

DEPARTMENT OF CALIFORNIA HIGHWAY PATROL

INITIAL STATEMENT OF REASONS

TITLE 13, CALIFORNIA CODE OF REGULATIONS, DIVISION 2, CHAPTER 6
AMEND ARTICLE 2.7, SECTION 1159

ROUTES FOR TRANSPORTATION OF RADIOACTIVE MATERIALS (CHP-R-2020-06201)

PURPOSE OF REGULATIONS AND PROPOSED AMENDMENTS

The California Highway Patrol (CHP) proposes to amend regulations in Title 13 of the California Code of Regulations (CCR) related to designated routes for the through transportation of highway route controlled quantity (HRCQ) shipments of radioactive materials (RAM).

Pursuant to California Vehicle Code, Division 14.5, Section 33000, the CHP shall adopt regulations specifying the routes to be used in the through transportation of HRCQ RAM. The proposed changes are developed to enhance public health and safety, and have been consulted with the State Fire Marshall (SFM), California Department of Public Health (DPH), California Department of Transportation (Caltrans), Los Angeles County Fire Department (LACFD), San Bernardino County Fire Department (SBCFD), Southern California Association of Governments (SCAG), and major HRCQ RAM manufacturers and carriers. After the proposed regulations are adopted, they will be provided to the United States (U.S.) Department of Transportation (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) in order to update the national registry of hazardous materials routing.

PURPOSE OF AMENDMENTS

The proposed amendments will add State Route (SR)-210 between Interstate (I)-210 or SR-57, near San Dimas, and I-15, near Fontana, as a designated highway for transporting HRCQ RAM to enhance public health and safety in this area.

Title 49 of the Code of Federal Regulations (CFR), Section 397.101, Requirements for Motor Carriers and Drivers, (a)(1) and (2), require that the routes to be used must minimize radiological risk to the public, considering crash rates, transit time, population density, and other relevant factors. Title 49, CFR, Section 397.103, Requirements for State Routing Designations, (a), also requires the selection of routes to minimize radiological risk using Guidelines for Selecting Preferred Highway Routes for Highway Route Controlled Quantity Shipments of Radioactive Materials (DOT/RSPA/HMS/92-02) or an equivalent routing analysis which adequately considers overall risk to the public. This routing assessment uses a combination of the mentioned guidelines and the recommended methodologies outlined in the Highway Routing of

Hazardous Materials – Guidelines for Applying Criteria (FHWA-HI-97-003), published by the Federal Highway Administration (FHWA) of the U.S. DOT.

Considering HRCQ RAM shipments usually demonstrate varying radioactive activity levels and that HRCQ RAM shipment packages are always sealed with the highest protection, this assessment for the selection of a common route applicable to all HRCQ RAM shipments generalizes these differences, as well as the number of drivers facing the limited radiological exposures. Since the time of day for transporting HRCQ RAM in the state is not currently prescribed in regulations and traffic congestion usually occurs at particular times of the day, this assessment focuses on the population and housing densities since they are generally correlated to traffic congestion and people gathering along highways. In addition to population and housing densities, the methodologies used also take into consideration items such as the drive distance and time, number of schools, and traffic crash rates along the highways.

The data is compiled using demographic and spatial data retrieved from the 2010 census survey conducted by the U.S. Census Bureau (CB), the 2012 emergency facility sites composed by the Southern California Earthquake Center (SCEC) at the University of Southern California (USC), the traffic volume counts compiled by Caltrans, the crash incidents collected in the CHP's Statewide Integrated Traffic Records System (SWITRS) database, and the highway length and transit time derived from Google Earth (GE) and Google Maps (GM). When data is not available for certain segments of local roads, the best estimates on traffic volume counts and/or crash rates are applied. The evaluation of relative risks for each alternative route is conducted using a geographic information system (GIS) with a 1.4-mile buffer zone of the routes referenced in the 2016 Emergency Response Guidebook (ERG) issued by the PHMSA.

RATIONALE AND ANALYSIS

While the HRCQ RAM routes were designated and became effective in 1994, the current section of SR-57 between San Dimas and Pomona was signed as one segment of I-210 and was included in the existing routes. This section of highway was re-signed as SR-57 in 2003. It provides an access between I-10 and I-210 to avoid transporting HRCQ RAM on highways by commercial vehicles through the heavily populated city of Los Angeles. In 2015, the CHP updated the CCR and relabeled this former section of I-210 as SR-57 on the designated HRCQ RAM route map.

The highway segment east of I-210, between SR-57 near San Dimas and I-10 near Redlands, is signed as SR-210. Combining both I-210 and SR-210, this entire highway is known as the Foothill Freeway, as named by Senate Concurrent Resolution 29, Chapter 128, in 1991, and is a part of the California Freeway and Expressway System and the National Highway System. Since the 1990s, SR-210 has been upgraded gradually. It now serves as a terminal access meeting all requirements under the federal Surface Transportation Assistance Act of 1982. The western portion of SR-210 between SR-57 near San Dimas and SR-259 near San Bernardino was upgraded to the Interstate Highway standards by 2007. However, the eastern portion between SR-259, about 11.6 miles east of I-15, near San Bernardino and I-10 near Redlands has not yet met those standards. More improvement work on SR-210 is expected to be completed before the American Association of State Highway and Transportation Officials can approve re-signing the

entire Foothill Freeway as I-210. Thus, this assessment will be focusing only on the western portion of SR-210.

According to the currently designated HRCQ RAM highway routes, carriers heading south on I-15 at Point A, as shown in *Figure 1*, to reach I-210 at Point D, were required to travel westbound through the U-shaped route of I-15 to Point B, I-10 to Point C, and SR-57 to Point D, or vice versa for eastbound shipments on I-210. Designating SR-210 between I-210 and I-15 as an HRCQ RAM route may provide a direct link and deserve an evaluation.

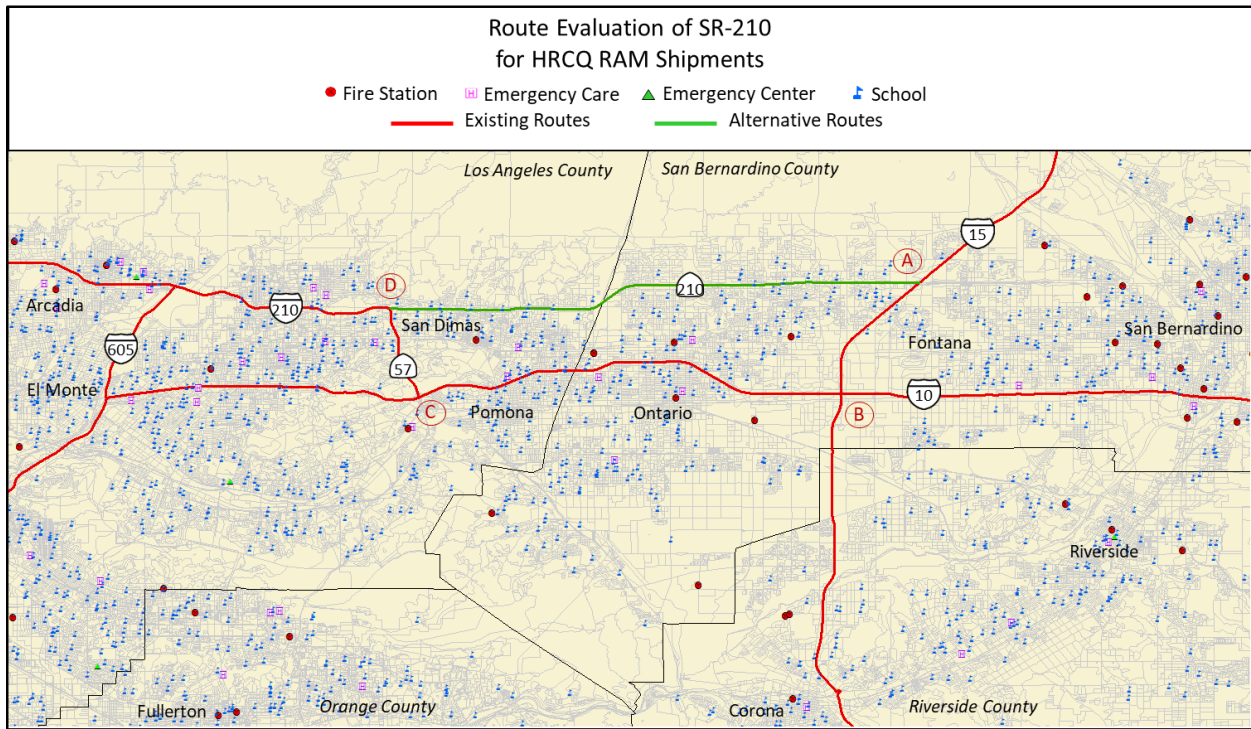


Figure 1: SR-210 Evaluated for Transporting HRCQ RAM

For this purpose, eight routes were derived for comparisons. Table 1 and Table 1.1 list various characteristics of these routes. From Point A to Point D, Route 1 (ABCD) follows the existing routes through I-15 to Point B and I-10 to Point C then SR-57 to Point D, and Route 2 (AD) represents the proposed route using solely SR-210. Route 1 is 6.5 miles longer and takes 44 percent more drive time than Route 2. Within their 1.4-mile buffers, Route 1 also possesses 48 percent more population and 34 percent more housing units. Having a higher population, Route 1 also holds 45 percent more schools. Compounded with an 83 percent higher crash rate, Route 1 presents a 171 percent or 146 percent higher relative population or housing risk, respectively, along the entire route than Route 2. Thus, Route 2, utilizing SR-210, shows huge advantages for transporting HRCQ RAM from Point A to Point D, or vice versa.

Taking this opportunity, more routes are also evaluated for shipments starting and ending with different points. For shipments between Point A and Point C, Route 3 (ABC) utilizes the existing routes of I-15 and I-10 and Route 4 (ADC) utilizes the proposed route of SR-210 and the existing route of SR-57. Considering relative population or housing risks along the entire route,

with even shorter drive distance and time, the higher population and crash rate still make Route 3 133 percent or 110 percent, respectively, higher than Route 4.

Table 1: Eight Routes Evaluated for SR-210 Transporting HRCQ RAM

Alternate Routes	Route Length (mile)	Length Difference (mile)	Ratio (alternates/minimum)	Estimated Drive Time (minute)	Ratio (alternates/minimum)	Potential Population Exposure (<= 1.4 mile)	Ratio (alternates/minimum)	Crash Rate (crashes per million vehicle miles traveled)	Ratio (alternates/minimum)
Route 1: ABCD	25.8	6.5	1.34	23	1.44	370,258	1.48	0.04	1.83
Route 2: AD	19.3	0.0	1.00	16	1.00	250,038	1.00	0.02	1.00
Route 3: ABC	21.7	0.0	1.00	19	1.00	326,550	1.16	0.04	2.01
Route 4: ADC	23.3	1.6	1.07	20	1.05	282,040	1.00	0.02	1.00
Route 5: BCD	19.8	0.0	1.00	19	1.00	310,143	1.11	0.04	1.84
Route 6: BAD	25.2	5.4	1.27	23	1.21	278,190	1.00	0.02	1.00
Route 7: BC	15.8	0.0	1.00	15	1.00	266,435	1.00	0.05	2.07
Route 8: BADC	29.3	13.5	1.86	26	1.73	310,190	1.16	0.02	1.00

Table 1.1: Eight Routes Evaluated for SR-210 Transporting HRCQ RAM

Alternate Routes	Relative Population Risk (people per million vehicle miles traveled along route)	Ratio (alternates/minimum)	Number of Schools (<= 1.4 mile)	Ratio (alternates/minimum)	Potential Housing Exposure (<= 1.4 mile)	Ratio (alternates/minimum)	Relative Housing Risk (housing per million vehicle miles traveled along route)	Ratio (alternates/minimum)
Route 1: ABCD	15,457	2.71	135	1.45	114,968	1.34	4,800	2.46
Route 2: AD	5,707	1.00	93	1.00	85,650	1.00	1,955	1.00
Route 3: ABC	14,534	2.33	119	1.16	99,034	1.04	4,408	2.10
Route 4: ADC	6,232	1.00	103	1.00	95,042	1.00	2,100	1.00
Route 5: BCD	13,876	2.05	115	1.14	96,494	1.02	4,317	1.87
Route 6: BAD	6,755	1.00	101	1.00	95,029	1.00	2,307	1.00
Route 7: BC	12,970	1.78	96	1.00	80,560	1.00	3,921	1.60
Route 8: BADC	7,301	1.00	110	1.15	104,421	1.30	2,458	1.00

For shipments between Point B and Point D, Route 5 (BCD), taking the existing route of I-10 and SR-57, is compared to Route 6 (BAD), taking the existing route of I-15 and the proposed route of SR-210. Table 1 and Table 1.1 show also a 105 percent or 87 percent higher relative population or housing risk, respectively, along Route 5, than those along Route 6. Due to the higher population densities and crash rates on I-10, even Route 7 (BC), utilizing only the existing route of I-10, still demonstrates a 78 percent or 60 percent higher relative population or housing risk, respectively, along the entire route than Route 8 (BADC), utilizing the existing route of I-15, proposed route of SR-210, and existing route of SR-57, even though Route 8 shows 86 percent or 73 percent more drive distance or time, respectively.

Based on the evaluation, while maintaining the established alternative routes for shipments on these segments of I-10, I-15, and SR-57, the CHP is proposing to add 19.3 miles of SR-210 between I-210 or SR-57, near San Dimas, and I-15, near Fontana, into the designated routes to be specified in Title 13, CCR, Section 1159, in order to provide direct access between I-15 and I-210 for highway commercial vehicles transporting HRCQ RAM, thus enhancing public health and safety in this area.

STUDIES/RELATED FACTS

The evaluation of possible routes follows the recommended methodologies outlined in the Guidelines for Selecting Preferred Highway Routes for Highway Route Controlled Quantity Shipments of Radioactive Materials (DOT/RSPA/HMS/92-02) and in the Highway Routing of Hazardous Materials – Guidelines for Applying Criteria (FHWA-HI-97-003) published by the U.S. DOT FHWA. The data used for this analysis came from the 2010 census survey conducted by the U.S. CB, the 2012 emergency facility sites composed by SCEC at USC, the traffic volume reports compiled by Caltrans, the crash incidents collected in the SWITRS database, and the highway length and transit time derived from GE and GM. The evaluation of relative risks for each alternative route is conducted using a GIS with a 1.4-mile buffer zone along the routes referenced in the 2016 ERG issued by the U.S. DOT PHMSA.

CONSULTATION WITH OFFICIALS

Concurrences were received from CHP field commands, SFM, DPH, Caltrans, LACFD, SBCFD, SCAG, and major HRCQ RAM manufacturers and carriers.

ALTERNATIVES

Other than the alternatives discussed above, no reasonable alternative considered by the CHP, or otherwise identified and brought to the attention of the CHP, would be more effective in fulfilling the purpose for which the action is proposed, or as effective and less burdensome to affected private persons, than the proposed action. The alternative of making no changes to the existing regulations was rejected because it fails to keep information current in the CCR. Failing to provide updated routes to carriers may increase potential risks of detrimental hazards while transporting HRCQ RAM in the state.

LOCAL MANDATE

These regulations do not impose any new mandate on local agencies or school districts.

ECONOMIC IMPACT ANALYSIS

Creation or Elimination of Jobs

The CHP has made an initial determination that this proposed regulatory action will neither create, nor eliminate, jobs within the State of California because the regulation only designates an additional 19.3 miles of HRCQ RAM routes and the transportation of HRCQ RAM by commercial vehicles along the proposed routes presents only a very small portion of total vehicle movement in the state.

Creation of New Business, or Elimination or Expansion of Existing Business

The CHP has not identified any significant adverse impact on the creation of new businesses, or elimination or expansion of existing businesses within the State of California. Businesses involved in the transportation of HRCQ RAM will have more consistent and updated information on designated routes in the state. The proposed regulatory action will not create new businesses, or eliminate or expand any existing business by transporting HRCQ RAM via the updated routes.

Benefits of the Regulation

This proposed regulatory action will continue to provide a nonmonetary benefit to the protection of the health and welfare of California residents, workers, and environment. The changes to the application of the regulation are not substantive and bring the regulation in conformance with existing statute. The proposed changes update and clarify safe and efficient routes designated for carriers transporting HRCQ RAM, and contribute to transportation safety and public health.

BUSINESS IMPACT TO THE STATE

The proposed regulatory action adds only 19.3 miles of designated highway routes for commercial vehicle carriers transporting HRCQ RAM in California. Based on the economic impact analysis, the CHP has made an initial determination that the proposed regulatory action would have no significant statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states.

FISCAL IMPACT TO THE STATE

The CHP has determined these regulation amendments will result in:

- No significant increased costs for persons or businesses
- No significant compliance costs for persons or businesses directly affected
- No discernible adverse impact on the quantity and distribution of goods and services to large and small businesses or the public
- No impact on the level of employment in the state; and
- No impact on the competitiveness of California to retain businesses