



# Annual Railroad Safety Activity Report to the California State Legislature



**Pursuant to Public Utilities Code  
Sections 309.7 and 765.6**

**November 30, 2012**

**CALIFORNIA PUBLIC UTILITIES COMMISSION  
CONSUMER PROTECTION AND SAFETY DIVISION**



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**CALIFORNIA PUBLIC UTILITIES COMMISSION**  
CONSUMER PROTECTION AND SAFETY DIVISION  
RAILROAD OPERATIONS AND SAFETY BRANCH

**Annual Railroad Safety Activity Report**  
**Fiscal Year 2011-2012**

Pursuant to California Public Utilities Code Sections 309.7 and 765.6

**Introduction**

The California Public Utilities Commission (CPUC) ensures the safety of freight railroads and crews, commuter railroads and their crews and passengers, and highway-railroad crossings in California. CPUC performs these railroad safety responsibilities through its Consumer Protection and Safety Division (CPSD), Railroad Operations and Safety Branch (ROSB).

The Railroad Operations and Safety Branch's mission is to ensure that California communities and railroad employees are protected from unsafe practices on freight and passenger railroads by promoting and enforcing rail safety rules, regulations and inspection efforts.

This report complies with the California Public Utilities Code Sections 309.7 and 765.6. Section 309.7 requires the CPUC to report on activities of the safety division and document expenditures of the funds derived by fees paid by the railroad corporations and the State Highway Account. Section 765.6 requires the CPUC to report on the necessary actions the CPUC has taken to ensure the safe operations of railroads in this state. In addition, Section 765.6 requires the CPUC to report annually on the impact on competition, if any, of the regulatory fees assessed railroad corporations for the support of the CPUC's activities.

**Executive Summary**

- The Railroad Operations and Safety Branch employs 48 rail safety employees: 36 inspectors with expertise in hazardous materials, motive power and equipment, operations, signals, and track; five analysts; one engineering specialist; four management positions, and two support staff. The inspectors also perform overarching risk assessment and risk management to identify and address additional public safety risks. Over the past fiscal year, ROSB rail safety inspectors have:
  - Performed inspections and drafted 4,587 inspection and follow-up reports to monitor the railroads' compliance and remedial actions.
  - Identified 14,622 defects in track, locomotive, rail cars, signals, operating practices, and hazardous materials shipping practices. Each defect presents

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an accident risk if left uncorrected, and in some cases an immediate accident risk.

- Cited 276 defect violations of the Federal Railroad Administration (FRA) regulations, California statutes, and CPUC General Orders.
  - Surveyed and inspected 198,286 units.
  - Identified and followed through with remedial actions on risk management safety concerns.
  - Performed 30 security inspections throughout the state.
  - Responded to 21 informal complaints from railroad employees and the general public.
  - Educated over 8,948 people through 89 presentations on safety awareness near tracks and trains through Operation Lifesaver.
- The Railroad Operations and Safety Branch issued two citations totaling \$60,000 under the recently enacted citation program, which the Commission adopted in Resolution ROSB-002 to delegate citation and fine authority to CPSD for violations of certain state General Orders and PU Codes. The amount was deposited to the State General Fund.
- The regulatory fees assessed to fund the CPUC's rail safety activities represented less than three tenths of one percent of revenues for the two large Class I carriers, Union Pacific Railroad (UPRR) and the Burlington Northern and Santa Fe Railway (BNSF), and are unlikely to have any effect on competition.
- CPSD's railroad safety staff participated in the planning and implementation of two Safety Conferences, in San Francisco and Los Angeles, respectively. The conferences featured keynote speakers from the National Transportation Safety Board, the Washington Metropolitan Area Transportation Authority, and UC Berkeley's Center for Catastrophic Risk Management. The conference was attended by representatives from all the CPUC's utilities under the CPUC's safety jurisdiction, and presented state-of-the-art safety culture and risk management principles.

## **Safety Culture and Risk Management**

The Railroad Operations and Safety Branch continues to learn from the lessons of the 1991 Dunsmuir derailment and toxic spill and from the lessons of the 2010 San Bruno gas pipeline explosion and fire. ROSB is working to enhance the safety culture of the railroad industry as well as its own safety culture, and will ensure that identification and mitigation or elimination of hazards is not limited to existing regulations and non-compliance with those regulations. Staff will be implementing a renewal of risk

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assessment with a new and permanent risk assessment position approved for the 2012-2013 budgets.

The CPUC has worked to improve rail safety by investigating accidents, reviewing accident trends and inspection data, and by performing focused inspections where safety concerns are apparent. As a result of the San Bruno natural gas explosion on September 9, 2010, an Independent Review Panel recommended that the CPUC adopt the commitment to move to performance-based regulatory oversight over the public utilities it regulates. In addition, it directed the CPUC to be “equally, if not more vigilant,” concerning the regulated entities’ actions that affect the health and safety of the public to ensure the public utilities’ actions and programs are in line with those of a prudent operator.

In response to the Independent Review Panel’s report, all CPUC divisions are engaged in proactive risk management practices. Risk management practices encompass firm regulatory oversight by looking beyond the regulations toward more comprehensive overall safety oversight. The Railroad Operations and Safety Branch has devised a new risk management reporting structure to allow its inspectors to capture all possible risks, in addition to regulatory enforcement required by the Federal Railroad Administration (FRA), current California statutes, General Orders and Public Utility Codes.

For example, ROSB conducted a risk management investigation between April and June 2012. ROSB track inspectors found that some newly appointed railroad managers and inspectors exhibited a lack of knowledge regarding FRA and CPUC regulations; as well as lacking the institutional knowledge required to perform their jobs, train and mentor subordinates, and identify track conditions that could adversely affect safe train transportation. This lack of training and/or experience was also noted in their knowledge and skills regarding their own railroad procedures, such as rudimentary track deficiency identification and remediation, as well as complex continuously welded rail maintenance procedures and regulatory requirements.

The Railroad Operations and Safety Branch collaborated with the respective railroad middle and upper managers to establish a more comprehensive personnel training and to prevent new field managers from being placed in safety sensitive positions until a more intensive and thorough training program had been completed by each prospective manager.

Railroad Operations and Safety Branch staff provides the critical functions of inspection, enforcement, risk assessment, risk management, information-gathering and analysis, and consequently participates in rulemaking, litigation, mediation, and negotiation effectively. Parallel with these activities, ROSB is continuously improving its understanding of safety culture, system safety planning, high reliability operations, and other contributions of the applied engineering, organizational, and behavioral sciences. Risk management must be the overarching principle, and must be fully integrated in all projects, plans, and oversight activities within the ROSB program.

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## The Rail Safety Program

ROSB inspectors perform regular inspections, and focused inspections, accident investigations, security inspections and complaint investigations.

ROSB inspectors go through a thorough training process to become federally-certified in five rail-related disciplines: Hazardous Materials, Motive Power and Equipment, Operating Practices, Signal and Train Control, and Track. Under a Memorandum of Understanding with the FRA, ROSB makes civil penalty recommendations to FRA when ROSB inspectors discover non-compliant conditions with federal railroad safety regulations. ROSB inspectors also evaluate whether the inspected properties comply with California laws and CPUC General Orders.

Total inspection data for each discipline include:

1) CPUC Hazardous Materials inspectors:

- Submitted 933 inspection reports for 33,339 units\*;
- Identified 1,167 defects; and,
- Cited 58 defect violations.

Hazardous Materials units can include each tank car, each record to ensure accurate representation of substance, each evaluation of a release plan, each inspection of the shipper's paperwork, and other similar items.

2) CPUC Motive Power and Equipment inspectors:

- Submitted 1,546 inspection reports for 127,127 units;
- Identified 6,006 defects; and,
- Cited 125 defect violations.

Motive power and equipment units can include each locomotive, each rail car, inspection records or specific components thereof.

3) CPUC Operating Practices inspectors:

- Submitted 764 inspection reports for 5,317 units;
- Identified 428 defects; and,
- Cited 67 defect violations.

Operating Practices units can include ensuring the accuracy of train consist records, observing crews performing switching operations, reviewing the accuracy



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and completeness of accident records, ensuring compliance with certifications and licenses, and other similar items.

4) CPUC Signal and Train Control inspectors:

- Submitted 276 inspection reports for 4,118 units;
- Identified 845 defects; and,
- Cited 6 defect violations.

Signal and train control units can include each signal system appurtenance, maintenance and testing records, warning devices at crossings, and other electronic or mechanical signaling systems.

5) CPUC Track inspectors:

- Submitted 1,069 inspection reports for 28,386 units;
- Identified 6,177 defects; and,
- Cited 21 defect violations.

Track units are equal to each mile of track, each switch inspected, Roadway and Maintenance Machine inspections, records and other similar items involving the tracks.

## **Regular Inspections**

Regular inspections, required by California Public Utilities Code Sections 309.7 and 765.5(d) require the Commission to employ a sufficient number of federally-certified inspectors to ensure that railroad locomotives and equipment and facilities located in Class I railroad yards in California are inspected not less frequently than once every 120 days, and that all main and branch line tracks are inspected not less frequently than once every 12 months. Inspectors also conduct unannounced inspections at the facilities of shippers, consignees, freight forwarders, intermodal transportation companies, and railroads.

ROSB inspectors achieved 100 percent of the mandate that all locomotive and equipment repair facilities be inspected every four months.

However, as has been the case since FY 2005-2006, staff inspectors were unable to fulfill the mandate that all main and branch line tracks be inspected annually, and achieved only about 65 percent of track inspection mandates. This has been due to track inspection personnel attrition and the consequent vacancies. ROSB's unusually high personnel turnover rate and recruitment difficulties are due to the disparity in pay that exists between ROSB Railroad Safety inspectors and their FRA counterparts. FRA inspectors based in California earn on average 20 percent higher wages for performing essentially the same duties as ROSB Railroad Safety inspectors. ROSB continuously

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has vacancies due to inspectors moving to FRA employment.

## **Focused Inspections**

Under Public Utility Code Section 765.5(e), ROSB conducts focused inspections of railroad yards and track; operating practices; signal and train control; hazardous materials and railroad equipment. Typically, focused inspections are joint efforts between the FRA and ROSB, though ROSB can choose to, and often does, perform focused inspections on its own. Focused inspections involve inspectors from a variety of disciplines or multiple inspectors from a single discipline, working together at a specific location or rail facility.

The focused inspection program targets railroad issues that pose the greatest safety risk, based on inspection data, accident history, and rail traffic density. Focused inspections allow ROSB staff to evaluate all aspects of a railroad or facility's operational and maintenance practices, and procedures. They also allow for close evaluation of railroad management and labor abilities, comprehension, and integrity.

If corrective actions are recommended by ROSB, ROSB performs a follow-up where the focused inspection was conducted to determine progress by the railroad entity in carrying out the recommended actions.

## **Hazardous Materials Inspections**

ROSB inspectors conduct a variety of activities, including the investigation of accidents involving the actual or threatened release of hazardous materials as reported by the California Emergency Management Agency's (CEMA) 24-hour Warning Center. Inspectors also conduct unannounced inspections at the facilities of shippers, consignees, freight forwarders, intermodal transportation companies, and railroads. ROSB staff also inspects facilities regarding General Order 161(Rules and Regulations Governing the Transportation of Hazardous Materials By Rail; see Appendix), which has requirements for reporting the release or threatened release of hazardous materials where there is a reasonable belief that the release poses a significant present or potential harm to persons, property or the environment.

## **Accident Investigations**

ROSB inspectors investigate accidents including derailments; collisions between trains and other trains, motor vehicles, bicyclists, pedestrians, and obstructions; and hazardous materials releases from trains, pursuant to PU Code Section 315. ROSB staff evaluates each accident when reported to CPUC (usually, by CEMA) and determines the appropriate investigative response based on accident severity criteria, including:

- Impact to the public (evacuations, injuries, fatalities);
- Injuries or fatalities to railroad employees or passengers;
- Environmental impact;



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- Impact on commercial transportation (highway closures, commuter interruptions); and,
  - Violations of State or Federal railroad safety regulations or operating rules

ROSB staff investigates many minor accidents, initially through telephone interviews and electronic data collection unless circumstances deem otherwise. ROSB staff conducts on-site investigations of major accidents. Staff investigators examine pertinent evidence at accident sites, including the position of derailed equipment, marks on track or ties, signs of equipment defects, and locomotive event-recorder (black box) tapes. Staff also interviews train crews, analyze recorded radio transmissions and video, and observe signal test demonstrations, brake tests, and accident simulations. Once staff identifies a probable cause, they make recommendations to the railroad. Staff also evaluates the railroads' compliance with State and Federal regulations, and recommends enforcement action where applicable.

### **Security Inspections**

Sections 7665-7667 of the Public Utilities Code (implementing AB 3023, the Local Community Rail Security Act of 2006) require all rail operators to provide risk assessments to the CPUC, the Director of Homeland Security, and the California Emergency Management Agency that describe the following:

- Location and function of each rail facility;
- Types of cargo stored at or typically moved through the facility;
- Hazardous cargo stored at or moved through the facility;
- Frequency of hazardous movements or storage;
- A description of sabotage/terrorism countermeasures;
- Employee training programs;
- Emergency response procedures;
- Emergency response communication protocols

Each year, a Security Review Audit by ROSB inspectors is conducted at each railroad located in California to ensure compliance with Pub. Util. Codes 7665-7667. Beginning in 2009, all the railroads operating within the state was surveyed to determine compliance. In FY2011-12, ROSB inspectors conducted an annual Security Review Audit on the following railroads, all of which were found to be in compliance with Pub. Util. Codes 7665-7667:

1. LAJ (Los Angeles Junction Railroad) - Los Angeles

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2. PHL (Pacific Harbor Lines) - Wilmington
  3. NCTD (North County Transit District) - Oceanside
  4. VCRR (Ventura County Railroad) - Ventura
  5. SDIV (San Diego & Imperial Valley Railroad) - San Diego
  6. AMTK (Amtrak or NRPC) - Los Angeles
  7. RPRC (Richmond Pacific Railroad Corporation) - Richmond
  8. SFBR (San Francisco Bay Railroad) - San Francisco
  9. CZRY (Carrizo Gorge Railway) - San Ysidro
  10. FWRY (Fillmore & Western Railway) - Fillmore
  11. TRC (Trona Railway) - Trona
  12. PSRR (Pacific Sun Railroad) - Camp Pendleton Marine Base
  13. SMV (Santa Maria Valley Railroad) - Santa Maria
  14. SCAX (Metrolink or SCRRA) - Pomona
  15. WFS (West Isle Line Railroad) - Alpaugh
  16. MET (Modesto & Empire Traction Company) - Modesto
  17. ST&E (Stockton Terminal & Eastern Railroad) - Stockton
  18. ACE (Altamont Commuter Express) - Stockton
  19. CCTC (Central California Traction Company) - Stockton
  20. SJVR (San Joaquin Valley Railway) - Exeter
  21. JPBX (Caltrain) - San Carlos
  22. NCR (Niles Canyon Railway) - Mountain View
  23. SCBG (Santa Cruz & Big Trees Railroad) - Santa Cruz
  24. NVRR (Napa Valley Railroad) - Napa
  25. CFNR (California Northern) - Woodland
  26. CWR (California Western Railroad -Skunk Train) - Fort Bragg
  27. SERA (Sierra Northern Railway) - Woodland
  28. BNSF (BNSF Railway) - San Bernardino
  29. UP (Union Pacific Railroad) - Colton
  30. QRR (Quincy Railroad) - Quincy

Staff inspectors annually participate in Intermodal Security Exercise Programs hosted by the Transportation Security Administration (TSA) in partnership with the U.S. Coast Guard. The program brings together Federal, State, local and private industry stakeholders in a cooperative environment to validate security plans and procedures. Additionally, staff inspectors participate in specialized trainings offered by the Governor's Office of Homeland Security and the TSA. Security Hazardous Materials inspectors are required to be credentialed with Secret Clearance from the U.S. Department of Homeland Security and as security-cleared employees, are required to take annual security training.

### **Complaint Investigations**

ROSB receives complaints from such sources as railroad employees, railroad unions (e.g., the United Transportation Union and the Brotherhood of Locomotive Engineers), the general public, and government personnel. ROSB coordinates its efforts with the FRA, firstly to verify whether the complaint was also received by that agency. If it is indeed a duplicate complaint, the two agencies determine which one will handle the investigation.

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For complaints investigated by ROSB, an inspector discusses the issue with the complainant or a contact person. The inspector inspects the relevant location and gathers data, including photographs and other pertinent information. The inspector will discuss the issue with railroad managers in an effort to gain general compliance by pointing out unsafe condition, practice or risk pertinent to the complaint. A formal or informal action plan is discussed with railroad management, including a timeframe for remediation. The inspector then prepares a written response, with proposals for resolving the complaint, for review by his or her supervisor. A response letter is prepared by one of the Branch Supervisors and mailed to the complaining party or his/her representative. A follow-up inspection is performed to ensure compliance and/or remedial action.

## **Other Proactive Safety Issues**

### **Federal Rail Safety Improvement Act of 2008 and Positive Train Control**

The Federal Rail Safety Improvement Act of 2008 mandated the installation of Positive Train Control (PTC) systems on a large proportion of the nation's railroads by December 2015. PTC technology is intended to prevent train-to-train collisions, over-speed derailments, and injuries to railroad workers resulting from unauthorized train movements, as well as unauthorized train movements due to switches left in the wrong position.

During FY 2011-12, ROSB continued to work with the FRA in PTC oversight, including oversight over Class I railroads and commuter railroads in the Los Angeles Basin in their effort to achieve PTC implementation. Metrolink (Southern California Regional Rail Authority) and Union Pacific Railroad (UPRR) voluntarily pledged to implement PTC on UPRR - Metrolink joint operation trackage by the end of 2012. However, UPRR has stated that they will not be able to have full implementation of PTC by the December 2012 date but could have partial implementation of PTC on joint trackage with Metrolink by September 2013.

### **High-Speed Rail**

Following the passage of the California High Speed Rail (HSR) Bond Initiative, ROSB began formulating a safety oversight approach that recognizes the reality that there is no railroad in operation in the United States that utilizes the new technologies that will be employed on the California HSR system.

Each derailment, hazardous materials spill, or crossing accident diminishes confidence in the State's ability to protect the public and the environment, and regulate the rail industry. If State rail safety inspectors can effectively mitigate rail accidents and instill a strong safety culture for existing rail carriers, the ability to transition this safety culture to high-speed rail increases exponentially.

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## **Operation Lifesaver**

Operation Lifesaver is an international volunteer organization founded in 1972 that aims to end collisions and the resulting fatalities and injuries at highway-rail grade crossings and on railroad rights of way. Its volunteers pursue this mission through education, enforcement and engineering efforts.

ROSB staff supports Operation Lifesaver activities, which complement their own mission. ROSB employees volunteer throughout the state, providing presentations to schools, community organizations, driver's education classes and more, as well as teaming up to provide education at weekend events such as festivals and safety fairs. ROSB personnel also take part in specialized Officer on the Train events that partner participating railroads with local law enforcement to promote compliance with State motor vehicle laws and penal codes on railroad at-grade crossings and rights of way.

## **Penalties and Citations**

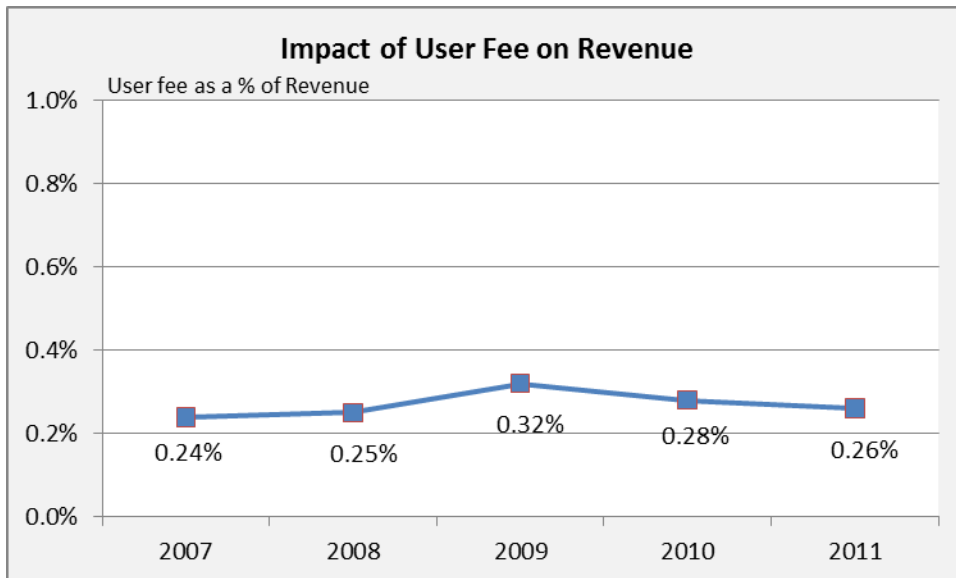
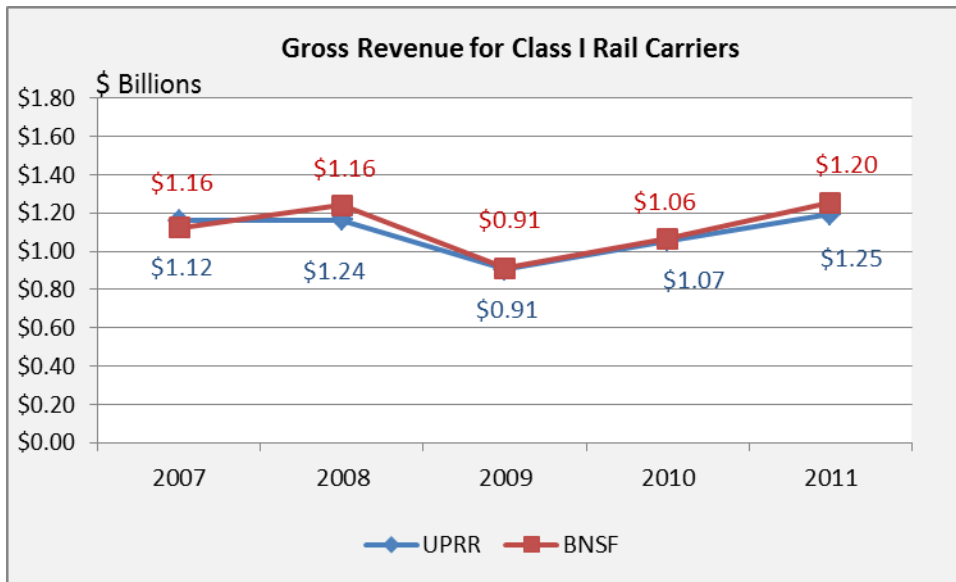
ROSB assesses penalties and makes civil penalty recommendations to the FRA when ROSB inspectors discover non-compliances with federal railroad safety regulations.

Under CPUC Resolution ROSB-002, CPSD administers a citation program to enforce compliance by the Union Pacific Railroad Company (UP) and BNSF Railway Company with General Order 26-D, General Order 118-A, and Public Utilities Code Section 7662. These contain requirements for walkways, clearances, and certain railroad operating rules. The citation program authorizes the Director or Deputy Director of CPSD to issue citations to railroad carriers for violation of these requirements. A railroad issued such a citation may accept the fine imposed or contest it through a process of appeal.

ROSB is the CPSD unit with the primary responsibility for discovering violations covered under ROSB-002 and writing up the resulting citations. To date, two citations, for \$33,000 and \$27,000 respectively, have been issued, both to UP for violations of GO 26-D clearance requirements; UP paid both citations promptly.

## **Regulatory Fee Impact on Competition**

The activities of ROSB are supported primarily through fees collected from California railroads based on a percentage assessed against annual gross revenues, pursuant to Pub. Util. Code Sections 421 and 422. Monies collected are used to fund the salary and expenses of staff involved exclusively in railroad safety activities as described in the Pub. Util. Code, including Sections 309.7, 315, 765.5, 765.6, 1202.7, and 7665-7667.



From 2010 to 2011, UPRR and BNSF Railway Company (BNSF) California combined gross revenues increased by 13 percent and 17 percent, respectively. UPRR has reported record earnings in the history of the railroad for the second quarter and again in the third quarter of 2012: \$5.3 billion in operating revenue, up 5 percent year over year; \$1.8 billion in operating income, up 13 percent; \$2.19 per share in diluted earnings, up 18 percent; a 66.6 operating ratio, down 2.5 points; and a 94 customer satisfaction index, up 3 points. In addition, net income climbed 15 percent to an all-time high of \$1 billion.

The primary driver of these gains was chemicals transport, which posted an 18-percent volume gain (to 275,000 units) and a 17-percent revenue gain (to \$841 million). In the chemicals sector, crude oil business leaped 300 percent. These significant increases in transporting chemicals increase the risk of chemical leaks and spills as a result of

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derailments. Retaining all inspectors, rail, operations, and signal, in addition to the hazardous materials inspectors, are critical to ensuring safe rail transportation and generating confidence in rail safety in California.

The railroad user fees assessed in 2011 on UPRR and BNSF represented one quarter of one percent of revenues, and are unlikely to have had any effect on competition.



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## Appendix

### Examples of Regular Inspections

Below are examples of regular inspections carried out during FY 2011-12:

**August 8, 2011:** During an inspection a ROSB track inspector discovered several walkway hazards while inspecting track on the UP Coast Subdivision track in the Watsonville Yard. There were broken wood walkway planks (with water below) and a power pole left in a walkway, which rendered the walkway out of compliance with Commission General Order 118-A (118-A regulates walkway safety). These conditions presented a serious slip, trip, or fall hazard to trainmen who work in this area, especially at night. The inspector reported the defect to railroad management. The condition was promptly corrected.



Hazardous walkway condition at UPRR's Watsonville Yard

**March 15, 2012:** An ROSB inspector conducted an inspection of an outbound train at the UP J.R. Davis Yard in Roseville. The train had been declared ready for departure by railroad personnel. Such a train is required to undergo a pre-departure inspection and a brake test and must be found by railroad personnel to have 100 percent operational brakes with no potentially derailing- or injury-causing defects. The ROSB inspector discovered that one of the cars had a defective axle on the brake. This defect could cause the train line to leak, and cause the train to go into an undesired emergency braking operation, or could cause the axle to break in two. As a result, the train could derail. In all, the inspector identified that out of a total of 69 cars in this train, 8 had defects. The inspector reported these defects to the railroad, which promptly corrected the defects.



Defective axle on UP train declared ready for departure

**March 19, 2012:** A ROSB inspector conducted an inspection of the UP/Richmond Pacific Railroad interchange track in Richmond. During the inspection the inspector identified six hazardous material cars without properly applied hand brakes. This condition is out of compliance with federal regulations pertaining to securing cars or engines. Unapplied, or improperly applied, hand brakes could allow rail cars to roll out of the track and become runaways. Further investigation revealed that a Richmond Pacific Railroad switch crew had left the cars unsecured on the interchange track and had gone to another rail yard to pick up additional cars. The cars were unsecured on a track that is connected to a UP Main Line track, where passenger trains travel regularly. Due to the potential danger to public safety that this situation posed, the railroad was immediately notified; protective and preventive actions taken. Railroad personnel arrived and applied the appropriate number of hand brakes. Subsequently, the ROSB inspector issued an FRA civil penalty recommendation (Violation).



Cars left unattended without proper hand brakes

**May 3, 2012:** ROSB inspectors conducted an inspection of a potential hazard on a Northern California UP industry track that had been identified during a prior inspection.



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At the industry location, the railroad had installed a new track switch (rail car access to the industry). During the initial inspection, ROSB staff noted various safety hazards that included lack of handrails on a track carrying structure in the area near the new switch. Upon notification of the problem by the ROSB inspectors, the railroad acknowledged the need to make repairs. Railroad managers were told to notify ROSB prior to placing the new switch into service, so that ROSB could conduct a follow-up inspection. That follow-up inspection revealed that all the conditions noted had been satisfactorily resolved.



Initial inspection: faulty walkway, no handrails



Follow up: safe walkway with handrails

**June 21, 2012:** During an inspection at the BNSF Watson Yard, located in Wilmington, an ROSB inspector identified a broken retaining bolt that supported the large vertical pin located at one end of a rail car. This pin secures the car in place. Left uncorrected, this condition could have caused the rail car to separate from the rest of the train. The inspector recommended a civil penalty for this defect..



This photo shows the hole where the end of the bolt should be.

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## Examples of Focused Inspections

Below are examples of ROSB focused inspections as well as joint ROSB-FRA focused inspections during FY 2011-12.

**July 12, 2011:** A ROSB Signal & Train Control inspector participated in a focused inspection of the UP Coast Subdivision along with the FRA. The inspection team visited locations between Watsonville and Gilroy. While performing a crossing inspection at Stonyford crossing in Logan, the team noticed rail cars left standing on a track ten feet from the edge of the crossing. This is not in compliance with the General Code of Operating Rules (GCOR) 6.32.4, which requires cars to be left no less than 250 feet from a crossing so as not to obstruct the view for motorists... This also created a hazard by obstructing the view of the crossing from approaching northbound trains on adjacent tracks. Stonyford crossing is equipped with flashers-only warning devices (without warning gates). As a result of the inspection, UP Signal managers immediately notified the UP Dispatcher to apply a stop and protect order on the crossing. This requires trains to stop and have train personnel flag the crossing to protect vehicular and train movements. A Contractor, who was responsible for the rail car placement, was advised that they would need to move the rail cars away from the edge of the crossing to comply with the 250-foot GCOR rule. At the direction of ROSB inspectors, the UP Director of Train Operations scheduled a meeting with Contractor to prevent this unsafe condition from reoccurring again.



Cars left standing 10 feet from the edge of the roadway at Stonyford private crossing





FRA and ROSB inspectors observe a UPRR inspector performing a test on a spring switch to verify that it is properly working to activate a red signal warning oncoming trains. Without this signal warning a full speed derailment could occur.

**July 12, 2011:** A ROSB four-person Hazardous Materials inspection team participated in a focused inspection, along with the FRA, at the Port of Long Beach. Members of the United States Coast Guard (USCG) also assisted in the inspection. Port of Long Beach operations include loading and unloading of various commodities, which include hazardous materials and preparation of them for continued transportation by rail. Teams were established containing a member from each agency and assigned a specific shipping company to inspect. At the completion of the inspection, an overall After Action Review was conducted by the FRA. The review concluded that 275 containers were inspected with an estimated ten percent of them having minor defects, and one container having a federal violation pertaining to the shipping of hazardous materials. As a result of the inspection, the defects were corrected by the shipping companies.

**August 23, 2011:** Two ROSB Hazardous Materials inspectors participated in a focused inspection at the Port of Oakland. The inspection was comprised of teams that were strategically located throughout the Port. The inspectors were able to more thoroughly inspect freight containers, bulk liquid tanks, tractor trailers, trucks and truck drivers before shipments left the port. The agencies that participated in this operation, along with the ROSB, were the U.S. Coast Guard, Customs and Border Protection, Federal Motor Carrier Safety Administration, Pipeline and Hazardous Materials Safety Administration, Transportation Security Administration, California Highway Patrol and the City of Oakland Police Department. The ROSB inspectors were teamed up with two hazardous materials inspectors from the U.S. Coast Guard and one hazardous materials inspector from the Pipeline and Hazardous Materials Safety Administration (PHMSA). This team focused its inspection on the UP Intermodal facility located within the Port of Oakland. Defects found included inadequate blocking and bracing of hazardous materials carried within containers, which when inadequately secured could

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tip over, become damaged and ultimately leak. As a result of this inspection, the shipping of these containers was not permitted until the defects were corrected.



Team inspects container with inadequate safeguards



Container being opened for inspection by ROSB inspector

**October 18 & 19, 2011:** During an ROSB inspection, three Operating Practices (OP) inspectors and a Signal & Train Control (S&TC) inspector visited Stockton to conduct the second in a series of Northern California OP focused inspections. They inspected



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BNSF Railway's Mariposa Intermodal Yard, BNSF Riverbank and Mormon Yards as well as UP and Central California Traction (CCT) yard facilities in Stockton. OP inspectors observed switching & yard conditions, walkway conditions and compliance with federal and state regulations; and railroad operating and safety rules. The inspection team found that the Stockton UP Yard had a number of defects and violations, which consisted of equipment left on an adjacent track and failure to properly secure rail cars from unplanned movement. These findings were reported to the appropriate UP managers (and Superintendent) in Stockton. The conditions were promptly corrected.



Switchman too close to equipment, and handbrake improperly secured

**November 8 – 9, 2011:** ROSB and the Commission's Rail Transit Safety Section (RTSS) performed a joint focused inspection on North County Transit District (NCTD) tracks and facilities in Oceanside. The purpose of the joint inspection was to allow RTSS and ROSB staff an opportunity to familiarize themselves with the rules and regulations, both state and federal, which are incumbent upon each discipline within each respective Branch of CPSD. This exercise allowed inspectors to share a working partnership as a group, inspecting areas where transit and heavy rail are in close proximity, share track crossings or junctions and/or share temporal separation operations and proactively discuss risk assessment and management issues. The inspection revealed some mechanical & track deficiencies and defects.

A closeout meeting was held on November 10, 2011 with NCTD Managers and staff. ROSB staff presented a list of the deficiencies and risk management questions that were noted and discussed. ROSB and RTSS staff performed a follow up inspection a little over a month after this focused inspection where it was determined that the deficiencies had been corrected.

**December 5, 2011:** ROSB and FRA conducted a focused inspection of the UP Roseville Service Unit. The UP subdivisions inspected included the Martinez, Roseville, Valley, Niles, Sacramento, Fresno and Canyon Subdivisions. The objective of the assessment was to determine compliance with federal requirements regarding qualifications of UP track inspectors and track conditions. During this inspection, 10

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state and federal inspectors surveyed 800 miles of track, inspected 1442 units and monitored 25 UP employees who were themselves inspecting track. Three key components that the regulatory inspection team identified during the inspection as requiring improvement were the following: 1) Railroad inspectors should get out of the hi-rail vehicles more often for ground inspection; 2) they should inspect for possible lost motion in track switch components (connecting rods and bolts, switch rods and bolts); and 3) they must take deflective measurements to add with static measurements (under load measurements) for accurate geometry condition measurements. Overall, this focused inspection indicated that UP track inspectors are capable of identifying defective conditions. However, their thoroughness is an area of concern. On December 9th a follow up meeting was held with UP management to discuss the findings of this focused inspection and it was confirmed that the defects were being corrected. ROSB inspectors and UP management also agreed to conduct follow up meetings to ensure railroad track inspectors are focused on identifying defects that if left unchecked could result in serious accidents.

## Investigation Summaries

**July 27, 2011:** A southbound UP freight train derailed 22 cars, 6 of which were carrying hazardous materials in Littlerock, 50 miles northeast of Los Angeles. Local residents within a one-mile radius were evacuated. Residents within a two-mile area were notified and prohibited from entry while the car condition was assessed. The train crew said they felt a "pull" and then a "snap" and the train then went into the emergency train air brake system application.

The ROSB investigation concluded that the cause of the accident was due to track tie deficiencies that were compounded by rail thermal expansion. There were ample indications of track integrity loss that UP managers and inspectors should have been able to identify prior to this derailment. The ROSB investigation found that the evidence detected by routine visual and technological means was not discovered or acted upon by UP maintenance management or field employees.

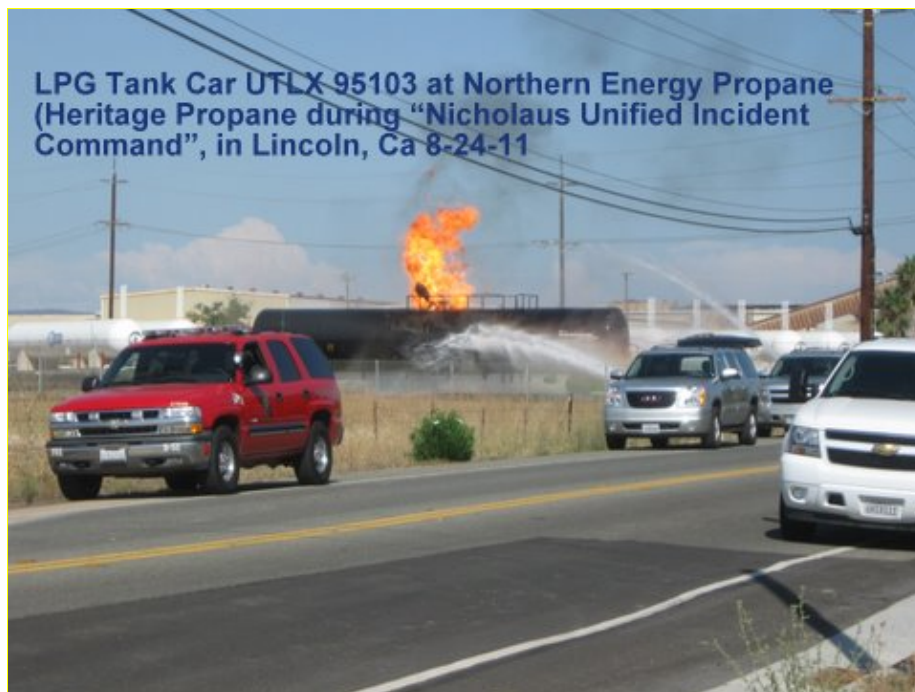
ROSB determined that some local railroad managers lacked basic track knowledge, not only managers in this vicinity, but in other areas of California as well. ROSB will be working with UP to ensure that UPRR provides training that enables its personnel to better identify and remediate track deficiencies of this nature.

**August 23 – 25, 2011:** ROSB and FRA inspectors participated in the investigation of a Liquefied Petroleum Gas (also known as LPG or propane) tank car fire in Lincoln. The fire started at Northern Energy Company's Lincoln facility on August 23rd and burned until the early morning hours of August 25<sup>th</sup>. Transportation of rail cars to and from the facility is provided by UP, though the incident did not occur on railroad property. The fire ignited when a Northern Energy employee was on top of the car. The employee sustained burns and was taken to a local Roseville hospital for treatment. Once the first responders made an initial assessment of the fire danger, they set up a unified incident command and evacuated the area within a 1 mile radius of the fire, including 4,800 households. The evacuation was deemed necessary due to the risk of explosion of the tank car if it should overheat. Highway 65 and UP main track were closed until the danger was over. There were up to 200 responders from various agencies present

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at any given time. ROSB's primary responders included a Hazardous Material inspector who formed an investigative team to determine cause(s) and corrective actions.

The investigation revealed that the incident was caused by operator error. Static friction can occur when propane flows when a tank car is not adequately grounded. An employee of the facility was sampling product without sufficient grounding protection, which caused the product to ignite. ROSB recommendations included reviewing and altering procedures for unloading LPG cars, including placing cars in a location where they can be grounded before opening any valves. UPRR confirmed to the ROSB that these recommendations have been put into place so as to prevent this type of incident happening again.



LPG Rail Tank Car loaded with liquefied petroleum gas being cooled by water. Up to 5,000 gallons a minute of water were used by the firefighters to keep the tank car cool to control the burn

**October 12, 2011:** A southbound Amtrak train operating on the UP Niles Subdivision failed to observe a “stop” signal at the north end of Jack London Square in Oakland. The train collided with a northbound Amtrak train which was stationary in Jack London Square. Jack London Square is a regular scheduled station stop for Amtrak San Joaquin and Coast Starlight trains. As a result of the head-on collision, multiple injuries occurred to Amtrak crew members and passengers, and there was a minor derailment of equipment. ROSB and FRA investigators responded to the scene along with other emergency responders, including Amtrak and UP managers and law enforcement personnel. FRA, ROSB, UP and Amtrak management investigated the incident and concurred that the collision was caused by the failure of the train to comply with a fixed signal displaying a stop indication. As a result of this investigation, the railroad made the determination to terminate the employees at fault and the ROSB and railroad management agreed to work together on more drills to be sure that train crews are attending to and complying with signal indications to prevent such incidents from occurring in the future.

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**June 21, 2012:** A UP freight train derailed 12 cars near Bealville approximately 35 miles southeast of Bakersfield. All 12 cars derailed onto their sides. Once southeast of Bakersfield, the train experienced a loss of power in its communication system which was the cause of the accident. ROSB inspectors found no violations for train handling or track conditions, but as a result of this investigation, ROSB and UP managers agreed to focus more efforts on training of operational communication procedures to prevent such incidents in the future.

## Examples of Operation Lifesaver Presentations

**July 13, 2011:** An ROSB inspector gave an Operation Lifesaver (OL) presentation to a group of Junior Lifeguards at the State Beach in San Clemente. This is a prime location for OL training as trains, such as Metrolink, travel adjacent to this very popular beach. The presenter was pleased to hear from previous participants remembered safety pointers such as *STAY OFF THE TRACKS, STAY AWAY AND STAY ALIVE*. The audience was provided information, such as train stopping distances, and warned that once a train engineer sees someone on the tracks it is too late for the train to stop before hitting the person. The inspector is invited to return to speak to additional groups of Lifeguards to spread the OL safety message in an ongoing effort to raise public awareness about tracks and trains.



Inspector delivers OL presentation to San Clemente Jr. Lifeguards





The OL Booth featured a railroad locomotive cab simulator to enhance the message of preventing incidents, injuries and fatalities around railroads

**February 27, 2012:** The San Diego Police Department conducted a railroad safety regulation enforcement event at the railroad grade crossing located at South 28th Street and East Harbor Drive in southeast San Diego. ROSB participated by assisting at an OL booth set up in the same area to educate pedestrians about trains and railroad tracks, sharing with them safety tips to help prevent injuries or fatalities. The location of 28th street and E. Harbor Drive was selected due to several safety concerns: (1) BNSF railroad tracks and San Diego Trolley tracks being in close proximity to each other, giving rise to the strong possibility of trains approaching from different directions, (2) heavy vehicular and pedestrian traffic in the area, (3) tracks separated by a gap inside of which vehicles could get caught, raising the possibility of such vehicles fouling the track while a train is approaching, and (4) BNSF train crew reports of close calls of near-collisions of pedestrians and vehicles with BNSF trains. During this five hour event, police issued citations to 60 motorists and 10 pedestrians, 18 warnings were issued to drivers, and 1 car was impounded. Approximately 25 pedestrians were educated at the OL safety booth staffed by ROSB.



A passenger vehicle proceeding under crossing gates, and a pedestrian receiving a citation

## Laws that Govern the Rail Safety Program

State Constitution, Article XII, Sec. 4	The commission may fix rates and establish rules for the transportation of passengers and property by transportation companies ....
PU Code Sec. 309.7 (a)	(a) The division of the commission responsible for consumer protection and safety shall be responsible for inspection, surveillance, and investigation of the rights-of-way, facilities, equipment, and operations of railroads and public mass transit guideways, and for enforcing state and federal laws, regulations, orders, and directives relating to transportation of persons or commodities, or both, of any nature or description by rail. The consumer protection and safety division shall advise the commission on all matters relating to rail safety, and shall propose to the commission rules, regulations, orders, and other measures necessary to reduce the dangers caused by unsafe conditions on the railroads of the state.
PU Code Sec. 309.7 (b)	(b) In performing its duties, the consumer protection and safety division shall exercise all powers of investigation granted to the commission, including rights to enter upon land or facilities, inspect books and records, and compel testimony. The commission shall employ sufficient federally certified inspectors to ensure at the time of inspection that railroad locomotives and equipment and facilities located in class I railroad yards in California are inspected not less frequently than every 180 days, and all main and branch line tracks are inspected not less frequently than every 12 months.
PU Code Sec. 309.7 (c)	(c) The general counsel shall assign to the consumer protection and safety division the personnel and attorneys necessary ...to enforce safety laws, rules, regulations, and orders, and to collect fines and penalties resulting from the violation of any safety rule or regulation.
PU Code Sec. 309.7 (d)	(d) The activities of the consumer protection and safety division that relate to safe operation of common carriers by rail, other than those relating to grade crossing protection, shall also be supported by the fees paid by railroad corporations.
PU Code Sec. 315	315. The commission shall investigate the cause of all accidents occurring within this State upon the property of any public utility or directly or indirectly arising from or connected with its maintenance or operation, resulting in loss of life or injury to person or property and requiring, in the judgment of the commission, investigation by it, and may make such order or recommendation with respect thereto as in its judgment seems just and reasonable.
PU Code Sec. 765.5	(a) The purpose of this section is to provide that the commission takes all appropriate action necessary to ensure the safe operation of railroads in this state. (b) The commission shall dedicate sufficient resources necessary to adequately carry out the State Participation Program for the regulation of rail transportation of hazardous materials as authorized by the Hazardous Material Transportation Uniform Safety Act of 1990 (P.L. 101-615). (c) On or before July 1, 1992, the commission shall hire a minimum of six additional rail inspectors who are or shall become federally certified, consisting of three additional motive power and equipment inspectors, two signal inspectors, and one operating practices inspector, for the purpose of enforcing compliance by railroads operating in this state with state and federal safety regulations. (d) On or before July 1, 1992, the commission shall establish, by



	<p>regulation, a minimum inspection standard to ensure, at the time of inspection, that railroad locomotives, equipment, and facilities located in class I railroad yards in California will be inspected not less frequently than every 120 days, and inspection of all branch and main line track not less frequently than every 12 months.</p> <p>(e) Commencing July 1, 2008, in addition to the minimum inspections undertaken pursuant to subdivision (d), the commission shall conduct focused inspections of railroad yards and track, either in coordination with the Federal Railroad Administration, or as the commission determines to be necessary. The focused inspection program shall target railroad yards and track that pose the greatest safety risk, based on inspection data, accident history, and rail traffic density.</p>
PU Code Sec. 768	768. The commission may, after a hearing, require every public utility to construct, maintain, and operate its line, plant, system, equipment, apparatus, tracks, and premises in a manner so as to promote and safeguard the health and safety of its employees, passengers, customers, and the public. The commission may prescribe, among other things, the installation, use, maintenance, and operation of appropriate safety or other devices or appliances, including interlocking and other protective devices at grade crossings or junctions and block or other systems of signaling. The commission may establish uniform or other standards of construction and equipment, and require the performance of any other act which the health or safety of its employees, passengers, customers, or the public may demand.
PU Code Sec. 7661	The consumer protection and safety division shall investigate any incident that results in a notification...and shall report its findings concerning the cause or causes to the commission.
PU Code Sec. 7662	Requires a railroad to place appropriate signage to notify an engineer of an approaching grade crossing and establishes standards for the posting of signage and flags, milepost markers, and permanent speed signs.
PU Code Sec. 7665.2	By July 1, 2007, requires every operator of rail facilities to provide a risk assessment to the commission and the agency for each rail facility in the state that is under its ownership, operation, or control, and prescribes the elements of the risk assessment.
PU Code Sec 7665.4	<p>(f) Requires the rail operators to develop an infrastructure protection program, and requires the CPUC to review the infrastructure protection program submitted by a rail operator. Permits the CPUC to conduct inspections to facilitate the review, and permits the CPUC to order a rail operator to improve, modify, or change its program to comply with the requirements of this article.</p> <p>(g) Permits the CPUC to fine a rail operator for failure to comply with the requirements of this section or an order of the commission pursuant to this section.</p>
PU Code Sec. 7667	
General Order 22-B	Requires accident investigations on all incidents occurring on railroad property.
General Order 26-D	Establishes minimum clearances between railroad tracks, parallel tracks, side clearances, overhead clearances, freight car clearances, and clearances for obstructions, motor vehicles, and warning devices to prevent injuries and fatalities to rail employees by providing a minimum standards for overhead and side clearance on the railroad tracks. (Pursuant to PUC Sec. 768.)
General Order 72-B	Formulates uniform standards for grade crossing construction to

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	increase public safety. (Pursuant to PUC Sec. 768.)
General Order 75-D	Establishes uniform standards for warning devices for at-grade crossings to reduce hazards associated with persons traversing at-grade crossings. (Pursuant to PUC Sec. 768.)
General Order 118-A	Provides standards for the construction, reconstruction, and maintenance of walkways adjacent to railroad tracks to provide a safe area for train crews to work. (Pursuant to PUC Sec. 768.)
General Order 126	Establishes requirements for the contents of First-Aid kits provided by common carrier railroads. (Pursuant to PUC Sec. 768.)
General Order 161	Establishes safety standards for the rail transportation of hazardous materials. (Pursuant to PUC Sec. 768.)
General Order 135	Establishes regulations governing the occupancy of public grade crossings by railroads. (Pursuant to PUC Sec. 768.)

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## GLOSSARY

AAR	After Action Review
ATIP	Automated Train Inspection Program
BNSF	BNSF Railway
CCT	Central California Traction
CEMA	California Emergency Management Agency
CFR	Code of Federal Regulations
CPSD	Consumer Protection and Safety Division
CPUC	California Public Utilities Commission
FRA	Federal Railroad Administration
HSR	High Speed Rail
Metrolink	Southern California Regional Rail Authority
NCTD	North County Transit District
OL	Operation Lifesaver
OP	Operating Practices
PTC	Positive Train Control
ROSB	Railroad Operations and Safety Branch
RSSIMS	Rail Safety & Security Information Management System
RTSS	Rail Transit Safety Section
TSA	Transportation Security Administration
UPRR	Union Pacific Railroad
USCG	United States Coast Guard