DALMIA CEMENT (B) LIMITED – CEMENT PLANT ARIYALUR INSTRUMENTATION DEPARTMENT			
Issue No. 02	**Rev. No: 00**	**Effective Date: 01.11.2019**	**SOP/INST/017**
Issued By: M.R		**Approved By: HOD (INSTRUMENTATION)**	
SOP FOR CHECKING OF CROSS BELT ANALYSER			

Scope : This SOP is applicable to Safe working for checking of cross belt analyzer

Responsibility : Instrument Technician.

Accountability : Instrument -Section Engineer.

PPE:

1. Safety helmet,
2. Safety shoe,
3. Mask.
4. Gloves.

Tools:

1. Digital Radiation Monitor
2. Dosimeter

Hazards:

Risks associated	Mitigating Measures
Radiation (cancer)	Drink & bath in chiller water

Training needs:

1. People have knowledge to work in radiation.
2. Emergency procedure

Procedure:

1. Line clearance & Work permit to be taken for Belt conveyor.
2. Use Proper PPE & tools.
3. Inform to RSO with his present radiation level should be measure.
4. After measure the radiation level if it is with in allowable limit he can approve to do work.

5. No other persons should be permitted near to cross belt analyzer area (3m distance).
6. Do not stray or sit on top of the CB OMNI for more than 2 minutes & Do Not enter in restricted Area.
7. Never operate damaged equipment or equipment with damaged cables.
8. Do not stay or peer into the tunnel at the entrance or exit of the CB OMNI for more than 60 sec.
9. The safe distance for an unshielded source or source totaling 60 micro grams is 12 meters.
10. If an emergency situation develops where the sources become unshielded (such as an explosion or fire), limited personnel access to a distance of 40 feet (2 meters).
11. Never remove the safety cover in the Electronics Enclosure with power applied to the Electronics Enclosure. Very high voltages for detector operation are present behind the safety cover panel.
12. If the Electronics Enclosure temperature exceeds 60 degree centigrade, do not continue to operate the CB OMNI. Shut down the Op Con and turn off the MAIN breaker in the Electronics Enclosure until repairs can be implemented.
13. Before you power down or reboot the Electronics Enclosure the Op Con system software should be shut down properly in order to avoid data loss and life system corruption.
14. Never move the analyzer assembly nor the lower or upper sections of it, with the sources installed.
15. If communication is healthy Enter user name & password in CBA system in LAB.
16. After login in to system all supporting file will run, then analysis screen will be open it.

17. For analysis purpose TPH & belt speed should be maintain as per standard.
18. For Stock pile CBA the belt width is 1400mm, the belt loading should be greater than 160 kg/m.
19. For Stock pile CBA the belt width is 1000mm, the belt loading should be greater than 75 kg/m.
20. After completion of checking of CBA, check the radiation level observed by person whom worked in that area.
21. The Activity of the Source is 20m ci, so the radiation levels from the source to a particular distance are as follows.

Inspecting the tunnel daily.....5.4 mrem (54μSv)

- Walking by the analyzer 10 times/day.....21 mrem (210μSv)
- Working on top of the analyzer .....6.8 mrem (68μSv)
- Working on the Idler Assemblies.....7.2 mrem (72μSv)
- Maximum for one person…… ...40 mrem (400μSv)

Annual U.S. Regulatory Limits

- Body..... 100 mrem (1mSv)
- Eyes ..... 1,500 mrem (15mSv)
- Hand & Feet..... 5,000 mrem (50mSv)

Not to exceed 25% of above limits per quarter per year

Emergency / Emergency Shut OFF:

The radioactive source may leak or be exposed as a result of an accident, such as damage to or destruction of the analyzer by fire or impact, the following steps to be followed,

1. Open the electronics Enclosure and turn OFF the MAIN circuit breaker. It is located on the left side of the cabinet.

2. Authorized individual can move the sources from CB OMNI to the source shipping container.
3. Otherwise, restrict access to the CB OMNI by roping off a 40 foot (12 meters) radius from the suspected location of the sources.
4. Notify the appropriate local authorities for an emergency response.
5. Notify Thermo Fisher Scientific as soon as possible.

Records/Annexure:

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

JOB SAFETY ANALYSIS: (JSA)

Job Safety Analysis	Job: Cross belt analyzer checking	Date: 20.09.2017	Analysis by: Section Head	Reviewed by: HOD
Title of employee doing job: INST - TECHNICIAN	Supervisor: Section Engineer	Department: Instrumentation	Section: Robo lab	Approved by:
Req'd/recommended PPE: Safety helmet, Safety shoe, Mask & Gloves.				

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Sequence of Basic Job Steps	Potential Hazards	Recommended Safe Job Procedure	What Could Go Wrong	Corrective Action
1.Take the line Clearance for the belt conveyor	Possible for electrocution during isolation	Use PPE and Insulated Hand gloves	Resulting electrocution	Rubber mats should be provided in load center
2.Measure the Radiation level of the Source near by the working area.	Radiation level may be high.	Only authorized Radiological safety officer should check the radiation level with Necessary instruments.	Irritation in health	Check the Radiation level meter healthiness and calibration period
3.Clean the Analyzer internal housing	Possible for radiation effect	Clean the analyzer from two meter distance	Irritation in health	Use proper length of cleaning tool
4.Static calibration of analyzer	Possible for radiation effect	Keep the standard sample pad two meter away from the analyzer	Irritation in health	Use proper pad for sample stacking and use 8 meter rope for locating the Sample in the analyzer

