

## **Agenda**

### **NTETC Belt-Conveyor Sector**

### **February 24, 2011**

#### **I. Carry-over items from 2010 Meeting**

##### **a. Report from the 2011 NTEP Committee on changes to Publication 14**

Several changes to Pub 14 were approved by the Sector during the February 2010 meeting and are noted in the 2010 Sector meeting's summary. These amendments were recommended to reflect changes to NIST Handbook 44 requirements in the Belt-Conveyor Systems Scale Code (2.21.) and included the following sections in Pub 14:

- Section 14, paragraph 1.8 to reflect changes in HB44 S.1.3.1.
- Section 13, Field Performance Test of the Belt-Conveyor Scale – N.2.1. Initial Verification
- Section 13, Field Performance Test of the Belt-Conveyor Scale – (consolidation and renumbering of) N.3.1.2., N.3.1.3., N.3.1.4.
- Section 6, Zero Setting Mechanism.

Jim Truex, NTEP Administrator, will update the sector of any NTEP Committee actions or recommendations.

##### **b. Proposed Update to NCWM Publication 14 Belt-Conveyor Scale Checklist**

Update on checklist that was developed and offered for use on a trial basis by NTEP labs when evaluating manufacturer's replacement instruments that are scheduled to undergo NTEP evaluation. During the February 2009 meeting, Thermo-Ramsey stated that they would possibly have an instrument that could be submitted NTEP where this checklist could be used on a trial basis. During the February 2010 meeting the manufacturer, Merrick indicated that they also may have an instrument to submit for type evaluation. No comments or suggestions have been received as of yet from the manufactures. Both Thermo-Ramsey and Merrick are asked to update the sector on the status of their evaluations of the draft checklist.

##### **c. Develop a List of Sealable Parameters for BCS Systems**

A list of device features and parameters which were determined as items that should be protected by some form of security seal was developed during the 2009 NTETC BCS Sector meeting. This list was to be forwarded to NTEP laboratories for use on a trial basis and after which comments and recommended amendments would be forwarded to the Sector WG for further development. An update on the usefulness of the list is needed so the listing may be amended if needed and recommended for approval by the NTEP Committee.

## **II. New business**

*(Note: Discussion of the first two of the following items may be related to a similar agenda item during the February 23-24 meeting of the USNWG for BCS that precedes the NTETC Belt Conveyor Scale Sector meeting).*

### **a. Linearization feature for BCS**

Manufacturers and service agencies of BCS have voiced support for the use of an internal feature within electronic instruments that use linearity correction (i.e. multiple point calibrations) to reduce span errors that deviate from a linear pattern. The USNWG on BCS is deliberating on the use of a linearization feature for enhancing the performance of belt-conveyor scale systems and whether there is a need to develop requirements within HB44 to address it. Test procedures may need to be analyzed and developed or amended to verify if this feature complies with the HB 44 specifications, tolerances or other technical requirements adopted in HB 44

### **b. Belt profiling**

The USNWG is also debating the use of a belt-mapping or profiling to establish zero references for defined lengths of the belt on belt-conveyor scale systems. Current HB44 and OIML R51 requirements were developed for systems that average the weight of belt units by continuously weighing the belt as it passes over the scale portion of the conveyor. The belt-mapping or profiling feature establishes a zero reference for the belt-conveyor scale by establishing a profile of the belt carcass where the weight of individual segmented units of the belt are established and have distinct weight values associated with them. The instrument synchronizes the application of a tare weight associated with distinct segments of the belt with the movement of the belt segments over the scale portion of the conveyor. If profiling is used there is a need for a procedure to evaluate its effectiveness and ensure that correct operation is maintained during totalization. Evaluation should include verification of this feature's ability to track and compensate for changes in the belt carcass due to temperature and loading conditions. Procedure(s) need to be developed to verify its operation during type evaluations.

Type evaluation procedures should also verify that this feature cannot be disabled without breaking a security seal (see also 1.b. above).

### **c. Provision for sealing**

Should BCS Publication 14 Checklist and Test Procedures, Section 1.1 include HB 44, G-S.8 as a code reference for sealing a device?

The first paragraph of Handbook 44 General Code requirement **G-S.8. Provision for Sealing Electronic Adjustable Components** is nearly identical to that of HB BCS Code paragraph **S.5. Provisions for Sealing**. **S.5** differs in that it does not include references for automatic or semi-automatic calibrations mechanisms whereas **G-S.8** includes a second paragraph in the

requirement addressing automatic or semi-automatic calibrations. If automatic or semi-automatic calibrations mechanisms are incorporated into belt-conveyor scale systems the sector should address this inconsistency.

**d. Clarification of guidelines for selection of instruments to undergo type evaluation within “family” classification and Parameters Listed on the Certificate of Conformance.**

During the February 2010 meeting of the NTETC Belt-Conveyor Sector meeting the members acknowledged that the existing language in NCWM Pub 14 BCS Sections A through G is vague and that it would be useful for criteria used in the selection of instruments to undergo evaluation as representative of a certain type or family to be further defined.

The existing language categorizes devices by the number of weigh idlers used for the weighing portion of the belt-conveyor and, a 10:1 ratio based on the size, loading and speed of the belt/weighbridge.

Some examples of additional requirements for a suitable representative device may be:

- One that includes all possible interfaces (Communication ports, remote calibration, etc.);
- Similar or the same type of load cell or load receptors (Should there be a limited capacity range for substitution of load cells or for load cells listed on the CC?);
- Single speed or variable speed operation;
- Method of zero calibration and maintenance; and
- Other metrological features such as those found listed in the Sector’s proposed table of “Belt-Conveyor Scale Features and Parameters” (See 1.b. above) such as:
  - Selection of measurement units;
  - Division value, d; and
  - Range of over capacity indications.