TR-140424

[redacted]

Zachry Engineering Corporation

Date: March 16, 2014

Location: Pasco, Washington

Subject: Re-Spray System Clearance Envelope Variance

Purpose:

As required under WAC 480-60-020(4) Zachry Engineering Corporation is requesting a rule exemption as described below:

(1) WAC 480-60-040 generally requires an overhead clearance of at least 22'-6" measured from the top of the track. Although the rule provides for exceptions, the structure associated with Zachry Engineering's request may be subject to the general rule.

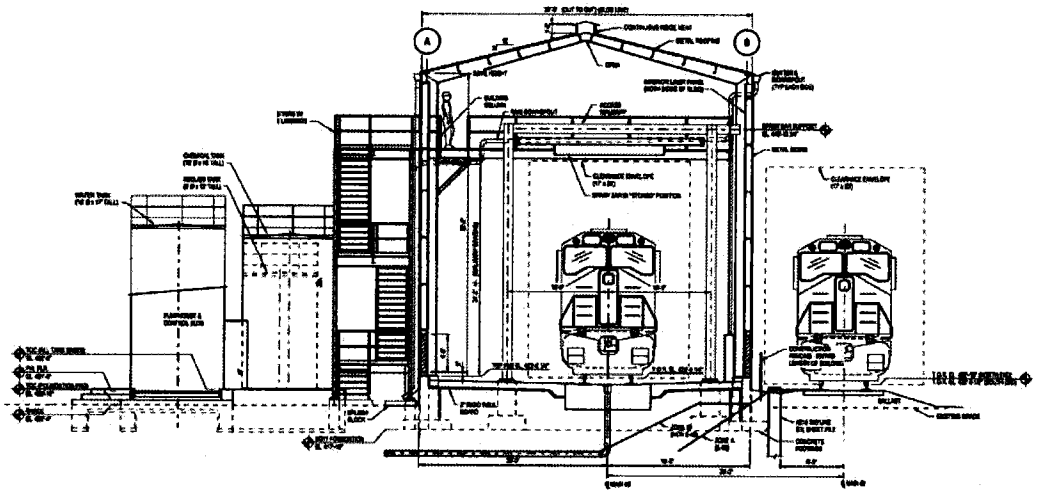
(2) BNSF Railway (BNSF), as the primary rail operator on the track, has tentatively approved our facility construction requiring the proposed exemption.

The purpose of this document is to outline the BNSF Railway Pasco, WA Re-Spray Facility project general system sequence of operations, summarize the method of control for the re-spray system spray bar header operation, and illustrate the subsequent impact on the standard railroad clearance envelope. Inherent in the design of the re-spray facility is the requirement of the spray bar header to be stored outside the standard railroad clearance envelope and then during operation of the system, lowering the spray bar header to an optimum re-spray height above train cars within the standard clearance envelope. This sequence of operations provides a high level description of the system operation process and method for control of the spray bar header into and out of the standard railroad clearance envelope.

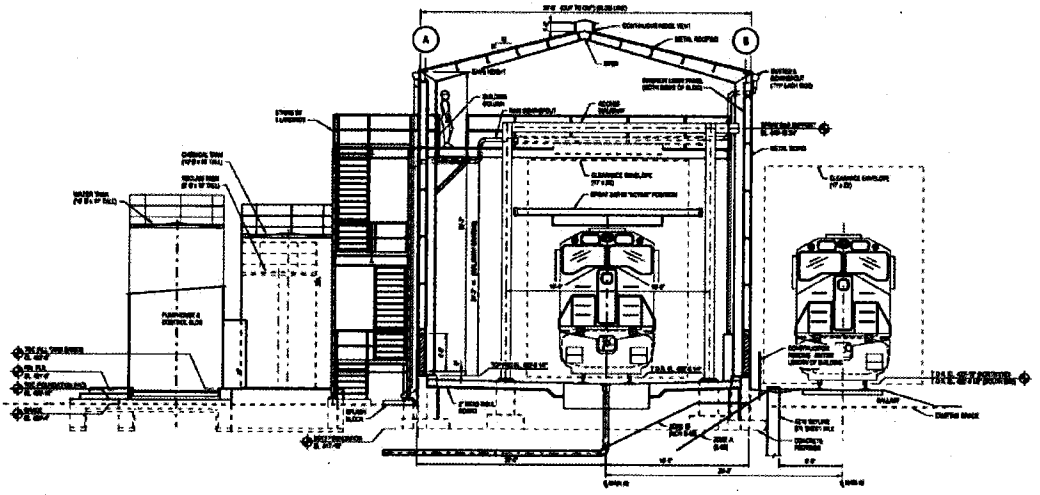
Background:

This portion of track is an integral part of BNSF's interstate rail system. Under the ICC Termination Act (ICCTA), 49 U.S.C. § 10501(b), the federal Surface Transportation Board has exclusive jurisdiction over railroad operations and facilities. Although state and local agencies do not have jurisdiction to compel railroads to submit to state or local permitting requirements as a condition of improving the railroads' interstate facilities, BNSF and other railroads can and often do voluntarily agree to comply with reasonable state and local environmental requirements in connection with railroad construction projects. This voluntary cooperation in no way is meant to confer jurisdiction on the state or local regulator but instead is a by-product of BNSF's commitment to partnership with the community. BNSF is committed to working closely with your agency to identify reasonable requirements we can mutually agree to implement as part of this project.

Schematic:



ELEVATION - SPRAY BAR IN "STORED" POSITION



ELEVATION - SPRAY BAR IN "ACTIVE" POSITION

Sequence of Operation:

1.1 General

A. The re-spray facility is located at milepost 142.36 on the BNSF Northwest Division, Lakeside Subdivision. The Pasco, WA re-spray facility is located on mainline track 3.

B. Trains with westbound loads are identified as train symbol "xyz". A transponder reading the locomotive number identifies the westbound train as a train requiring re-spray treatment.

C. Mainline track 3 is capable of passing all train types including double stack intermodal cars with a maximum height of 23 feet. The re-spray shed contains the spray bars and spray bar lift equipment. Track signals are required to show the spray bar is at its fail-safe "UP" position. When the spray bars are not "UP", the track side signals for east and westbound directions on mainline track 3 show "STOP".

D. The design clearance envelope is per the Association of American Railroads (AAR) and BNSF Standard Specification for Mainline Tracks.

E. The re-spray facility also contains redundant "load too high" photo eye sensors located approximately 200 feet east on the inbound track to cause emergency retract of the spray bar in the event a railroad vehicle greater than 16 feet is detected inbound to the re-spray facility.

1.2 Re-Spray Facility Operation

A. At train approach to the re-spray facility, the train crew will view an information signal stand displaying solid white indicating the re-spray system is "OK" for service and the system is armed and ready to operate.

B. The train crew will set the "pacesetter" train speed to 10 mph prior to arrival at the re-spray facility.

C. On train approach, the spray bar moves from the stored position of 24'-0" from top of rail to the operational position of 16'-6" from top or rail. The operational position is higher than the maximum dimensions for locomotives (i.e. nominally 15'-5.5" for GE and 15' -8" for EMD locomotives). Physical structural guide track stops limit the spray bar header downward travel.

D. The spray bar headers are hydraulically operated with counter weights of sufficient mass to hold and retract the spray bar headers to the fail safe "UP" position in the event of power failure or loss of control. The spray bar headers are forced down into their operational spray position of 16-6" above top of rail after the spray station is ARMED and the lead locomotives have passed each spray bar header.

E. Counter weights are located at ground level with the spray bar headers in the "UP" position to eliminate weight swing caused by train motion at elevated track speeds.

F. The "UP" position limits switches are monitored by the programmable logic controller (PLC) and when "NOT UP" is indicated, the display in CTC is shown as "Re-Spray Track Obstruction". The re-spray facility is considered not clear when an internal obstruction exists less than AAR Plate "C" clearance. In addition, the obstruction is shown on the milepost track side signals as "STOP" and the CTC and PLC human machine interface (HMI) interface screens indicate "Track Signals STOP".

1.3 Re-Spray System Arming/Disarming

A. Centralized Traffic Control (CTC) has a provision for demand arming the re-spray facility. In the event the train symbol and/or locomotive transponder does not cause arming of the re-spray facility in preparation of the next train, the CTC can demand arm the re-spray system by depressing the "Demand Arm" push button on their console.

B. CTC has a provision for demand disarming of the re-spray facility. In the event the next approaching train into the re-spray facility should not be sprayed and the inbound re-spray signal shows "ARMED", the CTC can demand disarm the re-spray facility by depressing the "Demand Disarm" push button on their console.

C. CTC demand arming is also required for restart if train stoppage occurs.