DALMIA CEMENT (B) LIMITED DALMIAPURAM INSTRUMENTATION DEPARTMENT			
Issue No. 01	**Rev. No: 00**	**Effective Date: 25.05.2016**	**INST/SOP/21**
Issued By: S & P		**Approved By: HOD - INSTRUMENTATION**	
SOP for Calibration of Rosemount Gas Analyzer			

Scope: Checking and Maintenance of 4th stage Gas analyser.

Responsibility: Instrumentation technician.

Accountability: Instrumentation - Section Engineer.

PPE:

- Safety shoe
- Hand gloves

Tools required:

- Multimeter
- Tester
- Screw Driver
- Ring spanner
- Cylinder Key

Hazard Analysis:

Risks associated	Mitigating Measures
Electrocution	Use Insulated hand glove and Tools

Procedure

Zero calibration for CO Analyser

1. Connect zero gas (N2) at the input port and maintain 200CCM (i.e., 12Litre) in the rotometer by adjusting the test gas cylinder opening.

2. Now press 'function' button in controller.
3. Display shows 0. -1 ->chennal1(for CO)

   (Here single dot next to zero indicate cylinder value).
4. Press "ENTER" button. Now display shows CODE0.
5. Change in to "CODE1" by using up-arrow then press "ENTER" button.
6. Press ENTER button once again
7. Display shows 0 . . -1 (here double dot indicates the set point, if it is required we need to set this value but it should be the mentioned value in the cylinder).
8. Press ENTER button and wait for 10sec (response time).
9. Display shows 0 . . . -1> (Triple dot indicates response or analyser value).
10. If deviation or error is there press ENTER button until the display shows 0 . . -1 (set value).
11. Check here it should be '0' otherwise make it to zero by using arrow keys.
12. Now ensure that all values are same. (use 'enter' key)
13. Press 'FUNCTION' key to exit from the calibration.

Zero calibration for O2:

14. Now press 'function' button in controller.
15. Display shows 0. -2 ->chennal2(for O2)

    (Here single dot next to zero indicate cylinder value).
16. Press "ENTER" button. Now display shows CODE0.
17. Change in to "CODE1" by using up-arrow then press "ENTER" button.
18. Press ENTER button once again

19. Display shows 0 . . -2 (here double dot indicates the set point, if it is required we need to set this value but it should be the mentioned value in the cylinder).
20. Press ENTER button and wait for 10sec (response time).
21. Display shows 0 . . . -2> (Tripple dot indicates response or analyser value).
22. If deviation or error is there press ENTER button until the display shows 0 . . -1 (cylinder value).
23. Check here it should be '0' otherwise make it to zero by using arrow keys.
24. Now ensure that all values are same. (use 'enter' key)
25. Press 'FUNCTION' key to exit from the calibration.

Span calibration for CO Analyser

26. Remove the zero cylinders then connect CO cylinder and maintain 200CCM in rotometer.
27. Now press 'function' button in controller three times..
28. Display shows 5 . -1 ->chennal1(for CO)

    (Here single dot next to zero indicate cylinder value).
29. Press "ENTER" button. Now display shows CODE0.
30. Change in to "CODE1" by using up-arrow then press "ENTER" button.
31. Press ENTER button once again
32. Display shows 5 . . -1 (here double dot indicates the set point, if it is required we need to set this value but it should be the mentioned value in the cylinder).
33. Press ENTER button and wait for 10sec (response time).
34. Display shows 5 . . . -1> (Tripple dot indicates response or analyser value).
35. If deviation or error is there press ENTER button until the display shows 0 . . -1 (set value).

36. Check here it should be the value mentioned in the cylinder otherwise makes it to the certified value by using arrow keys.
37. Now ensure that all values are same. (use 'enter' key)
38. Press 'FUNCTION' key to exit from the calibration.

Span calibration for O2 Analyser

39. Remove the CO cylinder then connect O2 cylinder and maintain 200CCM in rotometer.
40. Now press 'function' button in controller four times.
41. Display shows 5. -2 ->chennel2(for O2)
    (Here single dot next to zero indicate cylinder value).
42. Press "ENTER" button. Now display shows CODE0.
43. Change in to "CODE1" by using up-arrow then press "ENTER" button.
44. Press ENTER button once again
45. Display shows 5 . . -2 (here double dot indicates the set point, if it is required we need to set this value but it should be the mentioned value in the cylinder).
46. Press ENTER button and wait for 10sec (response time).
47. Display shows 5 . . . -2 -> (Tripple dot indicates response or analyser value).
48. If deviation or error is there press ENTER button until the display shows 0 . . -1 (set value).
49. Check here it should be the value mentioned in the cylinder otherwise make it to the certified by using arrow keys.
50. Now ensure that all values are same .(use 'enter' key)
51. Press 'FUNCTION' key to exit from the calibration.

Note:

Here,

0 . . . 1 or 0 . . . 2 || 5 . . . 1 or 5 . . . 2 indicates

0 = ZERO CALIBRATION

1 = CHANNEL 1(CO)

2 = CHANNEL 2(O2)

5 = SPAN CALIBRATION.

First dot = cylinder value.

Second dot = actual set point.

Third dot = analyser value.

Emergency / Emergency Shut OFF:

1. If any unconsciousness is there, give First aid and inform to the Safety department or Call Emergency number 222/233/9865155288

Records/Annexure:

1. Refer Line clearance certificates.
2. JSA as enclosed below.

JOB SAFETY ANALYSIS: (JSA)

Job Safety Analysis	Job: Calibration of Rosemount Analyser	Date: 25.05.2016	Analysis by: Section Incharge	Reviewed by: Section Head
Title of employee doing job: INST - TECHNICIAN	Supervisor: Section Engineer	Department: Instrumentation	Section: Pyro / Coal mill	Approved by: HOD - Instrumentation
Req'd/recommended PPE: Safety shoes and hand Gloves.				
Sequence of Basic Job Steps	**Potential Hazards**	**Recommended Safe Job Procedure**	**What Could Go Wrong**	**Corrective Action**
Apply the zero and Span gas.	While applying zero and span gas Cylinders to be moved near panel may fall on leg	Use safety shoes and stand clear and ensure cylinders placed on plain surface with proper support	Cylinder may fall on leg and injury may happen	Use Safety shoes and stand clear during work