



309 W Fifth St
Pella, Iowa 50219
641-628-0055
averdsn@gmail.com

Case Study: Power Saving from Realigning Idlers in an Underground Coal Mine

Summary: Bob Sandige of S and L Industries of Clay, Kentucky requested a trial of the potential benefit of realigning idlers on a belt conveyor at Hamilton County Coal in Southern Illinois. Two underground belt conveyors, both with torque monitoring capability, and a downstream scale, were considered good candidates for the trial. In October 2016, tape measurements indicated that idlers may have been installed with an average 0.3 in. out of parallel based on a small sample of the Slope Feed Belt conveyor. Though another conveyor measured at 0.56 in., the 1200 ft. x 72in belt width Slope Feed Belt was chosen due to accessibility. Early in 2017 the idlers were realigned on an overnight maintenance shift using the Alignment Verification Rig (AVR) to indicate perpendicularity of the idler center roll to the belt edge. Two men took 4 hours to realign the idlers typically by ¼ in. but up to 1 in. **Annualized power cost savings were estimated to be \$4740 for a labor payback of less than one month.**

Allen V Reicks P.E.
AVERDSN LLC
641-628-0055
averdsn@gmail.com

Test Details

- Slope Feed Conveyor
 - 600 hp at 870 fpm
 - flat and about 1200' long
- Continental OR-C 7" x 72", idlers
 - CEMA E rolls,
 - roof hung structure
- Required special AVR design to straddle non-standard frame.

Per Sandige:

- March 6, 2017 -aligned the idlers Saturday night on midnight shift
- 2 men for 4 hours
- Adjusted idlers from ¼" to 1"
- AVR is "Easy to use"
- Beam projects 20 ft to belt edge target.