CSX TRANSPORTATION

GUIDELINES FOR THE DEVELOPMENT OF COAL UNIT TRAIN FASTLOAD ORIGINS

Coal Development Department

A) OVERVIEW

CSXT's Coal Development Department is located in Lexington, Kentucky, which is centered among the coalfields served by CSXT. The Appalachian coalfield encompasses CSXT rail lines from Maryland and Pennsylvania into central Alabama. The Illinois Basin coalfield is located in Indiana, Illinois, and Western Kentucky and is served by CSXT lines. CSXT has a toll-free number **(800) 852-4923**, which may be used to contact any of the Coal Development Staff.

B) RESPONSIBILITIES

It is the function of CSXT's Coal Development Department to encourage and assist coal producers in constructing unit train fastload facilities on CSXT. Fastload unit trains are the most efficient method for the producer, railroad, and industrial/utility customer to transport coal.

Coal Development representatives assist throughout the process; from the initial conceptual proposal until the fastload facility is loading trains. During the process, the Coal Development Department assists in coordinating acceptable engineering and operation parameters, working as a liaison between CSXT coal producers and CSXT's Planning, Engineering, and Operating departments to insure safe and efficient design and construction. Coal Development's responsibility does not end with the completed construction, however. As liaison to CSXT's numerous coal producers, Coal Development serves as the customer contact, helping to answer questions and assisting coal producers in fully utilizing CSXT for their shipping needs.

C) INFORMATION REQUIRED FOR PROPOSED COAL LOADING ORIGINS

<u>Company Information</u>

Name of company to be shown on contracts
State in which company is incorporated
Name of principle officers
Type of mining, i.e. deep, strip or auger
Expected monthly production

Method of loading
Anticipated life of operation
Name of sales agency
Principle markets

Coal Information

Estimated recoverable reserves
Seam mined (also acres of reserves available and approximate tons)
Seam thickness

Analysis

BTU
Moisture
Ash
Sulfur
Volatile
Fixed Carbon
Fusion Temperature
Source of Analysis

Coal Preparation Facilities

Size produced
Type of weighing capabilities

D) **GENERAL REQUIREMENTS PERTINENT TO THE CONSTRUCTION AND OPERATION OF UNIT TRAIN FASTLOAD FACILITIES**

Plans of track layout and loading facility must have railroad approval before construction. **See CSX Transportation 'Standard Specifications for the Design and Construction of Private Sidetracks – Section I – Plans Furnished by Industry.'**

http://www.csx.com/share/customers/id/docs/CSX_Industrial_Sidetrack_Manual_063003-REF20534-REF21769.pdf

Track design should be predicated on a minimum train size of 110 cars attached with up to four locomotives. Track should be designed using 55 foot length for rail cars and 75 foot length for locomotives.

Track design should permit the loading of cars in either direction.

A coal weighing system capable of providing electronic individual per car weights to CSXT is required at the loading facility. CSXT must approve and certify any weighing system. Batch weigh systems are preferred. (See section E).

Coal loading capacity is to be at a minimum rate of 4,000 tons per hour and permit loading a train of 10,000 tons within 4 hours. 5,000 tons per hour loading capability should be considered by the origin should 15,000 ton trains be the maximum train size desired. The loading bin should have a minimum capacity of 120 tons.

Automatic Equipment Identification (AEI) readers will be required at all new fastload facilities.

Electronic Data Interchange of Bill of Lading information will be required and the origin should have capability of accepting information from the ShipCSX web page.

The CSX Coal Development office will prepare all minetrack or track lease agreements to cover the track and loading facility. All other wireline, pipeline or encroachment agreements necessary will be prepared by CSXT Contract Administration.

E) AN OVERVIEW: THE UNIT TRAIN BATCH WEIGHING LOADOUT SYSTEM

The purpose of a unit train batch weighing loadout system is to efficiently load each coal car in a unit train to its maximum allowable capacity, **without it being overloaded or underloaded**. The term "unit train" typically refers to a train consisting of 75 to 150 hopper, gondola, or rotary dump coal cars being shipped from one source to one destination in a continuous uninterrupted train movement. The term "batch" refers to a quantity produced as the result of one operation; therefore, a "batch weighing loadout system" is a facility that prepares a predetermined amount of coal, and loads it into the railcar.

U.S. Railroads establish limits as to the gross (sum of the vehicle weight and the material weight) allowable weight for each car. These excessively and repetitively overloaded railcars lead to premature failure on railroad beds, bridges, and structures, as well as higher car maintenance and reduce railcar life expectancy. Because of these concerns, it as had been common for railroads to assess strict penalties for producers who ship overloaded cars.

A common means of producers to avoid the high penalty costs of overloaded railcars is to purposely underload railcars. The problem this creates is that the unit train capacity is not being utilized efficiently and some of the available railcar carrying capacity is wasted. This lack of efficiency in car loading can be very costly.

The **Unit Train Batch Weighing Loadout System** is the only type of train loading facility that prepares an amount of material specifically for each car of a unit train so that maximum car utilization is achieved. Each car is loaded so that it is neither overloaded nor underloaded, so that the railroad does not see excessive damage to its facilities and equipment and the producer efficiently utilizes as much of each car's capacity as possible.

The amount of material for each railcar to be loaded in a unit train is determined before loading the car. This amount is computer calculated by subtracting a railcar empty weight from the allowable gross weight. This calculated net target weight is the amount of material that is required for a particular railcar which, when loaded into the car, *achieves a total gross loaded weight that is equal to the railroad's specified gross allowable weight.*

The **Unit Train Batch Weighing Loadout System** performs this operation through the use of a two-bin system in a common structure. The surge bin situated in a structure over the top of the weigh bin, which is situated over the top of the railroad tracks where cars are to be loaded. Through computer control, a series of high speed hydraulically actuated weigh bin feed gates will transfer material from the upper surge bin into the weigh bin until the desired net target weight for the next car to be loaded is achieved. These high speed gates perform cutoff of material flow at the appropriate time as material is rapidly being filled from the surge bin (typically 250-300 tons capacity) into the weigh bin (typically 120 ton capacity to assure that when material flow into the weigh bin is ceased, the desired net weight (or "target weight") has been achieved for the next railcar to be loaded. As that car moves into a loading position under the weigh bin, this prepared batch of coal is released from the weigh bin into the railcar by opening another hydraulic gate, allowing the batch of material to be discharged from the weigh bin. The material is funneled from the weigh bin into the railcar through the use of a telescopic loading chute, or spout.

The process of loading a unit train is one in which a batch is prepared specifically for each individual railcar in the complete train. If the train consists of 100 different size railcars, 100 different batches will be prepared, each made specifically for the car that it will be loaded into. The process of loading a unit train is a continuous one, in that material is fed by conveyor to the top of the upper surge bin continuously, and the train that is being loaded moves at a slow continuous rate during the entire loading process.

F) WHY USE HIGH ACCURACY WEIGHING SYSTEMS

Many people feel that if they are weighing their product, the weight recordings they are obtaining are correct. Thousands (even millions) of dollars may stand to be lost at many operations each year because of this misconception. For example, consider the following scenario:
An operation runs two million tons of coal annually. This coal costs $50.00 per ton and is weighed as it is received on a belt scale that has an average weighting error of a half percentage.

Over the course of the year, this plant will stand to "lose" 10,000 tons (or $500,000.00) of coal. The "lost" material is due to the scale systems one-half percent weighing error alone (remember that this type of scale accuracy is usually considered to be fairly good). The material is "lost" in the sense that someone (either the buyer or the seller) was shorted $500,000.00 worth of coal.

An intensive maintenance and scale calibration program can improve these results drastically by assuring that the weighing systems are kept in the highest possible tolerances. This can, in itself, be very costly and labor intensive. Also, the highest attainable scale accuracy can be only as good as the equipment being used.

The best answer to the material weight loss control problem is to employ high accuracy, low maintenance weighing systems. Static scale systems afford this because they can weigh materials while at rest (providing high accuracy) and they consist of few moving components (providing low maintenance). Truck scales, static railroad scales, platform scales, hopper (weigh bin) scales and tank scales make up the bulk of static scale systems. Thoughts of these systems are usually associated with "stop and go" weighing and not continuous operations, such as conveyor belt lines. This, though, is not the case. Many weigh bin systems, providing extremely high weighing accuracy's, are being utilized in operation with continuous throughputs. Weigh bin systems are being installed more and more in operation where belt scales would have been installed in the past. This trend is due to an increased understanding of the economic advantages of using systems providing high weighing accuracies.

One such weigh bin system which is generating high interest in the marketplace is the "pulse weighing' system. The function of the pulse weigher is exactly the same as a belt scale – to weigh coal on a belt line without interrupting the flow of material, except that the material is weighed statically (at rest) instead of dynamically (in motion).

This is accomplished through the use of two small weigh bins, side-by-side. Material flow from an incoming conveyor is diverted to one weigh bin until it fills and then to the other bin. The filled bin "reads" and discharges its batch, then obtains a net weight of material that passed through. The other bin performs the same operation. Material flow is simply diverted back and forth between the two weigh bins, continuously obtaining static net weights of batches and maintaining an accumulated total. These discharge batches are dumped into a surge bin below the weigh bins, and flood loaded onto an outgoing conveyor. Material flow in and out of the system is continuous, even though it is interrupted and stopped for static weighing. Automatically lifting the calibrated weights stored in position on site, and adjusting the calibration of the scale, if necessary, can easily check the accuracy of the weigh bin.

G) OTHER ACCEPTABLE WEIGHING SYSTEMS

Other weighing systems (track scale, top off) may be considered by CSXT if approved by CSXT's Manager of Scales and Weighing.

Details of such systems should be sent to Coal Development for consideration. Coal Development will coordinate with CSXT's Engineering and Mechanical Department concerning feasibility and acceptance.

Belt Scale weights will not be accepted by CSXT from *new* coal origin facilities.