March 2016

OAQPS Measurement and Monitoring Projects – 2015/2016

Environmental Protection Agency
Office of Air Quality Planning and Standards
Air Quality Assessment Division, Measurement Technology Group (MTG)
Sector Policies and Programs Division, Measurement Policy Group
(http://www.epa.gov/ttn/emc)

Below is a status report of projects and other current activities involving air emissions methods and monitoring and other emissions quantification tools, databases, and protocols.

New and Revised 40 CFR Part 60, Appendix A, Test Methods

- **Test Methods Update Rulemaking** – We continually collect and catalogue errors and other needed revisions to our test methods, performance specifications, and associated regulations in 40 CFR parts 51, 60, 61, and 63. Many of these needed revisions have been brought to our attention by affected parties and end-users. Our last Test Method Update Package was finalized on February 27, 2014 (79 FR11228) and a new Methods Update Package was proposed on September 8, 2015 (80 FR 54146). This proposal included updates to Methods 1, 2, 2G, 3C, 4, 5, 5H, 5I, 6C, 7E, 10, 10A, 10B, 15, 16C, 18, 25C, 26, 26A, 29, 30A, 30B, 107, 201A, 202, and 320; Performance Specifications 1, 2, 3, 4A, 11, 15, and 16; and Procedures 2 of Appendix F. The package consists primarily of corrections to technical errors in equations and diagrams and typographical errors and the addition of alternative equipment, procedures or methods the Agency has found acceptable to use. In addition, we also proposed revisions to the allowed methods for total VOC for engines. We received detailed comments from testers, instrument vendors, industry, states, and one university. We are presently completing the response to comments document and rule package and expect the final rule to be published this summer.
  Contact: Lula Melton, MTG, melton.lula@epa.gov.

- **Method 2H Revisions** – Method 2H describes the procedures to determine the decay of stack gas velocity near the wall of circular stacks. On August 25, 2009 (74 FR 42819), we proposed revisions to Method 2H to incorporate the improvements from Conditional Test Method (CTM-041) for assessment of wall effects for rectangular stacks which have been frequently requested for use through the petition process of the Acid Rain Program. These revisions would allow Method 2H to address wall effects in rectangular stacks, allow multiple runs at a single load, decouple the wall effects testing from the Relative Accuracy Test Audit (RATA), and provide a mathematical formula for determination of a stack-specific default wall effect adjustment factor. Comments have been received on the proposal; finalization of the method has been delayed until resources permit.
  Contact: Jason DeWees, MTG, dewees.jason@epa.gov.

New and Revised 40 CFR Part 60, Appendix B, Performance Specifications for Continuous Monitoring Systems

- **Performance Specification 11 Revisions and Guidance** – Following the 2009 revisions to Performance Specification 11 - Specifications and Test Procedures for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources (PS-11, 74 FR 12575, 3/25/09), we posted a set of files on the EMC FAQ web page associated with PS-11(http://www.epa.gov/ttn/emc/specs/prompspec11.html) that includes (1) a spreadsheet and instructions for evaluating correlation test data to demonstrate compliance with PS-11, (2) information on evaluation of response correlation audit (RCA) data and evaluation of particulate matter stratification in ducts and stacks, (3) summary sheets on audit and routine system checks required by Procedure 2 for PM CEMS, and (4) question and answer documents. We are currently considering further revisions to PS-11. These revisions won't be made until we have the resources to

adequately evaluate the potential changes needed; however, in the interim, we plan to issue a direct final rule setting forth a procedure that will alleviate the problems that occur when the relative response audit (RRA) or relative correlation audit (RCA) test results are lower than the test results used to develop the initial correlation curve.
Contact: Kim Garnett, MTG, garnett.kim@epa.gov.

- **Performance Specification 18 and Procedure 6 for HCl CEMS** – On July 15, 2015 (80 CFR 38628), we finalized a flexible performance-based Performance Specification (PS 18) and accompanying quality assurance procedure (Procedure 6) for HCl CEMSs to support the Mercury and Air Toxics (MATS) rule and the Portland Cement MACT rule. The promulgation of PS 18 was a result of working with instrument vendors and other stakeholders who provided information on current HCl CEMS technologies, availability, and performance. Like Performance Specification 15 for FTIR-based continuous emissions monitoring, PS 18 is appropriate for measuring HCl emissions in the range of 0 to 5 ppm -- the levels expected to be seen under MATS and the Portland Cement MACT, but unlike PS 15 it is technology neutral. Due to a delay in availability of NIST-traceable 'protocol' gases for HCl required by PS 18 and Procedure 6, we have recently issued a broadly applicable alternative test method approval (ALT-114) to allow gas vendors to certify gas values using a rigorous approach to yield uncertainties close to those that would be obtained using NIST reference gas materials. This alternative is designed for use in the interim until the NIST reference gases are routinely available.
Contacts: Candace Sorrell, MTG, sorrell.candace@epa.gov and Ray Merrill, MTG, merrill.raymond@epa.gov.

New and Revised 40 CFR Part 63, Appendix A, Test Methods

- **Method 301 Revisions** – Method 301 describes the procedures needed to conduct field validation of pollutant measurement methods for various waste media. EPA is currently preparing a proposal package for revisions to Method 301. Method 301 was originally published on December 29, 1992 (57 FR 61970) as a field validation protocol method for the Early Reductions Rule; on March 16, 1994, Method 301 was brought into 40 CFR Part 63.7 (59 FR 12430) to validate methods or method modifications as justification for alternative test method requests. To date, Method 301 has not addressed distinguishing between validation requirements for source-specific applications of a candidate method versus validation for application to multiple sources. The proposed revisions are intended to clarify when sections of the method are required depending on application of the method. Additional technical corrections will also be included in this proposal which is planned for late 2016/early 2017.
Contact: Kristen Benedict, MTG, benedict.kristen@epa.gov.

- **Methods 325A and 325B for Passive Fenceline Monitoring for Fugitive and Area Sources –** On December 1, 2016 (80 FR 75178), we finalized two methods for use in assessing fugitive/area source emissions of volatile organic compounds (VOC). These methods rely on sorbent tubes coupled with thermal desorption and gas chromatographic (GC)-based analysis. The methods address field placement of sorbent tubes that passively accumulate VOC from air at or near area of fugitive emission sources (Method 325A) and gas chromatographic analysis of the tubes (Method 325B). Method 325A allows sampling site placement using equal linear distance between samplers or equal degrees of separation around the geometric center of a facility. We have evaluated the performance of the methods in laboratory and field comparisons using duplicate samples and passivated steel canisters for comparison. Evaluation tests include the effects of temperature, humidity, variable concentrations, and storage time. The portability and small size of typical sampling packages for passive sorbent-based sampling and the wide range of sorbent choices make this monitoring approach appealing for special monitoring studies of human exposure to toxic gases and the measurement of VOC from area or fugitive emission sources. The passive monitoring procedures will be used as one of a combination of tools to identify and quantify emissions from fugitive and area sources. In the future, the passive sorbent tube measurement approach may be combined with active sorbent tubes, canister-based monitoring methods, on-site auto GC systems, open path instrumentation, and other specialized point monitoring instruments to address measurement needs for VOCs around fugitive

and area emission sources. Methods 325A and B were promulgated with the Petroleum Refinery Sector Risk and Technology Review and New Source Performance Standards and are being used to measure benzene under this rule.
Contacts: Ray Merrill, MTG, merrill.raymond@epa.gov and Jason DeWees, MTG, dewees.jason@epa.gov.

New and Revised 40 CFR Part 51, Appendix M, Test Methods

- **Methods 201A and 202 Revisions -** Revisions to Methods 201A and 202 for filterable and condensible fine PM emissions were promulgated on December 21, 2010 (74 FR 12970). Clarifications to the two methods were later included in the Final Rule: Revisions to Test Methods and Testing Regulations finalized on February 27, 2014 (79 FR 11228). Frequently asked questions (FAQ) for Methods 201A and 202 (see links at: http://www3.epa.gov/ttn/emc/promgate.html) provide further clarification on application of the methods for sources with emissions close to ambient temperature and sources with entrained water droplets in the emissions. We have completed the first phase of a new project to evaluate and propose minor changes to Methods 201A and 202. In 2015, we conducted stakeholder meetings to provide us with feedback and information on the best practices to minimize train blank bias. We plan to post a best practices handbook for Method 202 on the EMC website later this month (March 2016).
  Contacts: Ray Merrill, MTG, merrill.raymond@epa.gov or Jason DeWees, MTG, dewees.jason@epa.gov.

Source Category Approved Alternative Test Methods

These alternative method approvals, published on the EPA/EMC website at www.epa.gov/ttn/emc/tmethods.html, are broadly applicable alternatives to the methods required under 40 CFR Parts 59, 60, 61, 63 and 65 as set forth in the General Provisions and/or subparts therein. As such, they may be used by sources for determining compliance with the requirements of these Parts as per the applicability provisions specified in the approval without further EPA approval; however, the approval letter or memo should be included in the test plan and test report. The Administrator's delegated authority (presently the Leader of the Measurement Technology Group), has approved these methods for the specified applications; this approval has been documented through an official EPA letter. These methods include quality control and quality assurance procedures that must be met. Note that EPA staff may not necessarily be the technical experts on all these method alternatives.

- **Federal Register Notice on Broadly Applicable Alternative Test Method Approvals -**The first of these notices, published January 30, 2007 (72 FR 4257), announced broadly applicable alternative test method approval decisions that EPA had made prior to 2007 under and in support of the New Source Performance Standards and the National Emission Standards for Hazardous Air Pollutants. This notice announced our plans to issue broadly applicable alternative test method approvals in the future and to post these broadly applicable approvals on the EMC website as well as announce them in the Federal Register. The publication of these broadly applicable alternative test method approvals on our website provides information about options and flexibility for the regulated community that may reduce the burden on source owners and operators in making site-specific alternative test method requests and the permitting authorities and the EPA Administrator in processing those requests. Announcements of the broadly applicable approval decisions for 2007 through 2015 are published in the Federal Register on a yearly basis; the most recent was published on February 10, 2016 (81 FR 7092). All the broadly approved alternative test methods are published on our EMC website at: www3.epa.gov/ttn/emc/approaalt.html.
  Contacts: Lula Melton, MTG, melton.lula@epa.gov, Jason DeWees, MTG, dewees.jason@epa.gov and Robin Segall, MTG, segall.robin@epa.gov.

Other Test Methods

Other test methods or OTM, published on the EPA/EMC website at www.epa.gov/ttn/emc/tmethods.html, are test methods which have not yet been subject to the Federal rulemaking process. Each of these methods, as well as the

available technical documentation supporting them, have been reviewed by the EMC staff and have been found to be potentially useful to the emission measurement community. The types of technical information reviewed include field and laboratory validation studies; results of collaborative testing; articles from peer-reviewed journals; peer-review comments; and quality assurance (QA) and quality control (QC) procedures in the method itself. These methods may be considered for use in federally enforceable State and local programs (e.g., Title V permits, State Implementation Plans (SIP)) provided they are subject to an EPA Regional SIP approval process or permit veto opportunity and public notice with the opportunity for comment. The methods may also be considered as candidates to be alternative methods to meet Federal requirements in 40 CFR Parts 60, 61, and 63; however, they must be approved as alternatives under 40 CFR 60.8, 61.13, or 63.7(f) before a source may use them for this purpose. The methods are available for application without EPA oversight for other non-EPA program uses including state permitting programs and scientific and engineering applications. The EPA strongly encourages the submission of additional supporting field and laboratory data as well as comments in regard to these methods. The latest OTM posted are:

- **OTM 33: Geospatial Measurement of Air Pollution, Remote Emissions Quantification -** This test method relates to the general practice of using instrumented, ground-based vehicles to acquire information on air pollutant sources located in proximity to the driving route. Through specific sub-methods of OTM 33, source emissions assessments ranging from near-field inspection of small fugitive releases to whole facility mass emission rate measurements can be executed. Geospatial measurement of air pollution (GMAP) is a general term referring to the use of fast response instruments and precise global positioning systems (GPS) in mobile formats to spatiotemporally resolve air pollution patterns in a variety of use scenarios. General “mobile measurement” or GMAP applications can utilize many different instrumentation and mobility schemes to investigate numerous air quality questions on a range of spatial scales.

- **OTM 33A: Geospatial Measurement of Air Pollution, Remote Emissions Quantification, Direct Assessment** - This test method relates to use of instrumented, ground-based vehicles to acquire information on air pollutant sources located near the driving route and to estimate emissions in using a “direct assessment” approach (GMAP-REQ-DA). This method is used for one or more of the following three source assessment modes(SAMs): (1) concentration mapping (CM) used to find the location of unknown sources and/or to assess the relative contributions of source emissions to local air shed concentrations, (2) source characterization (SC) used to improve understanding of known or discovered source emissions through direct GMAP observation or through GMAP-facilitated acquisition of secondary measures (e.g. whole air canister grab samples), (3) emissions quantification (EQ) used to measure(or estimate) source emission strength. OTM 33A is applicable to characterization of non-extended (small in spatial extent) sources located in close proximity (generally between 20 m and 200 m) of the driving route.

- **OTM – 34: Method to Quantify Road Dust Particulate Matter Emissions (PM10 and/or PM2.5) from Vehicular Travel on Paved and Unpaved Roads** - This test method is designed to quantify road dust particulate matter (PM) emissions from vehicles traveling on paved and unpaved roads. The method relies on the measurement of the increase in PM concentrations over ambient background levels at one or more locations that are directly influenced by road dust that is emitted from the interaction of vehicle tires with the road surface.

- **OTM - 35: Measurement of Particulate Matter and Other Heavy Metal Emissions from Electric Arc Welding Processes -** This method was developed to quantify emissions of particulate matter (PM) and heavy metals from electric arc welding processes in order to create emissions factors. Welding fumes from different process/electrode combinations are captured inside a conical weld fume chamber and collected on an appropriate analytical fiber filter installed at the exit to this chamber. The filters are submitted to a laboratory for analysis of Cr (VI), total Cr, Mn, Pb, Ni and mass of total fume.

Tools for Improved Monitoring and Testing

- **Technical Foundation for Potential Future Optical Gas Imaging (OGI) Protocol –** In 2014/2015, MTG and MPG conducted studies to assess the technical underpinnings necessary to support a possible future rulemaking to govern the use of OGI for leak detection and repair or other work practice standards. We studied the detection capabilities for these instruments and parameter envelopes for their use. Some of the parameters of interest included background versus gas temperatures, homogeneity of the thermal background, effects of wind speed, relative humidity, and gas composition, and concentration-depth of the gas versus the performance of OGI instruments. A draft technical support document entitled "Optical Gas Imaging Protocol (40 CFR Part 60, Appendix K)" includes the results of these studies along with summaries of related studies from the scientific literature and can be found in the docket for the Oil and Gas NSPS at: www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2010-0505-4949
  Contacts: Jason DeWees, MTG, dewees.jason@epa.gov, Robin Segall, MTG, segall.robin@epa.gov and Gerri Garwood, MPG, garwood.gerri@epa.gov.

- **PM 2.5 Method Development for Wet Stacks –** There are two different projects attempting to address development of one or more test methods for fine particulate capable performing under wet stack conditions. One project has been focused on development of an instrumental method and the other on a method that would use a manual sampling train based on Method 201A. The development of these methods and technology is important for the state implementation plans (SIP) PM fine implementation program and for emission factor development. The instrumental method developed so far utilizes an in-stack droplet separator, followed by a dilution chamber with an ambient air Federal Reference Method or FRM at the end to measure the PM 2.5. A prototype CEMS has been successfully evaluated under dry stack conditions and has been tested under wet stack conditions. We have performed modeling to optimize the design of the inertial droplet separator (IDS) and then performed monodisperse testing on the resulting IDS at the University of Minnesota. These results showed promise, but more work is needed. As resources permit, we plan to continue with more modeling and some additional field work. The manual method is being funded by API and NCASI and we are providing input as they request it. We plan to post a draft of the manual method as an OTM later in 2016.
  Contact: Kim Garnett, MTG, garnett.kim@epa.gov and Jason DeWees, MTG, dewees.jason@epa.gov.

- **Handbook for Measurement of Greenhouse Gases –** Last year we completed a first draft of a Handbook which describes the methodologies and technologies used to measure emissions of the following greenhouse gases (GHGs) from point and non-point emissions sources: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), fluorocarbons (FC), sulfur hexafluoride (SF_6), and nitrogen trifluouride (NF_3). This handbook is intended to be a resource for regulatory agencies, industrial entities, and interested parties that are involved in GHG measurements. At this time the handbook is under EPA policy review and is expected to be finalized this Spring or Summer. Once finalized, the handbook will be posted on the EMC website and possibly several other websites which have yet to be determined.
  Contact: Dennis Mikel, MTG, mikel.dennisk@epa.gov.

- **Nanoparticle/Ultrafine Particles (UFP) Handbook –** MTG, in conjunction with EPA's Office of Radiation and Indoor Air (ORIA) has created a draft Handbook that describes current capabilities for measuring or sensing nanoparticles (NP) and nanomaterials (NM). This Handbook is meant to raise awareness and build a knowledge base regarding nanoscale sensing technologies, especially those emerging nano-enabled NP and gas sensors. It will serve as a resource for federal, state, and local agencies to aid in their appreciation and application of emerging technologies with the goal of furthering the technological outreach of the overall EPA's air program. Once the handbook is finalized, it will be posted on the EMC website, possibly later in 2016.
  Contact: Dennis Mikel, MTG, mikel.dennisk@epa.gov.

- **Stationary Source Audit Program (SSAP) and EMC Testing/QA Conference Call** –In 2010, we promulgated amendments (75 FR 28 55636; 8/13/2010) to the general provisions of 40 CFR Parts 60, 61, 63, and 51 to (1) allow accredited providers to supply stationary source audit samples and (2) require

affected sources to obtain these samples from the accredited providers and use them in compliance testing programs. A listing of the accredited audit samples providers and the methods for which audit samples are available is provided on the EMC website at www3.epa.gov/ttn/emc/email.html#audit. The availability of new audit samples is announced 60 days before they are required.

The EMC QA team conducts monthly teleconference calls for state/local agency and EPA Regional staff on the first Monday of every month from 1:30-3:00 pm (EST) to discuss emission testing issues. Agendas and invites for these conference calls can be obtained by contacting Candace Sorrell.
Contact: Candace Sorrell, MTG, sorrell.candace@epa.gov.

- **ASTM Activities** - EMC staff continue to participate as committee members on ASTM Subcommittees primarily to encourage development of new stack test methods especially where we anticipate a future need that is not met by a current EPA method. In addition, EPA considers all available voluntary consensus methods in the process of rulemaking and offers appropriate methods as regulatory alternatives. We are currently participating in or following ASTM standard development efforts for: (1) methods for low mass fireplaces, masonry heaters, hydronic heaters, wood heater (cordwood), and pellet stoves (Committee E06); (2) an opacity measurement method based on digital camera technology which is now published as an ASTM method, but will be updated in the near future (Committee D22); (3) a bag leak detector protocol for application to cement plants (Committee D22); and (4) the standard practice for competence of air emission testing bodies (Committee D22). We continue to follow workgroup activities in Subcommittee D22.03 to develop standards for SO_3 measurement as well as passive flare efficiency measurements.
Contacts: Ray Merrill, MTG merrill.raymond@epa.gov, Mike Toney, MTG, toney.mike@epa.gov and Jason DeWees, MTG, dewees.jason@epa.gov.

Electronic Reporting

- **Electronic Reporting and Recordkeeping Requirements for New Source Performance Standards (NSPS) Rule -** This rule will revise most of the subparts under 40 CFR Part 60 to require the submittal of stack test reports, CEMS performance evaluations (RATAs), notification of compliance reports, summary and excess emission reports and subpart specific reports similar to these types of reports (e.g., annual reports, semiannual reports) to the EPA electronically. The acquisition of these reports electronically will aid in regulation development, improvement of emissions factors and other air pollution control activities. This rule was proposed on March 20, 2015. We are currently working on responses to the public comments received and plan to finalize the rule by the end of 2016.
Contact: Gerri Garwood, MPG, garwood.gerri@epa.gov, 919-541-2406.

- **Implementation of Electronic Reporting –** We have already incorporated electronic reporting into over 50 subparts in 40 CFR parts 60 and 63. A complete list of these rules can be found at: http://www3.epa.gov/ttn/chief/ert/ert_rules.html. In the last year, we finalized requirements to electronically submit stack test reports into rules for the following sectors:
    - Aerospace (40 CFR Part 63 Subpart GG)
    - Brick and Structural Clay Ceramics (40 CFR Part 63 Subparts JJJJ and KKKK)
    - Ferroalloys Production (40 CFR Part 63 Subpart XXX)
    - Mineral Wool/Wool Fiberglass (40 CFR Part 63 Subparts NN, DDD and NNN)
    - Petroleum Refineries (40 CFR Part 63 Subparts CC and UUU)
    - Phosphate Fertilizer and Phosphoric Acid Production (40 CFR Part 63 Subparts AA and BB)
    - Primary Aluminum Reduction (40 CFR Part 63 Subpart LL)
    - Off-Site Waste Recovery Operations (40 CFR Part 63 Subpart DD)
    - Secondary Aluminum Production (40 CFR Part 63 Subpart RRR)

In addition to the requirement to report test data in the format generated through use of the Electronic Reporting Tool (ERT), we have promulgated other electronic reporting requirements in specific rules. The Industrial, Commercial, and Institutional Boilers and Process Heaters Rule (Boiler MACT) for major

sources contains electronic reporting of compliance reports, which includes CEMS summary data, parametric monitoring summary data and malfunction summaries. Boiler MACT for area sources contains electronic reporting of notification of compliance status reports. Portland Cement MACT requires electronic reporting of semiannual summary reports. And this past year we added a provision to the Petroleum Refining rule to require reporting of fenceline monitoring data electronically.
Contact: Gerri Garwood, MPG, garwood.gerri@epa.gov, 919-541-2406.

- **Electronic Reporting for Utilities –** The MATS interim rule allows pdf uploads for electronic reporting until April 16, 2017. This interim rule temporarily replaced the requirement to submit these reports via the format generated through the use of the ERT and with CEDRI fillable forms. We are currently working in conjunction with the Clean Air Markets Division (CAMD) on a proposal for consolidated electronic reporting of stack test reports and excess emission reports to CAMD's Emissions Collection and Monitoring Plan System (ECMPS).
Contact: Barrett Parker, MPG, parker.barrett@epa.gov, 919-541-5635.

Data Systems

- **The Compliance and Emissions Data Reporting Interface (CEDRI)** – CEDRI is located on EPA's CDX. CDX is the EPA's node on the Exchange Network, a web-based platform for data sharing between EPA and state, local, and tribal agencies. CDX is the application used by EPA programs and various stakeholders to manage environmental data transmitted to EPA in order to meet EPA's reporting requirements. CEDRI is an application within the CDX that supports the electronic submittal of reports required by 40 CFR parts 60 (NSPS) and 63 (NESHAP or MACT), i.e., performance test reports (ERT file upload), performance evaluation reports (ERT file upload), notification of compliance status reports (generally PDF upload), and excess emission reports (CEDRI fillable form). CEDRI supports aggregation of multiple reports into a single package for submission. Reports submitted via CEDRI are Cross-Media Electronic Reporting Regulation (CROMERR) compliant, meaning that the electronic signature is equal to a wet ink signature. Additional information can be found on the CEDRI website at https://www3.epa.gov/ttn/chief/cedri/. Questions can be sent to CEDRI@epa.gov.

  In the last year, we made the following enhancements to CEDRI:
  - Created reporting forms for:
    - RICE (40 CFR Part 60, Subparts IIII and JJJJ and Part 63, Subpart ZZZZ).
    - Portland Cement (40 CFR Part 63 Subpart LLL).
  - Added a bulk upload feature for certain reports. This feature allows users to upload reports for many facilities in one file instead of having to create a separate report for each facility. CEDRI currently supports bulk uploads for:
    - Area Source Boilers (40 CFR Part 63 Subpart JJJJJJ).
    - Major Source Boilers (40 CFR Part 63 Subpart DDDDD).
    - RICE (40 CFR Part 60, Subparts IIII and JJJJ and Part 63, Subpart ZZZZ).
  - Created the summary report and excess emissions report forms for subparts that point directly to the Part 60 General Provisions. The form was beta tested in January 2016, and we are currently working on revisions to address comments from the beta testers.
  - Added XML upload capability for all CEDRI forms that are currently in production.
  - Added an option for preparers to notify certifiers when packages are ready for signature.
  - Flagged all reports in CEDRI as to whether or not they are federally required.
  - Added upload option for stack test reports where reporting is not related to a federal standard (e.g., state permit).
  - Added Facility Registry System (FRS) map widget to allow users to remap facility location if system location is incorrect.
  - Updated report titles in CEDRI to align directly with wording in the applicable regulation.

- Developed a file transfer between ECMPS and CEDRI so that reports submitted to ECMPS under the MATS Rule are available to reviewers in CEDRI and the public in WebFIRE.
- Created a submission history export for state reviewers for facilities within their jurisdiction. The metadata for the reports will be contained in a CSV file. The metadata includes facility name, address, city, county, zip code, state, contact name, contact email address, report part and subpart, type of report submitted, and certification date.
- Consolidated notifications to a single notification for all reports in a submission package.
- Added notification filters for state reviewers based on report types and applicable subparts.

State, local, tribal and EPA regional office personnel can sign up to review reports submitted to CEDRI by sending an email to CEDRI@epa.gov. The email should include the reviewer's name, phone number, organization information (name, address, phone number) and email address.
Contact: Ketan Patel, MPG, patel.ketan@epa.gov, 919-541-9736.

- **The Electronic Reporting Tool (ERT)** – In early 2006, we made available a Microsoft Access© desktop application, called the ERT (https://www3.epa.gov/ttn/chief/ert/index.html), which creates an electronic alternative to paper reports for source emissions tests.

  We posted Version 5 of the ERT online for use on August 1, 2014. We continually review comments we receive on the ERT and update the ERT to address these comments. We most recently updated Version 5 on March 15, 2016. A complete list of updates to the ERT, as well as an historical update history, can be found on the ERT website. Some of the major updates that we developed for the ERT this past year include:
  - Developed a data dictionary for the ERT to assist with the conversion to a web-based ERT.
  - Added Modified Method 26A for 40 CFR Part 63 Subpart S (Pulp and Paper).
  - Added SW-846 Method 0010.
  - Added a split for reporting front and back half metals in Method 29.
  - Added field for CEMS O_2 values for RATAs to allow for calculation of corrected values for plant CEMS.
  - Added a notification flag for when process data is zero.
  - Marked data elements required for calculations with an asterisk (*).
  - Added Method 30B formulas to Field Result Calculations area of the ERT and the User's Manual.
  - Added attachment field for Method 18 and Method 320 data and supporting information for 40 CFR Part 63 Subpart LLL (Portland Cement). While Method 18 and Method 320 are not supported in the ERT, the regulation requires this data to be submitted electronically through CEDRI.
  - Updated SCC list.

  To download the ERT, access the user's manual, or learn about training opportunities, please visit the ERT website. Make sure to visit the "Tips, Tricks and Frequently Asked Questions" link on the website, which is currently being updated quarterly.
  Contact: Theresa Lowe, MPG, lowe.theresa@epa.gov, 919-541-4786.

- **WebFIRE -** We continue to implement our multi-part process to improve the air pollutant emissions factors program and to make the program self-sustaining. We posted The Draft Final Guidance on the Recommended Procedures for Development of Emissions Factors and Use of the WebFIRE Emissions Factor Database (http://www.epa.gov/ttn/chief/efpac/procedures/index.html) in August 2013. We are currently in the process of programming WebFIRE with these procedures and incorporating existing AP-42 supporting documentation into our WebFIRE database such that test reports that are electronically submitted to EPA will be easily and readily evaluated to determine if new or revised emissions factors should be proposed. We expect this effort to incorporate over 100,000 records into WebFIRE will be completed by fall 2016. At that time, procedures that allow users to develop their own emissions factors, as well as providing EPA the ability to determine if new or revised factors should be proposed, will be fully functional. Since 2012, we've enhanced WebFIRE so that it stores and retrieves reports (performance test

reports, Notice of Compliance (NOCs), air emission reports (AERs)) received from CEDRI. We've added a notification feature to allow users to receive email notifications once the report(s) are publicly available in WebFIRE. As of March 2016, WebFIRE contains over 6200 reports, including over 2600 stack test reports. This year we have improved the search capabilities for cases where a user's search returns more than 500 records. We have also improved and increased the search filters available, as well as improving the details available on the results page and adding a secondary set of filters once the original results are returned. Users can search for both reports and emissions factors on the WebFIRE website: https://cfpub.epa.gov/webfire/.

We are currently developing a report bulk download feature, which would allow users to download data for multiple reports at once instead of having to download files individually. To provide flexibility in generating the bulk files, there will be a results table containing separate columns to allow the user to create: (1) bulk files of reports and related attachments and/or (2) a bulk CSV file of ERT XML data. The second option will only be available for "true" ERT files. It will not be available for stack test reports being submitted as pdf files through ECMPS. EPA is also evaluating the use of a "ticketing" approach where the user would select the reports for inclusion in the bulk download, and WebFIRE would email the user when their bulk files are ready for downloading. We expect these enhancements to be available by summer 2016. Contact: Michael Ciolek, MPG, ciolek.michael@epa.gov, 919-541-4921.

- **Emissions Factors Update –** In April 2015, as the result of a consent decree, we finalized new emissions factors for VOC from flares at refineries and chemical plants, as well as new emissions factors for other refinery operations, including NOx, CO and THC from sulfur recovery units, THC from catalytic reforming units, NOx from hydrogen plants and HCN from fluid catalytic cracking units. We also finalized a revised emissions factor for CO from flares at refineries and chemical plants and issued a determination for no changes to the VOC emissions factors for tanks and wastewater treatment systems. The new and revised emissions factors can be found in AP-42 Sections 5.1, 8.13 and 13.5. For more information, including background on the consent decree, supporting documentation and response to comments received during the commenter period, see: https://www3.epa.gov/ttn/chief/consentdecree/index_consent_decree.html. Contact: Gerri Garwood, MPG, garwood.gerri@epa.gov, 919-541-2406.

- **Source Classification Code (SCC) Revisions Project –** We are in the process of updating and improving the point source SCCs. EPA uses SCCs to classify different types of anthropogenic emission activities. Each SCC represents a unique process or function that emits an air pollutant. SCCs are used for multiple applications such as NEI/EIS reporting, risk and technology review modeling, EPA's WebFIRE database, and the ERT. The SCCs are also used by many regional, state, local, and tribal agency emissions data systems. The objective of this project is to correct issues such as: remove outdated SCCs, remove duplicate SCCs, identify missing SCCs, and fix inconsistencies in the level of detail the SCCs provide. A comprehensive list of SCCs can be found on the EPA website (https://www.epa.gov/air-emissions-inventories/emission-inventory-system-eis-gateway). This past year, we created over 700 SCCs, deleted almost 600 duplicate SCCs and revised over 1800 SCCs affecting the following sectors:
    - Chemical Manufacturing
    - Coal Preparation and Processing
    - Fiberglass Manufacturing
    - Oil and Natural Gas
    - Chrome Electroplating and Steel Pickling
    - Mineral Wool Manufacturing
    - Ferroalloy Production
    - Marine Vessels Loading
    - Gold Mining
    - Plywood and Other Wood Products
    - Iron and Steel

  Contact: Ketan Patel, patel.ketan@epa.gov, 919-541-9736.

Improving Emissions Monitoring through Rulemaking

- **Information Collection Requests (ICRs)** – ICRs are a means by which we use our authority under section 114 of the Clean Air Act to collect source emissions and operational data in order to assist rule development. These requests generally require the use of the ERT to submit data from source testing. In support of rule writers and their ICRs, MPG and MTG staff maintain websites for responses to FAQ, hold webinars, expedite alternative monitoring requests, respond to telephone and email questions and update the ERT. We are currently in negotiations to develop a schedule to perform 39 Residual Risk and Technology Reviews. While we have not yet developed ICRs for these reviews, some of these future reviews may require testing. We are currently developing ICRs that include testing for the fiberglass sector, coke ovens and ethylene manufacturing.
  Contact: Theresa Lowe, MPG, lowe.theresa@epa.gov, 919-541-4786.

  Innovative Monitoring – We continue our implementation of new monitoring technologies in current and future rulemakings. In June 2015, we finalized the Ferroalloys Production rulemaking with a requirement to monitor opacity using the digital camera opacity technique (DCOT) in ASTM D7520-13. DCOT provides reliable, substantiated and unbiased opacity readings. This is the first EPA rulemaking under parts 60 and 63 to require the use of this monitoring technique. We previously approved the use of ASTM D7520-09 as an alternative to Method 9 in May 2012 (ALT-082). Additionally, in December 2015, we finalized the Petroleum Refining rulemaking along with Methods 325A and 325B, a method for monitoring the fenceline of a facility using passive sorbent tubes. Starting in February 2018, refineries will have to use Methods 325A and 325B to monitor benzene. The monitoring results will be reported to CEDRI and made available via a public website. The fenceline monitoring program aims to reduce the emissions coming from fugitive emission sources.

  MPG and MTG are currently working together on studies on the use of optical gas imaging (OGI, also known as “the camera”) as a replacement for traditional Method 21 leak detection monitoring. The studies will lead to the development of a protocol for OGI that will be promulgated as an appendix to 40 CFR Part 60. We expect that the protocol will outline calibration techniques, procedures for conducting surveys, training requirements for camera operators, and techniques to verify that your equipment can see the most prevalent chemical in your process unit. We proposed use of OGI in the Oil and Gas Sector rule in September 2015 and continue to contemplate its use for this sector.
  Contact: Gerri Garwood, MPG, garwood.gerri@epa.gov, 919-541-2406.