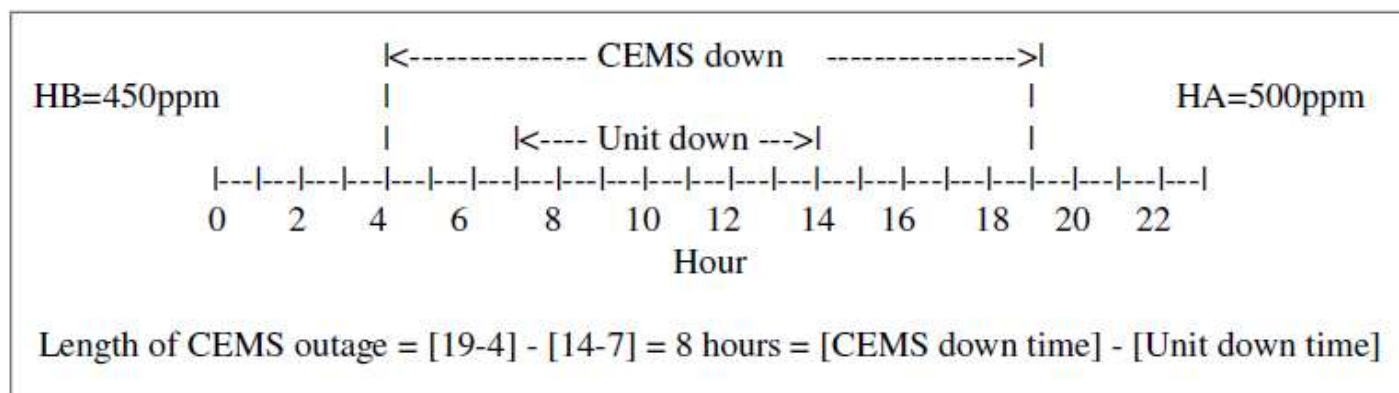# Question 14.4

Topic: Missing Data -- Unit Down Time

Question: How should the missing data algorithm handle the situation of a unit going off-line during a missing data period?

Answer: Do not include the hours when the unit is not operating as part of CEMS downtime or percent monitor data availability (PMA).
Consider the following example, diagrammed below:

During a 24-hour period, the CEMS is down from hour 4 until hour 19. Meanwhile, the unit is down from hour 7 until hour 14. The SO_2 concentration for the hour before (HB) the missing data period is 450 ppm, and the hour after (HA) value is 500 ppm.

```
                         |<-------------- CEMS down    -------------->|
HB=450ppm                |                                            |         HA=500ppm
                         |          |<---- Unit down --->|            |
         |---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
         0   2   4   6   8   10  12      14  16  18  20  22
                                    Hour
```

Length of CEMS outage = [19-4] - [14-7] = 8 hours = [CEMS down time] - [Unit down time]

Assume that the PMA of the SO_2 monitor is · >= 95%. As illustrated above, the missing data period is 8 hours, when the unit downtime is excluded. Therefore, according to § 75.33(b)(1)(i), the appropriate substitute data value to fill in gaps from hours 4 to 7 and hours 14 to 19 is the average of the hour before and hour after values, i.e., (HB + HA)/2 = (450 + 500)/2 = 475 ppm.

References: § 72.2, § 75.33(b), Table 1 in § 75.33

History: First published in November 1993, Update #2; revised in 2013 Manual