**Data Quality Record for Long-Term Performance Goals**

**Long-Term Performance Goal Text:** By September 30, 2026, reduce ozone season emissions of nitrogen oxides ($NO_x$) from electric power generation sources by 21% from the 2019 baseline of 390,354 tons.

**Corresponding Annual Performance Goal:** Tons of ozone season $NO_x$ emissions from electric power generation sources.

**Goal Number/Objective:** Goal 4/Objective 4.1

**NPM Lead:** Office of Air and Radiation (OAR)

**1a. Purpose of Long-Term Performance Goal:**
EPA operates seven nationwide and multi-state air pollution control programs that address major global, national, and regional air pollutants. This long-term performance goal (LTPG) tracks the ozone season nitrogen oxide ($NO_x$) emissions from sources in four of those programs: an annual $NO_x$ trading program, two ozone season $NO_x$ trading programs operated by EPA on behalf of 27 states in the eastern United States under Title I of the Clean Air Act, as well as a national $NO_x$ emissions reduction program for the power sector operated by EPA under Title IV of the Clean Air Act, the Acid Rain Program. Reductions in $NO_x$ emissions during the ozone season help areas attain ambient ozone standards. A continued trend of reduced emissions will convey the effectiveness of EPA's power sector programs.

**1b. Performance Measure Term Definitions:**
Under the Clean Air Act, EPA implements several regulations that affect power plants, including the Acid Rain Program (ARP), the Cross-State Air Pollution Rule (CSAPR), the CSAPR Update, and the Mercury and Air Toxics Standards (MATS). These programs require fossil fuel-fired electric generating units to reduce emissions of sulfur dioxide ($SO_2$), $NO_x$, and hazardous air pollutants including mercury (Hg) to protect human health and the environment.

$NO_x$ emissions are fossil fuel combustion byproducts that affect public health and the environment. $NO_x$ are precursors for fine particulate matter ($PM_{2.5}$) and ground-level ozone ($O_3$). Researchers have associated $PM_{2.5}$ and $O_3$ exposure with adverse health effects in toxicological, clinical, and epidemiological studies. Lowering exposure to $PM_{2.5}$ and $O_3$ contributes to significant human health benefits.

The ozone season corresponds to the warm summer months when ozone formation is highest (May 1 – September 30).

**1c. Unit of Measure:**
The unit of measurement is the percent reduction of annual ozone season $NO_x$ emissions. Annual ozone season $NO_x$ emissions are measured in tons.

**2a. Data Source:**
OAR's Clean Air Markets Division (CAMD), under the regulations in 40 CFR Part 75, collects continuously

monitored $CO_2$, $NO_x$, and $SO_2$, and under the regulations in 40 CFR part 63, subpart UUUU, collects continuously monitored mercury emissions data from electric generating units (EGUs) to check compliance with a variety of federal and state-administered air quality programs. EGUs are also required to submit operations data, facility information, monitoring plans, and quality assurance (QA) test information.

Hourly emission data are submitted to EPA at the end of each calendar quarter. An hourly emission file contains one calendar quarter of hourly and aggregate emissions measurements for a specified unit or group of related units sharing a common stack or pipe.

Each unit that is required to submit emissions data for a particular calendar quarter must be included in only one emissions file for that quarter. Each emissions file should contain all relevant operating, daily quality assurance, and emissions data for all units, common stacks, multiple stacks, or common pipes that were in a common monitoring configuration for any part of the quarter.

More information related to CAMD Data can be found here: CAMD Power Sector Emissions Data Guide (epa.gov).

**2b. Data needed for interpretation of (calculated) Performance Result:**
The baseline for this LTPG is 2019, and EPA projects a 21% reduction in ozone season emissions of nitrogen oxides ($NO_x$) in 2026.

- The ozone season $NO_x$ emissions for 2019 was 390,354 tons based on CAMD's historical data.
- The projected ozone season $NO_x$ emissions for 2026 is 309,003 tons based on the Engineering Analysis from the Revised CSAPR Update Rule (RCU).

In 2019, the ARP $NO_x$ program applied to 573 coal-fired units at 260 facilities. In 2019, the CSAPR annual $NO_X$ program applied to 2,231 affected coal-fuel-fired units at 693 facilities, and the CSAPR Update ozone-season $NO_x$ program applied to 2,560 affected EGUs at 822 facilities.

**3. Calculation Methodology:**
Reported results are the sum of $NO_x$ Ozone Season emissions for a given year, subtracted by the 2019 baseline results, then divided by the 2019 baseline year, and then multiplying the result by 100.

**4. Quality Assurance/Quality Controls:**
40 CFR Part 75 specifies detailed QA/QC requirements for initial certification and ongoing testing to ensure that the continuous emission monitoring systems (CEMS) are providing complete and accurate emission data. The QA/QC tests require the use of high-quality standard reference materials and multiple instruments performing simultaneous emission measurements. The QA/QC tests must be overseen by a qualified individual that has qualified for the Air Emissions Testing Body (AETB) certification. EGU monitoring plans, QA/QC test results, and hourly emission data are screened and analyzed using a battery of electronic checks, including statistical procedures to identify systematic bias, outliers, and other potential data problems. Each affected plant is required to maintain a written QA plan documenting performance of these procedures and tests.

The designated representatives (DRs) at the EGUs must submit monitoring plan, QA/QC test results, and hourly emission data to EPA using the Emissions Collection and Monitoring Plan System (ECMPS) software. The ECMPS conducts thousands of electronic checks on the data and provides instant feedback to DRs on data reporting problems, format errors, and inconsistencies. The electronic data file QA checks are described at https://www.epa.gov/airmarkets/business-center.

**5. Data Limitations/Qualifications:**
None.

**6. Technical Contact:**
Daniel Hopkins (OAR)

**7. Certification Statement/Signature:**

**I certify the information in this DQR is complete and accurate.**

**DAA Signature** Original signed by Elizabeth (Betsy) Shaw **Date** 5/10/2022