Review of Calvert City Terminal

2007-503I

August 17, 2007

Summary

Our objective was to assess the key control activities and the scale certification process applicable to Tennessee Valley Authority (TVA) coal shipments at Calvert City Terminal (CCT). We found:

- CCT has processes and key control activities in place at the terminal for the receiving, blending, weighing, and loading of the coal it handles for TVA. CCT also appears to have adhered to the scale certification requirements prescribed by the TVA contract.
- Barge shipments were generally recorded accurately in the CCT database and the TVA Daily Coal Report (DCR) database. However, we found:
  - One barge shipment where CCT documentation showed the barge being sent to the TVA Colbert Fossil Plant (COF). According to TVA Fuel Supply (FS) personnel, the barge sank in August 2006 in route to COF. As of August 10, 2007, FS had not recovered the loss.
  - Discrepancies with some barge shipments that apparently resulted from keying errors on the part of TVA and CCT personnel.
- Train deliveries were generally recorded accurately in the CCT database and the TVA Fossil Fuel Decision Support (FFDS) database. However, we found:
  - One train delivery was actually sent to the Grand Rivers Terminal (GRT) and was mistakenly recorded as received at CCT in FFDS. FS is working to determine the effect on coal quality and survey adjustments.
  - Five train deliveries, totaling about 73,000 tons, was actually sent to CCT and were mistakenly recorded as received at GRT in Fuelworx and FFDS.
  - Discrepancies with some train deliveries that apparently resulted from keying errors on the part of TVA and CCT personnel.

Background

CCT was developed as a partnership between Southern Coal Handling Co., Inc., a coal handling, engineering, and operations organization and Ashley Capital, an investment firm, to provide for the receiving, blending, and transloading of western and Illinois Basin coals.

Calvert City Terminal

- TVA has contracted with CCT through calendar year (CY) 2008 for the transloading, stockpiling, and blending of TVA coal.
  - TVA can stockpile up to [Redacted] of coal at CCT without incurring storage charges.
- CCT has a stockpile capacity of about [Redacted] of coal.
- According to CCT personnel, as of June 26, 2007, (1) CCT had about [Redacted] of coal stockpiled at the terminal, and (2) TVA makes up about [Redacted] of CCT's business.

Background (continued)

- In November 2005, we completed a review of the CCT (Inspection Report 2005-530I). Management requested that we schedule a follow-up inspection after CCT's recently implemented scale certification process had occurred for at least one year.
- TVA is contractually obligated to have a minimum number of tons delivered to CCT each year. Specifically:
  - [Redacted]
  - [Redacted]
  - [Redacted]

Fixed Hopper & Belt-line to Stockpiles

Belt-line from Dumper Building

Background (continued)

- CCT is contractually obligated to:
  - Comply with TVA scale procedures at the coal blending terminal.
  - Provide and maintain a mechanical sampling system at the coal blending terminal which meets ASTM D 2234 Type I, Condition B, Collection of a Gross Sample of Coal, standards.

Payment/Load-Out Belt Scale

Mechanical Sampling Unit

- CCT electronic scale data is entered on a manual weight sheet which is faxed to the records office in Madisonville, Kentucky. The manual weight sheet data is then entered into the CCT database.
- TVA received [Redacted] of coal from CCT from the contract effective date of January 1, 2003, through December 31, 2006.
- TVA conducts flyovers of the CCT stockpiles to adjust inventory. This is normally done on a quarterly basis.

Objective and Scope

Dumper Building

Mobile Stacker

- **Objective**

  Assess key control activities and the scale certification process applicable to TVA coal shipments at CCT.

- **Scope**

  Coal shipments delivered to and shipped from CCT from January 1, 2006, through December 31, 2006.

Methodology

In order to accomplish our objective, we:

- Reviewed the CCT contract to identify and document key provisions of the contract, including billing terms and rates, tonnage requirements, key processes and procedures, and key prescribed control activities.
- Performed a walkdown at CCT to document processes, procedures, and key control activities.
  - We took digital videos and pictures of the coal receipt, storage, blending, sampling, and loading processes.

Mobile Hopper

Radial Stacker

- Reviewed reports and other documentation pertaining to (1) coal shipments to TVA and (2) the certification, calibration, and maintenance checks of CCT belt scales.

Methodology (continued)

- Randomly selected 30 barge shipments from CCT to various TVA fossil plants to compare the weights in the CCT database to the actual weight documentation at CCT.
- Performed an analytical review on CCT barge shipments to TVA. Specifically, we:
  - Compared CY 2006 barge shipments, as recorded in the TVA DCRs, to the CCT database to identify delivery and shipment discrepancies (i.e., reconciliation of TVA DCRs to the CCT database).
  - Compared CCT weights with TVA weights to identify significant variances.
- Randomly selected 30 train deliveries to CCT from TVA vendor mines, to verify CCT (1) scale weights and (2) mine weights were correctly entered into the CCT database.
- Performed an analytical review on coal deliveries to CCT from TVA vendor mines. Specifically, we:
  - Compared CY 2006 train deliveries, as recorded in FFDS, to the CCT database to identify discrepancies (i.e., reconciliation of FFDS to the CCT database).
  - Compared vendor mine weights with CCT weights to identify significant variances.
- Reviewed CCT scale certification documentation to determine if scales are being certified in accordance with the contract terms.

This inspection was conducted in accordance with the “Quality Standards for Inspections.”

Finding 1 – Processes and Key Control Activities

CCT has established processes and key control activities for the receiving, blending, weighing, and loading of the coal it handles for TVA. Specifically, CCT:

- Maintains documentation supporting the certification of belt scales.
  - Certification of belt scales is required by contract.
- Weighs all train deliveries of TVA coal received at the terminal using a certified belt scale.
  - A monthly report of TVA coal deliveries at CCT is sent to the TVA Fossil Power Group.
- Weighs all shipments of coal destined for TVA fossil plants using a certified belt scale.
- Uses materially tested belt scales for the weighing of coal during the blending process.
- Conducts visual inspections and zero calibrations on a daily basis and conducts span checks on a weekly basis for all belt scales on site.
- Utilizes a computerized system for blending TVA coal.
- Maintains a computerized database of coal delivered for and shipped to TVA.

Finding 1 – Processes and Key Control Activities (continued)

TVA contracts with SGS Minerals Services (SGS) for the sampling of coal at CCT. Our discussions with the SGS representative on-site and observations found:

- CCT has two mechanical swing-arm samplers utilized for the sampling of coal. These samplers are for inbound deliveries and outbound shipments.
  - Inbound deliveries and outbound shipments can be sampled at the same time.
    - Every other inbound delivery is sampled unless directed otherwise by TVA.
    - All outbound shipments are sampled unless directed otherwise by TVA.
  - If samplers are not functioning for an extended[1] period of time, a manual sample is taken by SGS personnel.
  - Bags containing samples are secured immediately after sample has been collected.
  - Samples are packaged to be delivered to a TVA designated testing facility.
    - Samples are secured in a lockbox until picked up.
    - CCT personnel do not have access to the sample.
  - SGS maintains a record of the samples taken for TVA.
  - SGS personnel operate the samplers and CCT personnel are responsible for maintaining the sampling equipment.

[1] If samplers are down for a short time period the loading/unloading process is stopped until the samplers are repaired.

Finding 2 – Barge Shipments To TVA

We found that barge shipments were generally recorded accurately in the (1) CCT database and (2) DCR. Specifically:

- For the 30 randomly selected barge shipments, we found no discrepancies when the CCT database weight was compared to the actual CCT weight documentation.
- For the CCT database compared to the DCRs, we found:
  - The CCT database contained 3,483 barge shipments, of which 130 did not have a corresponding[2] entry in the DCR. We were able to reconcile all but one of the 130 differences. Specifically, we reviewed CCT and TVA supporting documentation and found:
    - CCT documentation showed a barge being sent to COF which the DCR did not show as being delivered. According to TVA FS personnel, the barge sank in August 2006 between Pickwick Lock and COF. The loss was valued at [Redacted] including terminal handling. As of August 10, 2007, TVA had not recovered the loss.
    - For 40 of the 130 shipments, a Barge ID was entered in the CCT database but no data was included in the date loaded, weight, plant destination, or Traffic Control Number (TCN) fields. No billing to TVA was made for these entries, and no reduction of inventory occurred. Therefore, no actions are warranted.
    - For 89 of the 130 shipments, the differences appeared to be the result of timing differences related to our review period.
      - Records in the DCR are entered on the unload/receive date, while CCT records are entered on load/shipment date (i.e., some barges were in transit).

[2] Matches were based on Conveyance ID (Barge ID), TCN , and quantity shipped.

Finding 2 – Barge Shipments To TVA (continued)

- The DCRs contained 3,379 barge shipments, of which 123 did not have a corresponding entry in the CCT database. For the discrepancies, we reviewed CCT and TVA supporting documentation and found:
  - For 20 of the 123 shipments, we were able to identify probable matches between DCR and CCT data. The discrepancies appear to have resulted from keying errors on the part of TVA and CCT.
  - For 1 barge shipment the total from stockpile was entered as 1,742 tons when the correct amount should have been 1,443 tons, a 299 ton difference. According to CCT personnel, the discrepancy probably resulted from a keying error because the next barge entry had a weight of 1,742 tons (i.e., the 1,742-ton shipment was entered twice).
    - According to CCT personnel, this error was not corrected because a flyover inventory adjustment had already been made prior to the error being discovered.
  - The remaining 103 shipments appear to be the result of timing differences.

Finding 3 – Train Deliveries To CCT

We found that train deliveries were generally recorded accurately in (1) the CCT database and (2) FFDS. Specifically:

- For the 30 randomly selected train deliveries, we found no discrepancies when (1) vendor mine weights in the CCT database were compared to vendor manifest weights, and (2) the CCT database weight was compared to the actual CCT weight documentation.
- For the FFDS train deliveries compared to the CCT database, we found:
  - FFDS contained 431 train deliveries, of which 16 did not have a corresponding[3] entry in the CCT database. We reviewed CCT and TVA supporting documentation and were able to reconcile all of the differences. Specifically:
    - For 1 of the 16 deliveries, the shipment of approximately 12,000 tons to GRT was mistakenly recorded by TVA as received at CCT. FS corrected the entry based on our identification which may have incorrectly adjusted inventory. FS is working to determine the effect on coal quality and survey adjustments.
    - For 10 of the 16 train deliveries, the discrepancies appear to have resulted from timing differences.
      - Records in FFDS are entered based on the date shipped from the mine, while records in the CCT database are entered based on the date the train arrives at the terminal.
    - For 2 of the 16 train deliveries, no shipment quantity was entered in the CCT database. No billing to TVA was made for these entries, and no reduction of inventory occurred.
    - For 3 of the 16 train deliveries, the discrepancies appear to have resulted from keying errors on the part of TVA and CCT.

[3] Matches were based on date and quantity.

Finding 3 – Train Deliveries TO CCT (continued)

- The CCT database contained 434 train deliveries, of which 19 did not have a corresponding entry in FFDS. For the discrepancies, we reviewed CCT and TVA supporting documentation and found:
  - For 5 of the 19 deliveries, totaling approximately 73,000 tons, the train deliveries were mistakenly recorded as received at GRT instead of CCT in FuelWorx.[4]
    - FS corrected the entries based on our identification, which may have incorrectly adjusted inventory. FS is working to determine the effect on coal quality and survey adjustments.
  - For 7 of the 19 train deliveries, the differences appear to have been the result of timing differences.
  - For 4 of the 19 train deliveries, the differences appear to be related to straggler or individual rail cars that were received after the original train had been unloaded.
  - For 3 of the 19 deliveries, the differences were related to keying errors.

[4] Information from FuelWorx is transferred into FFDS.

Recommendations

We recommend the General Manager, FS:

- Initiate recovery of the loss created by the sunken barge.
- Ensure the completion of necessary corrective actions regarding inventory and coal-quality adjustments for the incorrectly recorded train deliveries.
- Consider providing guidance for correcting identified data entry errors when coal flyover adjustments have occurred.
- Improve efforts to ensure that information is entered correctly into FuelWorx.