3.2 Primary and Backup Monitoring Systems

For each monitored pollutant or parameter, Part 75 requires a primary monitoring system to be designated. Data from the primary system must be reported if it is in-service. However, when the primary system is not able to provide quality-assured data, data from one of the following types of backup monitors or monitoring systems may be reported:

• ***Redundant backups***. A redundant backup monitoring system is a fully-certified, stack- or duct-mounted system that continuously records data and is kept on "hot stand-by" in case of a primary system outage. A redundant backup monitoring system is operated, maintained and quality-assured in the same manner as the primary system.

• ***Non-redundant backups***. A non-redundant backup monitoring system is a certified system that does not operate continuously. Rather, it is kept on "cold stand-by", and must pass a substantive quality-assurance test each time it is brought into service. For example, before a non-redundant backup gas monitoring system can be used for Part 75 reporting, it must pass a linearity check. The use of a non-redundant backup system is restricted to 720 hours per year at a given unit or stack location.

• ***Temporary Like-kind replacement analyzers***. A like-kind replacement analyzer is a gas analyzer of the same type as the primary (i.e., it monitors the same parameter by the same measurement principle). A like-kind replacement analyzer may be used temporarily for short periods of time when the primary analyzer malfunctions or needs maintenance. The replacement analyzer does not require certification, provided that it is connected to the same probe and sample interface as the primary analyzer, and that it is not used for more than 720 hours per year at a particular unit or stack location. A linearity check of the analyzer is required each time it is brought into service.

• ***Reference method backups***. EPA reference test methods (i.e., Method 6C for SO_2, Method 7E for NO_x, Method 3A for CO_2 or O_2, and Method 2 for volumetric flow rate) may be used to provide quality-assured data during CEMS outages.

Although it might save money initially, failure to have backup or redundant monitoring equipment could result in over-reporting of emissions in the long run. For example, suppose that the same CO_2 monitor is used to determine both CO_2 mass emissions and NO_x emission rate. When the CO_2 monitor malfunctions, the missing data procedures for both NO_x emission rate and CO_2 concentration must be applied, since both the NO_x–diluent and CO_2 monitoring systems are considered to be out-of-control. As previously noted, the Part 75 missing data procedures tend to produce increasingly conservative (i.e., conservatively high) emissions estimates as the PMA decreases. Therefore, long missing data periods may result in significant over-reporting of emissions and loss of allowance credits.