓ Data inconsistencies (book-keeping vs. physical data)

Process analysis – frequent seen issues (2)

✓ Missing records on trainings and qualifications

✓ Missing internal reviews

✓ Missing documentation of performed internal checks

✓ Handling of sampling and lab analysis

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Any Questions!

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