EU Registry on Industrial Sites – Post-Submission Review

Manual of Procedure

Version 0 – March 2023
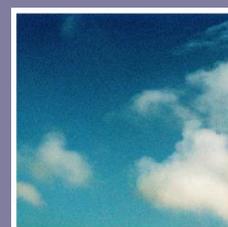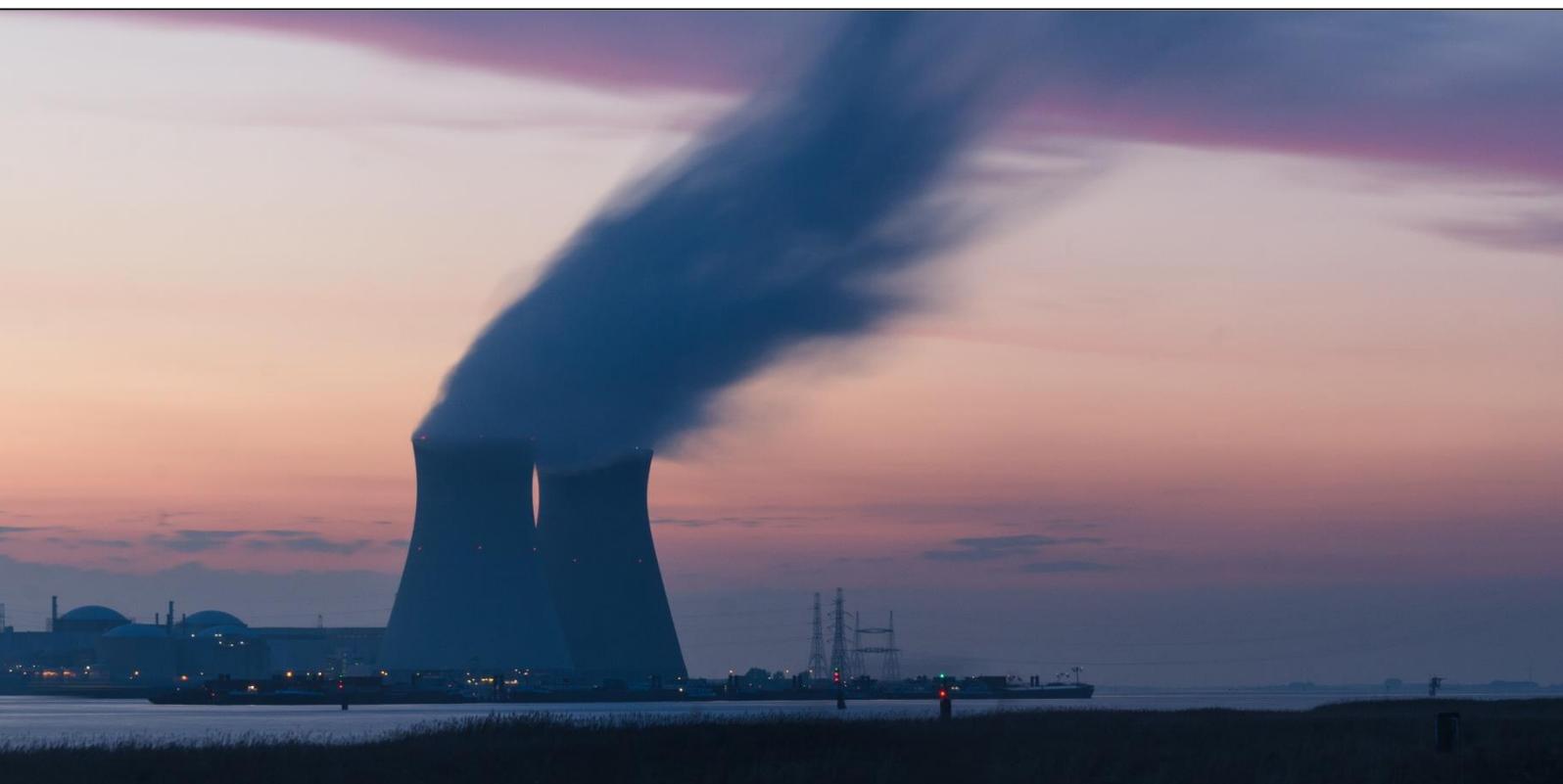
European Environment Agency

Version control

Version number	Date	Description
0	March 2023	Updates of all the check by adding information on where the calculation are stored within the EEA systems. Removal of deprecated checks from version 3.2. Update of the findingLog section.

Contents

1   Introduction

The EU Registry on Industrial Sites (hereafter the EU Registry), represents a reporting stream that facilitates the annual reporting to EEA of administrative and identification data pertaining to sites and facilities defined under the European Pollutant Release and Transfer Register Regulation 2006[1] and installations, large combustion plants (LCPs) or waste incinerators covered under the Industrial Emissions Directive 2010[2]. The purpose of this manual is to detail the logic and proposed implementation of a range of post-submission quality assurance/quality control (QA/QC) checks, which will be performed by expert reviewers on successfully reported data. These checks go beyond the automated QA/QC checks already within the central data repository (CDR), the reporting platform used for the EU Registry. The logic behind those automated checks is discussed within the EU Registry Quality Assurance Logic document[3]. This manual builds upon that document and references the data model as defined in the streamlined view of the EU Registry. This document is likely to be substantially amended over time as assessments of submissions become available through reporting, in turn allowing the identification of potential additional aspects where further post-submission checks need to be implemented.

The checks proposed within this document can be split into two groups:


1. **Temporal checks** – These checks look holistically across a number of reporting years to determine whether certain aspects of reporting are being adhered to, e.g. analysing the frequency of changes in certain attributes or patterns in reporting. These checks will only be possible when there is more than one reporting year to analyse.

2. **Specific checks** – These checks analyse specific aspects of reporting to determine whether they have been reported correctly. Unlike temporal checks, these checks can be performed for each reporting round without the need to also analyse related data reported in previous reporting rounds. Historical data will be transferred into the database in the future, but this can only happen after the first reporting year once Inspire IDs have been assigned to existing facilities and installation parts.

Checks within each group are systematically detailed in the sections below. Figure 1 below helps to illustrate the role each check group has in the reporting process.

---

[1] Regulation (EC) No 166/2006, European Pollutant Release and Transfer Register, Available at: http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32006R0166

[2] Directive 2010/75/EU, Industrial Emission Directive, Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010L0075&from=EN

[3] Documents and other materials (e.g. schema documents) referenced in this manual can be found on the EU Registry website - https://cdr.eionet.europa.eu/help/euregistry

Figure 1 - Reporting flow over time and the role of each check group.
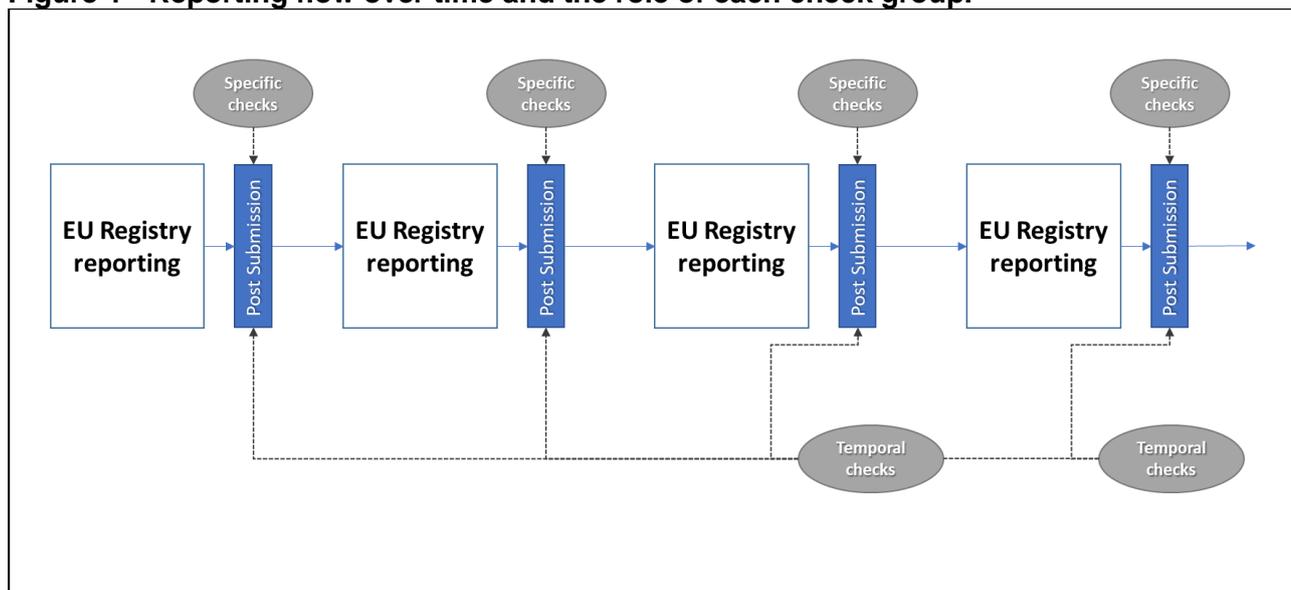
The submission process includes a series of automated quality assurance checks in the central data repository (CDR). These automated checks are detailed extensively in the EU Registry's Quality Assurance Logic document. Each submission released in the CDR also contains metadata regarding the checks, which have been flagged in respect to warning or information messages. This metadata can be consolidated allowing a holistic view of what checks have been consistently flagged across submissions. This can then be used either as prioritisation criteria, to develop further specific post-submission checks, or to inform the refinement of the automated checks.

Historical data, i.e. data from E-PRTR/LCP reporting from 2016 and older, has been transferred into the EU-Registry in 2021. This historical data set are not open to re-submissions and is hence locked for the future. Administrative and thematic data from may be re-submitted to the EU-Registry only for the current reporting year and up to the previous 2 reporting years (e.g. in case reporting year is 2022, re-submission of 2020 and 2019 it's allowed). The EU-Registry relies on consistency between submissions with respect to data that identifies entities and the relation between them. When re-submitting data for a year prior to the latest reported data, consistency with later years must be ensured, i.e. a re-submission of the following reporting years is required (see Check 3.9).

2   Temporal checks

These checks look across several reporting years to determine whether certain aspects of reporting are being adhered to, e.g., analysing the frequency of changes in certain attributes or patterns in reporting. These checks cover at least three reporting rounds and are activated from the reporting year 2019 and onwards.

C2.1 – Permit frequency

Rationale:
Permits for IED installations reported to the EU Registry are characterised by certain 'permit actions' accompanied by dates. These actions follow a logical order of granted, reconsidered, and updated which should be reflected by the date of granting the permit and the date of updating the permit. The date of permit granted should refer to the year of which an IED compliant permit was granted. This date should not change and remain static over all reporting years.

The date of permit update refers to the year the permit was last updated, normally a date within the reporting year when the permit update action is true (ref. check C3.11). However, the date of last update is also sometimes reported in years when the permit update is false. To capture possible misreporting in such instances, a check will flag if the date of last update does not follow chronological order between reporting years.

A post-submission check can evaluate the reported data over several years to ensure consistency. Such an evaluation can help to standardise the way in which these actions are interpreted. The specific checks C3.10 and C3.11 also aids this purpose.

Procedure:
The EU Registry database will be evaluated. Those installations where at least two dates of permit granted and/or permit updated have been reported will be highlighted for each reporting country. The check consists of four parts:
   a) The date of last update should be in chronological order between reporting years, i.e., increasing with increasing reporting year.
   b) The date of last update should never be a date prior to or equal to the date of granting.
   c) The date of granting should be static between all reporting years.
   d) If a permit is granted (Boolean is true) in a reporting year, it should generally be true in all consecutive years if the status of the installation remains 'functional'.

Follow up action:
If the conditions above are not met for a given IED installation for a given reporting year, the finding is flagged to the reporting countries in the file with feedback they receive after the check is performed (findingLog file)
Any potential resubmission of the data regarding the outcome of this specific check should be made upon agreement with the EEA.

(EEA internal) Calculation of the findings:
The above mentioned findings shared with reporting countries are calculated and stored in the EEA EUReg SQL database in the Function QAQC.C2_1_FindingList. The function has two dependencies from other two: QAQC.C2_1_PermitList and QAQC_PermitList. The function requires as an input variable the reporting year.

C2.2 – Inspection frequency

Rationale:
For IED installations, the number of site visits is reported to the EU Registry. Article 23 of the IED requires the countries to set up a system of environmental inspections, more specifically, one inspection every year for high-risk installations, and one every 3 year for low-risk. With the available data reported through the EU-Registry, the requirement for high-risk installations is not feasible to verify directly. However, the reported number of site visits should generally not comprise large variations between years in total or within IED main activities. In this check the reported site visits are used as proxy for inspections in Article 23 of the IED.

Procedure:
The EU Registry database, will be evaluated.
   a) The sum of site visits per year is compared to the average over all available reporting years from 2017 and onwards. If the sum in one reporting year deviates from the average of the previous 3 reporting year by more than a factor 2, the site visit reporting for this year is flagged.
   b) The sum of site visits per year and per main IED activity is compared to the average per main IED activity over all available reporting years from 2017 and onwards. If the sum per activity in one reporting year deviates from the average of the previous 3 reporting year by more than a factor 5, the site visit reporting for the given year and IED activity is flagged.

Follow up action:
If the conditions above are not met for a given IED installation for a given reporting year, the finding is flagged to the reporting countries in the file with feedback they receive after the check is performed (findingLog file).
Reporting countries are asked to confirm the reported data or correct the data by re-submissions of relevant years.

(EEA internal) Calculation of the findings:
The above mentioned findings shared with reporting countries are calculated and stored in the EEA EUReg SQL database in two functions: QAQC.C2_2a_SiteVisitTotal and QAQC.C2_2b_SiteVisitIEDActivity. The function requires as an input variable the relevant reporting year.

C2.3 – totalRatedThermalInput frequency

Rationale:
For LCP installation parts, the total rated thermal input of the plant is reported in megawatts (MW). This indicates the capacity of the plant and should remain relatively static over time. A post-submission check can analyse the frequency of changes to this value, informing the extent to which capacity is altered.

Procedure:
The EU Registry database will be evaluated. The change in the totalRatedThermalInput attribute across all installation parts, will be calculated with respect to percentage of capacity and evaluated for each reporting country. Those installation parts with any significant change in this attribute will be flagged. 'Any significant change' is defined as if the totalRatedThermalInput in any year deviates from the average over the previous 3 reporting years more than 1 %. The check considers functional installation parts only.

Follow up action:
If the conditions above are not met for a given LCP installation part for a given reporting year, the finding is flagged to the reporting countries in the file with feedback they receive after the check is performed (findingLog file).
Reporting countries are asked to confirm the reported data or correct the data by re-submissions of relevant years.

(EEA internal) Calculation of the findings:
The above mentioned findings shared with reporting countries are calculated and stored in the EEA EUReg SQL database in the Function QAQC.C2_3_TotalRatedThermalInput. The function requires as an input variable the relevant reporting year.

C2.4 – totalRatedThermalInput national average comparison

Rationale:
For LCP installation parts, the total rated thermal input of the plant is reported in megawatts (MW). This indicates the capacity of the plant and should remain relatively static over time. A post-submission check will be able to analyse how these individual capacities, when summed into a national total and averaged, compare to previous reporting years. In this manner, individual years where the average significantly differs can be flagged as anomalies.

Procedure:

The EU Registry database will be evaluated. The totalRatedThermalInput attribute across all installation parts will be summed and an average for each reporting country and reporting year will be calculated. Those reporting years which differs from the average of the previous 3 reporting years with more than 10 % will be flagged

Follow up action:
If the conditions above are not met for a given LCP installation part for a given reporting year, the finding is flagged to the reporting countries in the file with feedback they receive after the check is performed (findingLog file).
Reporting countries are asked to confirm the reported data or correct the data by re-submissions of relevant years.

(EEA internal) Calculation of the findings:
The above mentioned findings shared with reporting countries are calculated and stored in the EEA EUReg SQL database in the Function QAQC.C2_4_NationalTotalRatedThermalInput. The function requires as an input variable the relevant reporting year.

C2.5 – Number of BAT Conclusions

Rationale:
According to article 14(3) of the IED, the BAT Conclusions (BATC) shall be the reference for setting permit conditions. The Commission implementing decision (EU) 2018/1135 requires identification of the BATCs that are applicable to any of the activities carried out at the installation. Large variations in number of reported BATCs are expected to indicate mistakes in reporting or possibly practices that are not in line with the IED.

Procedure:
The EU Registry database will be evaluated.
   a) The sum of BATCs per year is compared to the average over all available reporting years from 2018 and onwards. If the sum in one reporting year deviates from the average of the previous 3 reporting years by more than a factor 2, the BAT Conclusion reporting for this year is flagged.
   b) The sum of BATCs per year and per main IED activity is compared to the average per main IED activity over all available reporting years from 2018 and onwards. If the sum per activity in one reporting year deviates from the average of the previous 3 reporting years by more than a factor 5, the BAT Conclusions reporting for the given year and IED activity is flagged.

Follow up action:
If the conditions above are not met for a given IED installation for a given reporting year, the finding is flagged to the reporting countries in the file with feedback they receive after the check is performed (findingLog file).
Reporting countries are asked to confirm the reported data or correct the data by re-submissions of relevant years.

(EEA internal) Calculation of the findings:
The above mentioned findings shared with reporting countries are calculated and stored in the EEA EUReg SQL database in the two functions QAQC.C2_5a_BATConclusion and QAQC.C2_5b_BATConclusionIEDActivity.
Both functions use the function QAQC.ProductionInstallationDerogationCount as datasource; the function provides the count of BAT Derogation, BATAEL Derogation, BAT Conclusion, BATAEL Stricter Condition, BAT Conclusion not yet adopted and No BAT Conclusion Applicable for each reported installation in the EU Registry from reporting year 2017. The function requires as an input variable the relevant reporting year.

C2.6 – Number of BATAEL derogations

Rationale:
Article 15(4) of the IED allows competent authorities to set, under certain specific circumstances, less strict emission limit values in the permit than the emission levels associated with the best available techniques (BAT). Countries were expected to report derogations to the EU-Registry from the 2018 reporting year and onwards. Large variations in number of reported BATAELs are expected to indicate mistakes in reporting or possibly practices that are not in line with the IED.

Procedure:

The EU Registry database will be evaluated.

a) The sum of BATAELs per year is compared to the average over all available reporting years from 2018 and onwards. If the sum in one year deviates from the average of the previous 3 reporting years by more than a factor 2, the BATAEL reporting for this year is flagged.

b) The sum of BATAELs per year and per main IED activity is compared to the average per main IED activity over all available reporting years from 2018 and onwards. If the sum per activity in one reporting year deviates from the average of the previous 3 reporting years by more than a factor 5, the BATAEL reporting for the given year and IED activity is flagged.

Follow up action:

If the conditions above are not met for a given IED installation for a given reporting year, the finding is flagged to the reporting countries in the file with feedback they receive after the check is performed (findingLog file).

Reporting countries are asked to confirm the reported data or correct the data by re-submissions of relevant years.

(EEA internal) Calculation of the findings:

The above mentioned findings shared with reporting countries are calculated and stored in the EEA EUReg SQL database in the two functions QAQC.C2_6a_BATDerogation and QAQC.C2_6b_BATDerogation_IEDActivity. Both function use the function QAQC.ProductionInstallationDerogationCount as datasource; the function provides the count of BAT Derogation, BATAEL Derogation, BAT Conclusion, BATAEL Stricter Condition, BAT Conclusion not yet adopted and No BAT Conclusion Applicable for each reported installation in the EU Registry from reporting year 2017. The function requires as an input variable the relevant reporting year.

3   Specific checks

C3.2 – Coordinates distance analysis

Rationale:

The EU Registry Quality Assurance Logic document includes multiple checks to evaluate the distances between entities, based on the supplied coordinates; however, a manual post-submission check can be more informative. For example, it would be anticipated that the distances between connected entities would decrease progressing down the geographical hierarchy e.g. the distance between the centre point of the installation to the associated facility would be less than that of the distance between the centre point of the site to the facility. The check could also flag extreme distances and begin to analyse how these relate to Annex I activities. For example, it is anticipated that the distances between entities could be much larger in respect to 'opencast mining & quarrying' (E-PRTR Annex I Activity: 3b), than 'urban waste-water treatment plants' (E-PRTR Annex I Activity: 5f).

Procedure:

The coordinates of all entities would be used to calculate the distance between the facility and associated site, installation and associated facility, and installation part and associated installation. Based on expert judgment an acceptable maximum distance related to the main IED or E-PRTR Annex I activity associated with the complex will be established. The distance decreases progressing down the geographical hierarchy. Associated entities will be flagged when subject to large entity distances. The acceptable maximum distance (threshold) is currently set to 6 km for site to facility, 4 km for facility to installation and 2 km for installation to installation part.[4]

Follow up action:

If the conditions above are not met for a given EU-Registry entity for a given reporting year, the finding is flagged to the reporting countries in the file with feedback they receive after the check is performed (findingLog file).

Reporting countries are asked to confirm the reported data or correct the data by re-submissions of relevant years.

---

[4] These thresholds are set from January 2020. For the findings logs distributed in 2019 the thresholds were 2 km for site to facility and facility to installation, and 1 km for installation to installation part.

Reporting countries which have been flagged will be contacted through the findingLog and asked to review and if necessary clarify large entity distances. Any re-submission due to this check will be made only upon agreement with the EEA.

(EEA internal) Calculation of the findings:
The above mentioned findings shared with reporting countries are calculated and stored in the EEA EUReg SQL database in three different functions:
- QAQC.C3_2a_Coordinates_FacilitySite,
- QAQC.C3_2b_Coordinates_InstallationFacility,
- QAQC.C3_2c_Coordinates_PartInstallation.

The function use the QAQC.DistanceBetweenEntities as data source and requires as an input variable the relevant reporting year.

C3.3 – URL validity

Rationale:
The PermitURL, a parentCompanyURL, a publicEmissionMonitoringURL, a siteVisitURL and a publicDisclosureURL attributes can be populated for entities reported to the EU Registry. A post-submission check determines the validity of the URL provided.

Procedure:
Where a URL is supplied for an entity, the URL attribute will be evaluated by a macro determining whether the URL is valid, i.e., a webpage or document can be accessed. A feedback for each invalid URL is provided according to the following HTTP response codes:
- From response code 300 to response code 399: the URL is not valid and a comment text as "Redirection_Messages" is provided.
- From response code 400 to response code 499: the URL is not valid and a comment text as "Client_Error_Messages" is provided
- From response code 500 to response code 599: the URL is not valid and a comment text as "Server_Error_Messages" is provided,
- A "No_response" comment text is provided in case the URL does not provide any feedback.

These HTTP response codes indicate the type of error behind the invalid URL. For example, among the "Client_Error" type of messages there is the well known "404 not found" which is when the server cannot find the requested resource. In the web browser, this means the URL is not recognised.

Follow up action:
Installations or facilities for which an invalid URL has been flagged will be communicated to the Member State. In case the number of findings is significant a general feedback on the quality of the URL provided is added to the findingLog file. The detailed information will be shared with the countries in a second moment.

(EEA internal) Calculation of the findings:
The above mentioned findings shared with reporting countries are calculated and stored in the EEA EUReg SQL database in the following SQL function: QAQC.C3_3_URLvalidity. An ad-hoc FME process is running to check the html response of each single URL.

C3.7 – Continuous reporting of decommissioned entities

Rationale:
A Production Facility, a Production Installation or a Production Installation Part should be removed from the EU-Registry when the entity was reported as decommissioned in previous year's submission.

Procedure:

The list of InspireIDs for the Production Facilities, Production Installations or Production Installation Parts that are reported as decommissioned for the previous year of reporting will be checked against the current reporting to see if any of these InspireIDs are found.

Follow up action:
If the conditions above are not met for a given EU-Registry entity for a given reporting year, the finding is flagged to the reporting countries in the file with feedback they receive after the check is performed (findingLog file).
Reporting countries are asked to confirm the reported data or correct the data by re-submissions of relevant years.

(EEA internal) Calculation of the findings:
The above mentioned findings shared with reporting countries are calculated and stored in the EEA EUReg SQL database in the the function QAQC.C3_7_Decommissioned. The function requires as an input variable the relevant reporting year.

C3.10 – Inconsistencies in permit actions reporting

Rationale:
Permits for IED installations reported to the EU Registry are characterised by certain 'permit actions'. A post-submission check can evaluate the logical order of these actions in the reported data over several years. Such an evaluation can help to standardise the way in which these actions are interpreted. It follows from this logic that a permit must have been granted before it is reconsidered or updated. The CID[5] of the IED states that "*permit conditions are to be periodically re-considered, and where necessary updated, (...)*". This implies that a permit cannot be updated without being reconsidered first.

Procedure:
The following procedure is followed:
 a) If a permit is reconsidered, the permit granted Boolean should be true within the same reporting year.
 b) If a permit is updated, both the permit reconsidered and the permit granted Boolean should be true within the same reporting year.

Follow up action:
If the conditions above are not met for a given IED installation for a given reporting year, the finding is flagged to the reporting countries in the findingLog file
Any potential resubmission of the data regarding the outcome of this specific check should be made upon agreement with the EEA.

(EEA internal) Calculation of the findings:
The above mentioned findings shared with reporting countries are calculated and stored in the EEA EUReg SQL database in the function QAQC.C3_10_Permit. The function use the function QAQC.PermitList as a data source and it requires as an input variable the relevant reporting year.

C3.11 – Inconsistencies in permit action dates reporting

Rationale:
The permit actions follow a logical order of granted, reconsidered, and updated which should be reflected by the reported date the permit was granted and the following dates of updating the permit. The date of permit granted should refer to the year of which an IED compliant permit was granted and should be populated and remain static over all reporting years.

---

[5] Commission Implementing Decision (EU) 2018/1135 of 10 August 2018
  http://data.europa.eu/eli/dec_impl/2018/1135/oj

The date of permit update refers to the year the permit was last updated. If the permit updated Boolean is true for a given reporting year, a post-submission check will verify if the permit updated date is a date within that reporting year. Some countries report the date of last update also in years when the permit updated Boolean is false. In this case the date of update should be a valid date in previous reporting years and not in the future with respect to the reporting year. Furthermore, the temporal check C.2.1 will flag if the date of last update does not follow a chronological order between reporting years. The dates entered for permit granted and permit updated should also be valid.

Procedure:

The logic for this post-submission check can be summarized in the following four parts:

a) If the permit is updated in a reporting year, the date of last update should be populated with a date, and this date should be within the reporting year it is given.

b) If the permit is not updated within a reporting year, the date of last update should be in a year prior to the reporting year.

c) If a permit is granted a date should be given.(this check is not performed from RY >= 2021)

d) The date of granting should not be in the future with respect to the reporting year. Generally, the reported data should reflect the status of the entities at the end of the reporting year.

e) The date of granting should be equal or prior to the reporting year

Follow up action:

If the conditions above are not met for a given IED installation for a given reporting year, the finding is flagged to the reporting countries in the findingLog file

Any potential resubmission of the data regarding the outcome of this specific check should be made upon agreement with the EEA.

(EEA internal) Calculation of the findings:

The above mentioned findings shared with reporting countries are calculated and stored in the EEA EUReg SQL database in the function QAQC.C3_11_PermitCoherence. The function use the function QAQC.PermitList as a data source and it requires as an input variable the relevant reporting year.

C3.12 – Inconsistencies in site visit (inspection) reporting

Rationale:

For IED installations, the number of site visits is reported to the EU Registry. Article 23 of the IED requires the countries to set up a system of environmental inspections. However, if the number of site visits is close to one visit every week, the reporting is expected to be false. In this check the reported site visits are used as proxy for inspections in Article 23 of the IED.

Procedure:

If the number of site visits for a given reporting year is larger than 40, the reported number for the given production installation and year is flagged.

Follow up action:

If the conditions above are not met for a given IED installation for a given reporting year, the finding is flagged to the reporting countries in the findingLog file

Reporting countries are asked to confirm the reported data or correct the data by re-submissions of relevant years.

(EEA internal) Calculation of the findings:

The above mentioned findings shared with reporting countries are calculated and stored in the EEA EUReg SQL database in the function QAQC.C3_12_SiteVisitInstallation. The function requires as an input variable the relevant reporting year.

4   Findings log

Findings of the checks detailed within this document will be communicated via a 'Findings Log', sent to the reporting countries via an email to a designated representative or access through the EIONET. Reporting countries should respond to each individual finding and return/re-upload an edited version of the findings log. More detail on how individuals should use the Findings Log is provided below.

The Finding Log file is produced by the EEA through the FME Workspace "EUReg - Post Submission checks.fmw" stored in the EEA Common Work Space (CWS). The workspace returns a country specific MS Excel file by harvesting the output of the SQL functions listed above in the check description. It requires two parameters as input: the relevant reporting year and the current date.
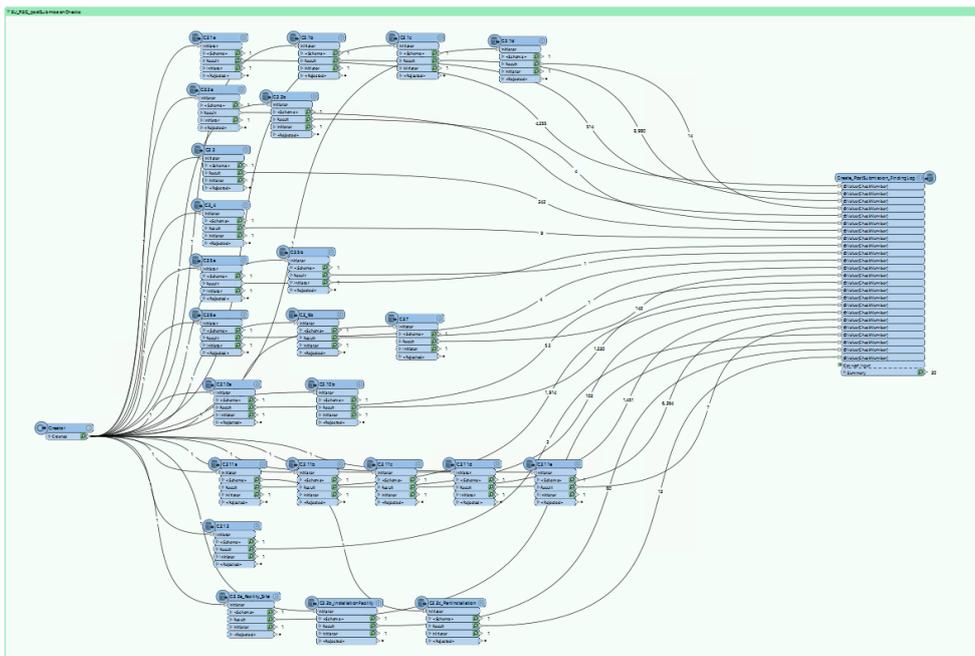
The Findings Log consists of several "Check specific" tabs where all the relevant finding are listed. Each Finding is identified through a "FindingId" which reflects the reporting country, the reporting year, the check number, and the relevant entity investigated (e.g.: C3.2b_AT_2021_AT.CAED/123456789ABCD.FACILITY).

Each findings present the relevant entity involved through the Inspire ID, the field which have been investigated (e.g.: date of granting, coordinate etc…) and a comment about the reason of the finding.

Three empty column are provided: i) Data are correct; ii) Data will be corrected and iii) Data need further investigation. **Data reporter should provide feedback by flagging with an "X" the relevant column as in the picture below.**

For specific checks on permit and coordinates the correction through a re-submission of the dataset should happen only upon agreement with the EEA.

The commented findingLog should be either uploaded to the EIONET Project folder or send via email to the Industry Helpdesk (industry.helpdesk@eea.europa.eu).