CONVEYER OPERATION AND MAINTENANCE TRAINING

20 to 22 July 2015
Gautrain Radisson Blu Hotel, Sandton, South Africa

The workshop will train plant operating and maintenance personnel and engineers on how belt conveyors work and how they can be improved to make them more efficient.

The focus will be on the in-depth methods that improve the safety, performance and payback of the belt conveyor system, through controlling fugitive material and improving system efficiency.

The course will provide cutting edge solutions to improving conveyor productivity by providing thorough discussions on topics and techniques that enhance the performance of belt conveyors.

Benefits of attending:
- Gain an in depth understanding of belt conveyors applicable to mining and plants.
- Understand the basics of conveying bulk materials by means of belt conveyors.
- Learn about belt width, speed, loading and trajectory.
- Understand aspects of belt cleaning, tramp iron removal and environmental implications for overland conveyors.
- Understand belt safety issues with particular emphasis on stored energy and how lethal this energy becomes in a conveyor. Extreme tensions are discussed.
- Get up to date with conveyor take up technology, idlers, holdbacks, power packs and all components used on conveyors.
- Understand tracking and training of conveyors and how and when to apply tracking principles.
- Learn about splicing basics

The Workshop will address the following:
- Where and why conveyors are used and how they are integrated with other processors in plants
- Conveyor basics
- Conveyor layout and profile
- Trajectory
- Belt speed limitations
- Belt width and class
- Design method-ISO 5048
- Conveyor design example
- Maintenance programs

Who should attend:
- Conveyor design engineers and technologists
- Mechanical draughts persons
- Plant owners and operators
- Conveyor maintenance personnel
- Conveyor inspectors
- Government and other statutory inspectors

Alan Exton. Accrete Consulting (Pty) Ltd. NTD Mechanical Design.

Alan has been involved in the mining industry since 1969. After seven years employment in the mines, he joined the private sector as a design engineer.

He was involved in the design field of both coal and hard rock mining equipment for various companies until 1990. Alan entered the Bulk Materials Handling Field and in July 1995 he was appointed the founding Managing Director of the South African leg of an International Bulk Materials Handling Company with the Head Office based in NSW, Australia. He held this position and took early retirement in June 2008 after 13 years. This period included the Design, Manufacture, Installation and Commissioning of Belt Conveyor Systems mainly for, but not limited to, the Underground Mining Sector.

He presently holds the position of Owner and Managing Director of Accrete Consulting (Pty) Ltd, and consults on conveyors to the Bulk Material Handling industry. He is also involved in professional conveyor training to end users and students.

Alan has conducted conveyor courses in South Africa, Turkey and Mozambique.

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Course Content

08h00 Registration and morning refreshments

Conveyors in SA and the World, the Role of Conveyors in Bulk Material Handling
- Background to conveyors. Where they are used and for what reasons.
- Incline, flat and decline conveyors.
- Conveyor profiles.
- Belt conveyors in process plants, underground mines, open pit mines, overland haulage and other applications.
- Section belts, Trunk Belts, Shaft Belts.

Conveyor Basics
- Other types of conveyors: Screw, Pipe, HAC, Stacker Reclaimers, Elevated Conveyors, Trestles, Gantries etc.

Conveyor layouts and profiles
- Various conveyor profiles and design layouts and where certain types are used in preference to others.
- Detailed description of high capacity shaft conveyor systems including aspects of the shaft conveyor system.

Conveyor component overview
- Beltling, pulleys, carry idlers, return idlers, power packs, ls couplings, HS couplings, take up units, belt turnovers, scrapers, skirts, ploughs, MCC’S, loading chutes, delivery chutes, belt monitoring systems, and electrical safety equipment.

Ancillary Equipment
- Apron feeders, vibratory feeders, reciprocating feeders, belt feeders, hand controlled gates, dead box chutes.

Trajectory
- Trajectory profiles of conveyors and how it varies with loading, belt speed and material mass.

Materials - Nature and properties of bulk material and material characteristics
- Materials types and comparing differences in basic characteristics such as angle of repose, angle of surcharge, abrasive index, lump size, moisture content, and bulk density.
- Material characteristic tables presented and discuss fundamental differences.

Belt Inspection
- Belt inspections from visual to monitored systems.

Maintenance Programs
- Discussing maintenance programs and the importance of planned maintenance.

Conveyor troubleshooting
- Conveyor troubleshooting and what to look for. Finding solutions to remedy them.

Belt Tracking
- Presenting and discussing issues pertaining to belt tracking and how to remedy a poorly tracked conveyor. Discuss skew splices.

Belt Splicing
- The basic theory for splicing of ply, steel cord and solid woven belting.
- Adequate pictures to compliment the theory.
- Belt jointing by means of plates, clips and staples.

Electrical Systems - belt safety devices
- All aspects of electrical safety including mandatory and non-mandatory safety measures.

Guards
- Guarding of conveyors at critical points (including fences). Nip guarding at nip points. Man crossing bridges on overland conveyors.

Risk Assessment
- Risk Assessments discussed in detail.

Stored Energy
- Issues pertaining to stored Energy. Actual examples of stored energy and trapped energy within a conveyor.

Conveyor Maintenance
- Maintenance issues including on site handling and storage of belting. Correct methods of handling and installing belts. Importance of return strand belt cleaning. Belt turnovers for environmental protection.

Pulley & Idler Alignment
- Correct methods employed to align pulleys and idlers.
- Pulley build up and crowning.

Belt Loading Practices
- The importance of correct loading methods at the loading point.

Belt Sequencing
- Effects of poor belt sequencing and belt slip.