

authority so that appropriate measures can be taken. (See § 222.51(a)).

Note: The provisions stated above for crossing closures, grade separations and wayside horns apply for Public Authority Application to FRA as well.

Section III—Pre-Rule Quiet Zones

Pre-Rule Quiet Zones are treated slightly differently from New Quiet Zones in the rule. This is a reflection of the statutory requirement to “take into account the interest of communities that have in effect restrictions on the sounding of a locomotive horn at highway-rail grade crossings * * *”. It also recognizes the historical experience of train horns not being sounded at Pre-Rule Quiet Zones.

Overview

Pre-Rule Quiet Zones that do not meet the requirements for automatic approval (see discussion that follows) must meet the same requirements as New Quiet Zones as provided in § 222.39. In other words, risk must be reduced through the use of SSMs or ASMs so that the Quiet Zone Risk Index for the quiet zone has been reduced to either the risk level which would exist if locomotive horns sounded at all crossings in the quiet

zone (*i.e.* the Risk Index with Horns) or to a risk level equal to, or less than, the Nationwide Significant Risk Threshold. Pre-Rule Quiet Zones must meet these requirements by December 18, 2008 (§ 222.41(b)(2)). There are four differences in the requirements between Pre-Rule Quiet Zones and New Quiet Zones that must be noted.

First, since train horns have not been routinely sounded in the Pre-Rule Quiet Zone, it is not necessary to increase the risk indices of the public crossings to reflect the additional risk caused by the lack of a train horn. Since the train horn has already been silenced, the added risk caused by the lack of a horn is reflected in the actual collision history at the crossings. Collision history is an important part in the calculation of the severity risk indices. In other words, the Quiet Zone Risk Index is calculated by averaging the existing risk index for each public crossing without the need to increase the risk index by 66.8 percent. For Pre-Rule Quiet Zones, the Crossing Corridor Risk Index and the initial Quiet Zone Risk Index have the same value.

Second, since train horns have been silenced at the crossings, it will be necessary to mathematically determine what the risk level would have been at the crossings if

train horns had been routinely sounded. These revised risk levels then will be used to calculate the Risk Index with Horns. This calculation is necessary to determine how much risk must be eliminated in order to compensate for the lack of the train horn. This will allow the public authority to have the choice to reduce the risk to at least the level of the Nationwide Significant Risk Threshold or to fully compensate for the lack of the train horn.

To calculate the Risk Index with Horns, the first step is to divide the existing severity risk index for each crossing by the appropriate value as shown in Table 1. This process eliminates the risk that was caused by the absence of train horns. The table takes into account that the train horn has been found to produce different levels of effectiveness in preventing collisions depending on the type of warning device at the crossing. (**Note:** FRA’s web based Quiet Zone Calculator will perform this computation automatically for pre-rule quiet zones.) The Risk Index with Horns is the average of the revised risk indices. The difference between the calculated Risk Index with Horns and the Quiet Zone Risk Index is the amount of risk that would have to be reduced in order to fully compensate for the lack of train horns.

TABLE 1.—RISK INDEX DIVISOR VALUES

	Passive	Flashing lights	Lights and gates
U.S. except Chicago	1.749	1.309	1.668
Chicago Region	N/A	N/A	1.173

Note: The Chicago Region includes the Illinois counties of: Cook, DuPage, Lake, Kane, McHenry and Will. Pre-Rule Quiet Zones in the Chicago Region are able to use a lower adjustment factor at crossings equipped with gates due to data that indicate that the collision rate for Pre-Rule Quiet Zone crossings that were equipped with flashing lights and gates in the Chicago Region had an increased collision rate of 17.3 percent when compared to similar gated crossings in the Nation where horns were sounded. Gated crossings in Pre-Rule Quiet Zones outside of the Chicago Region had an increased collision rate of 66.8 percent when compared to similar crossings in the Nation where horns were sounded. Passive and flashing lights crossings in the Chicago Region use the “U.S. except Chicago” values in Table 1.

The third difference is that credit is given for the risk reduction that is brought about through the upgrading of the warning devices at public crossings (§ 222.35(b)(2)). For New Quiet Zones, all crossings must be equipped with automatic warning devices consisting of flashing lights and gates. Crossings without gates must have gates installed. The severity risk index for that crossing is then calculated to establish the risk index that is used in the Risk Index with Horns. The Risk Index with Horns is then increased by 66.8 percent to adjust for the lack of the train horn. The adjusted figure is the initial Quiet Zone Risk Index. There is no credit received for the risk

reduction that is attributable to warning device upgrades.

For Pre-Rule Quiet Zones, the Risk Index with Horns is calculated from the initial risk indices which use the warning devices that are currently installed. If a public authority elects to upgrade an existing warning device as part of its quiet zone plan, the accident prediction value for that crossing will be recalculated based on the upgraded warning device. (Once again, FRA’s web-based Quiet Zone Calculator can do the actual computation.) The new accident prediction value is then used in the severity risk index formula to determine the risk index for the crossing. This adjusted risk index is then used to compute the new Quiet Zone Risk Index. This computation allows the risk reduction attributed to the warning device upgrades to be used in establishing a quiet zone.

The fourth difference is that pre-rule quiet zones have different minimum requirements under § 222.35. A pre-rule quiet zone may be less than one-half mile in length if that was its length as of October 9, 1996. A pre-rule quiet zone does not have to have automatic warning devices consisting of flashing lights and gates at every public crossing (§ 222.32(b)(2)). The existing crossing safety warning systems in place as of December 18, 2003, may be retained but cannot be downgraded. It also is not necessary for the automatic warning devices to be equipped with constant warning time devices or power

out indicators; however, when the warning devices are upgraded, constant warning time and power out indicators will be required if reasonably practical (§ 222.35(b)(2)). Advance warning signs that notify the motorist that train horns are not sounded and STOP signs and crossbucks at private crossings do not have to be installed until December 18, 2006, which allows three years to install the required signage.

A. Requirements for Both Public Authority Designation and Public Authority Application—Pre-Rule Quiet Zones

These following is necessary when establishing a Pre-Rule Quiet Zone. This information pertains to Automatic Approval, the Public Authority Designation and Public Authority Application to FRA methods.

1. Determine all public and private at-grade crossings that will be included within the quiet zone. Also determine any existing grade separated crossings that fall within the quiet zone. Each crossing must be identified by the U.S. DOT Crossing Inventory number and street name. If a crossing does not have a U.S. DOT crossing number then contact FRA for assistance.

2. Document the length of the quiet zone. It is not necessary that the quiet zone be at least one-half mile in length. Pre-Rule Quiet Zones may be shorter than one-half mile. However, the addition of a new crossing to a quiet zone nullifies its pre-rule status, and the resulting New Quiet Zone must be at least