The GHGRP ensures that data submitted to EPA are accurate, complete, and consistent through a multi-step process. This process begins when the reporter enters their data. During this pre-submittal phase, automated checks provide the reporter with real-time feedback on potential errors and some of these checks must be resolved before the report can be submitted to EPA. Following this, the reporter must certify that the data and information contained in the annual GHG report are true, accurate, and complete before the report is submitted to EPA. Finally, after the report is submitted, it is evaluated against an extensive array of electronic checks that will "flag" potential errors. These flags are manually reviewed to assess the cause of the flag and if found to be a potential error, EPA will follow up with the reporter. At this point, the reporter can resolve the issue either by providing an acceptable response describing why the flagged issue is not an error or by correcting the flagged issue and resubmitting their annual GHG report (Figure 1).

GHGRP Report Verification Process
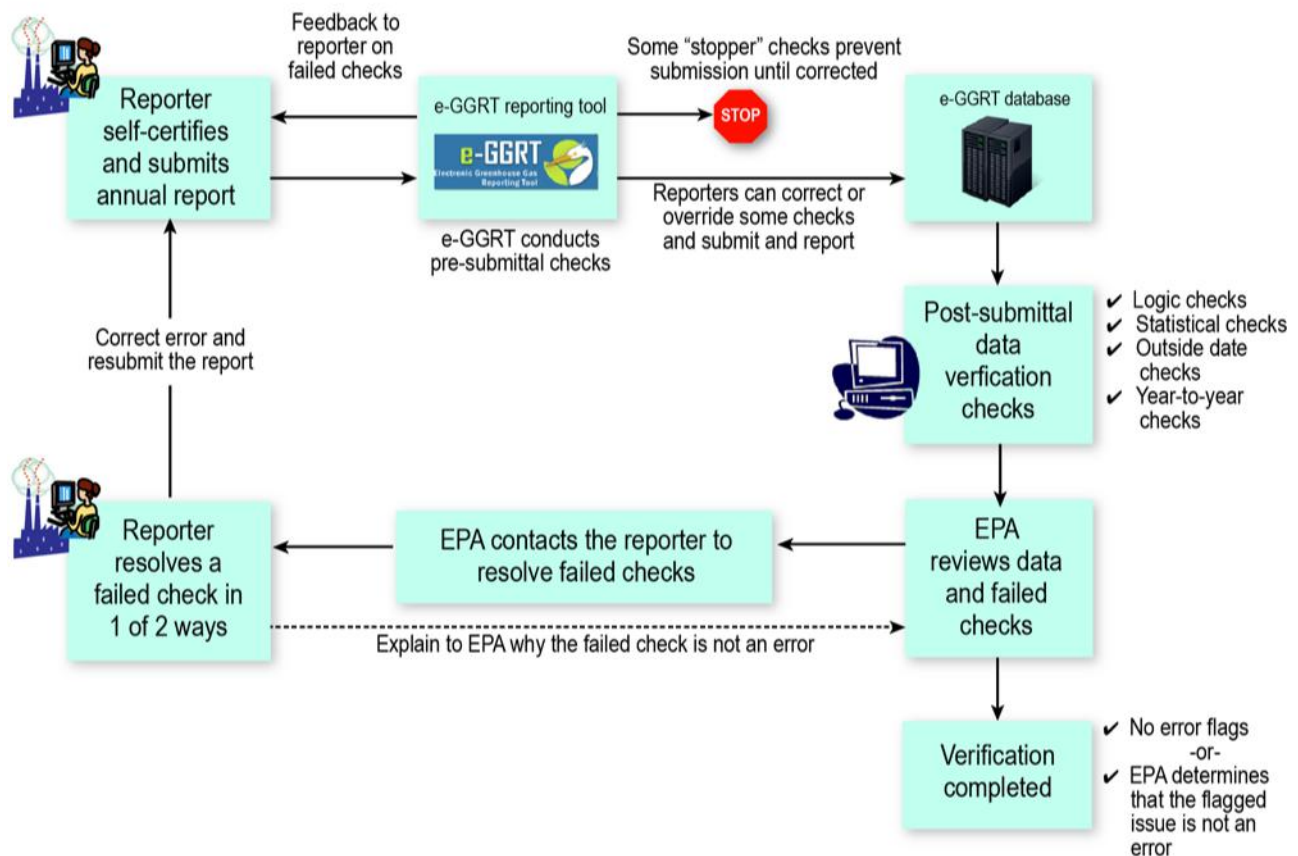
Thousands of checks, both **pre-submittal** and **post-submittal** are used to evaluate annual GHG reports. Some of these checks are run on all reports received while others are part of a suite of checks customized for each industrial sector reporting to the GHGRP.

Pre-submittal checks highlight potential errors before the report is certified and submitted so that the reporter has the option to address the errors before submitting the report. These checks are designed to help facilities comply with the rule. Much like how tax reporting software flags potential issues before the data are submitted to the government to reduce the chances of an audit, these checks help reduce the chance that there will be errors in the submitted data that would require EPA to follow up with the facility. In most cases, the reporter has the option to submit their report without addressing the failed check. Pre-submittal checks will typically highlight missing data fields and values that fall outside of an expected range. Some pre-submittal (stopper) checks identify critical errors (such as data fields that have not been reported) that must be resolved before the report can be submitted.

Post-submittal checks are applied after a report is certified and submitted to EPA. Due to the complexity of these checks, many cannot be included with those run during pre-submission. The types of checks that EPA uses to verify reports post-submission are described below:

- ▶ Range checks are used to determine if a respondent's data are within the expected range. For example, the number of annual operating hours would be expected to fall between 0 and 8,784. Values outside of that range would be flagged.
- ▶ Statistical checks are used to evaluate all the data from all similar facilities and identify data that might be outliers.
- ▶ Algorithm checks consider the relationships between different pieces of entered information and compare them to an expected value. For example, does quarterly data add up to the annual total?
- ▶ Outside data checks are used to compare facility level details to other datasets not in the GHGRP, for example, data that facilities reported to the Department of Energy.
  Year-to-year checks are used to determine if variations occur in the same reported data element between reporting years.

Reporters are also required to maintain records further documenting how the data provided in their annual GHG reports were developed. These records include a monitoring plan describing where and when samples were collected, methods used to analyze samples, and the procedures used for quality assurance and quality control. These records must be kept for at least 3 years following the respective reporting period in a format that is readily available for inspection and review.