DALMIA CEMENT (B) LIMITED – CEMENT PLANT ARIYALUR INSTRUMENTATION DEPARTMENT			
Issue No. 01	**Rev. No: 02**	**Effective Date: 20.09.2017**	**SOP/INST/06**
Issued By: M.R		**Approved By: HOD-INSTRUMENTATION**	
SOP FOR NUCLEONIC LEVEL GAUGES MAINTENANCE			

Scope/Purpose: This SOP is applicable to Safe working with Nucleonic level gauges

Responsibility: Instrument Mechanic / Section Engineer.

Accountability: Section In-Charge

PPE:

1. Hand gloves
2. Safety Shoes
3. Safety goggles
4. Safety Helmet
5. Nose Mask

Tools:

1. Radiation Survey meter.
2. Multi Meter.
3. Adjustable Spanner.

Hazard Analysis:

Risks associated	Mitigating Measures
Exposure to radiation	Lock the Radiation source before working. Don't Stay near Source for long time.

Training needs:

1. Emergency preparedness.
2. Awareness of radiation hazards.

Procedure:

1. Use Proper PPE's.
2. Carry all the necessary tools in a tool bag.
3. Ensure the signal interlocks and block the interlock if necessary.
4. Lock the source before starting the work.
5. While working with Gamma Rays Counter (Nucleonic gauges), always try to finish work quickly and leave the place immediately.
6. Never stand more than Two minutes near to the source.
7. Check radiation level with Survey meter and ensure the radiation is nil.
8. Check and ensure the water incoming & outgoing flow of the detector cooling jacket.
9. Check and ensure the DC voltage at Detector, it should be 10.70 VDC approx.
10. After completion of work unlock the source.
11. Check the dose rate near surface of detector with source 'ON' with radiation survey meter, it should be 0.4mR/hr to 1mR/hr Approx.
12. Confirm the signal in CCR.
13. Retrieve the blocked condition.
14. Give the clearance to CCR.

Emergency / Emergency Shut OFF:

1. Lock the source

Records/Annexure:

1. Radiation level check list.
2. Half yearly report of Nucleonic gauges status submission to RSD, AERB INDIA
3. JSA

JOB SAFETY ANALYSIS:(JSA)

Job Safety Analysis	Job: Maintenance of NLG	Date: 06 – 07 - 2012	Analysis by:	Reviewed by:
Title of employee doing job: Instrument Mechanic	Supervisor: Section Engineer	Department: Instrumentation	Section: Pyro	Approved by:
Req'd/recommended PPE: Hand gloves, Safety Shoes, Safety goggles, Safety Helmet, Nose Mask				

Sequence of Basic Job Steps	Potential Hazards	Recommended Safe Job Procedure	What Could Go Wrong	Corrective Action
Lock the source	Exposure to radiation	Never stand more than two minutes near to the source.	Will lead to skin cancer and other abnormalities.	Leave from the source area immediately after locking.
Working near to the detector	Exposure to radiation	Measure the dose rate	Will lead to skin cancer and other abnormalities.	Check and ensure the radiation is nil.
Check the cooling water flow	Water temp. High.	Wear hand Gloves	Minor burn injury	Wear Proper PPE's
Voltage measurement	No hazards as it 12 VDC.	Use Insulated probe Multi meter.	May get short.	Proper training.
Unlock the source.	Exposure to radiation	Never stand directly in front of the beam of radiations	Will lead to skin cancer and other chronic abnormalities	Leave the place immediately after completion of work.