

November 26, 2019



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Sacramento, CA 95814

SUBJECT: Transport Refrigeration Unit Emission Inventory and Preliminary Health Analyses

The California Trucking Association (CTA) is the nation's largest trade association representing the trucking industry.

CTA and its members have worked with CARB in the past to implement the Transport Refrigeration Unit (TRU) Air Toxic Control Measure (ATCM) that continues to result in significant PM_{2.5} reduction today.

Thank you for the opportunity to comment on the TRU Emission Inventory and Preliminary Health Analyses.

Proximity and Activity Assumptions Inconsistent with Prior ATCMs

The ATCM has been modified several times since its initial adoption in 2004 and the associated health risks from TRU emissions have been characterized in each of these proceedings. We have included figures from the 2004 ATCM rulemaking, the 2005 Air Quality and Land Use Handbook, the 2011 amended ATCM, and the 2019 Preliminary Health Analyses.

2004

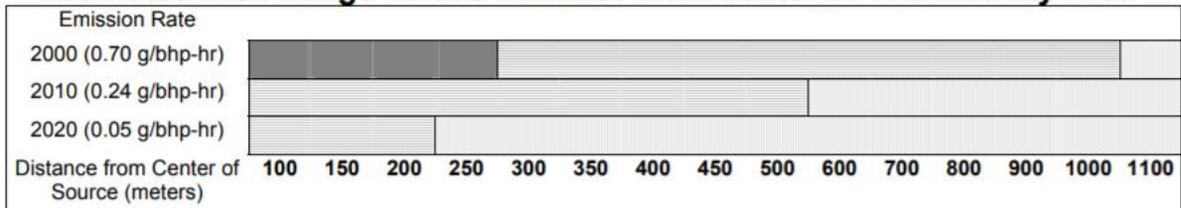
Table 6 Estimated Range of Potential Cancer Health Risks (per million) due to TRUs Operating at a Large Distribution Area Source – 0.02 g/bhp-hr

Total Hours of TRU Engine Operation		Downwind Distance (m) from Center of Area Source											
Per Week	Per Year	100	150	200	250	300	350	400	450	500	600	700	800
100	5,200												
150	7,800												
200	10,400												
250	13,000												
300	15,600												
350	18,200												
400	20,800												
450	23,400												
500	26,000												
600	31,200												
700	36,400												
800	41,600												
900	46,800												
1,000	52,000												
1,100	57,200												
1,200	62,400												
1,300	67,600												
1,400	72,800												
1,500	78,000												

Meteorological Data: West LA (1981)
 Emission Parameters: Engine Size - 35 hp, Engine Load Factor - 60%, Area Source.
 Grey Shading shows Cancer Risks < 10/million
 No Shading shows Cancer Risks = 10/million and < 100/million
 Horizontal Line Shading shows Cancer Risks = 100/million
 Annual emissions assume 52 weeks of operation

2005

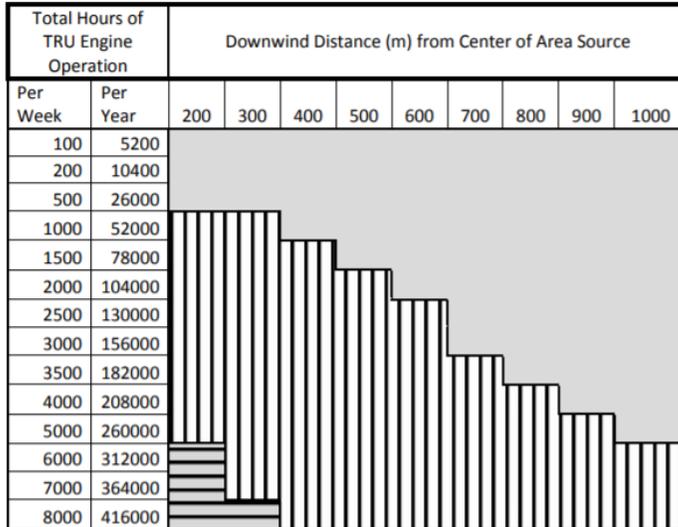
Estimated Risk Range versus Distance from Center of TRU Activity Area*



KEY:
 Potential Cancer Risk > 100 per million
 Potential Cancer Risk ≥ 10 and < 100 per million
 Potential Cancer Risks < 10 per million
 *Assumes 300 hours per week of TRU engine operation at 60% load factor

2011

Table D-3: Estimated Range of Potential Cancer Health Risks (per million) Due to TRUs Operating at a Distribution Area Source – 0.02 g/bhp-hr (2020)



Meteorological Data: West LA (2005 - 2007)
 Emission Parameters: Engine Size - 35 hp, Engine Load Factor - 46 % , Area Source
 Grey Shading shows Cancer Risks < 10/million
 Vertical Shading shows Cancer Risks ≥ 10/million and < 100/million
 Horizontal Line Shading shows Cancer Risks ≥ 100/million

2019

Table II.G.6. Cold Storage Warehouse Individual Resident Cancer Risk – Year 2018 (chances per million)¹

Total Hours of TRU Engine Operation		Downwind Distance (m) from Facility																	
Per Week	Per year	25	50	75	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
8,000	416,000	1780	1540	1310	1140	730	520	400	320	260	220	190	170	150	140	130	120	110	100
5,000	260,000	1110	960	820	710	460	330	250	200	160	140	120	110	95	87	79	74	68	63
3,000	156,000	670	580	490	430	270	200	150	120	98	83	72	64	57	52	48	44	41	38
2,000	104,000	440	380	330	290	180	130	99	79	65	55	48	42	38	35	32	30	27	25
1,000	52,000	220	190	160	140	91	65	49	39	33	28	24	21	19	17	16	15	14	13
500	26,000	110	96	82	71	45	32	25	20	16	14	12	11	10	9	8	7	7	6

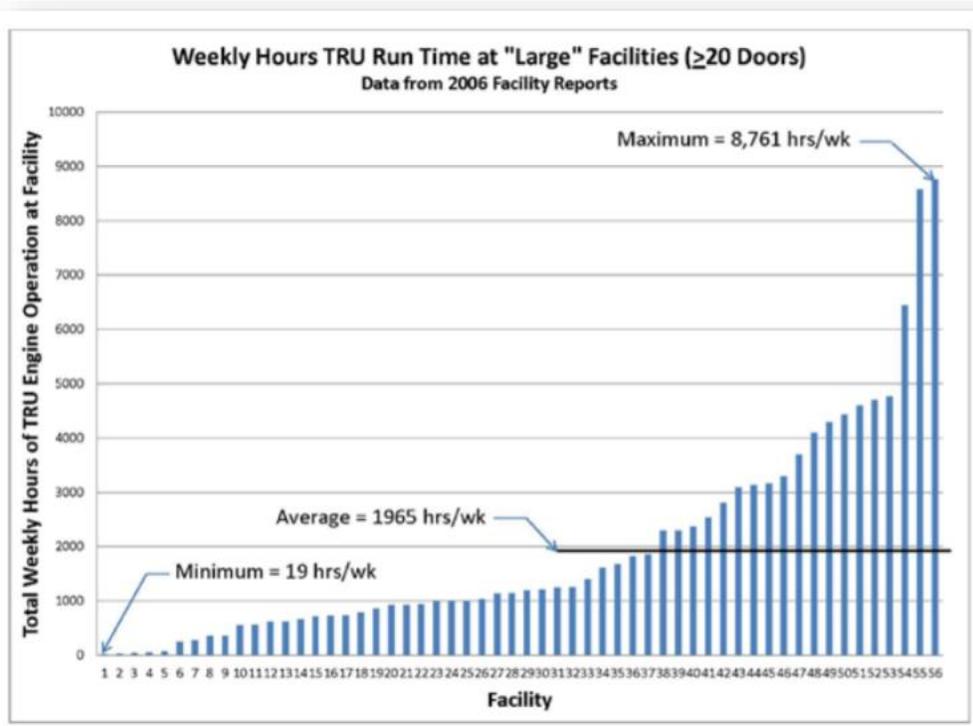
1. Individual resident cancer risk estimates are based on a 30-year exposure duration using the Risk Management Policy (RMP) method (95th/80th percentile daily breathing rates (DBR)). FAH equals 1 for age bins <16 years and 0.73 for age bin 16-70 years. All numbers are rounded.

As you can see, CARB has generally assessed risk within 100 meters of the center of the area source. For the first time, CARB is now assessing risk within 25, 50, and 75 meters. Of note, is that CARB’s own guidance recommends avoiding “siting new

sensitive land uses within 1,000 feet (304.8 meters) of a distribution center...where TRU unit operations exceed 300 hours per week.”¹

Additionally, CARB is now assessing weekly TRU engine operation up to 32,000 hours per week in its four cold storage warehouse cluster scenario. Staff indicated at the October 31st workshop that its understanding of cold storage warehouse activity is still informed by the 2006 facility operator report data. Key findings from the facility reports:

- Only 2 of the 56 reports indicated weekly TRU activity above 8,000 hrs.
- Only 3 of the 56 reports indicated weekly TRU activity above 5,000 hrs.
- The average weekly TRU activity was 2,000 hrs.



Therefore, we do not believe it is reasonable to assume that four cold storage warehouses at 8,000 weekly hours might operate as a cluster when CARB is only aware of two such facilities statewide and that the average weekly TRU facility is 2,000 hours.

¹ <https://ww3.arb.ca.gov/ch/handbook.pdf>

We recommend that CARB consider using similar proximity and activity assumptions that have informed past health risk analyses on TRU emissions so that the Board can better compare the effectiveness of the ATCM over time.

Concept Contains Different Control Measures Whose Benefit Should Be Assessed Individually

Staff’s proposed concept contains three separate control measures.

Starting in 2025:

1. All truck TRU fleets must turnover at least 15 percent each year (for 7 years) to full zero-emission technology. All truck TRUs must be fully zero-emission by 2031.
2. All trailer TRUs, domestic shipping container TRUs, and TRU generator sets must use zero-emission operation if parked or stationary for more than 15 minutes at an applicable facility and be equipped with an electronic telematics system.
3. All diesel engines in trailer TRUs, domestic shipping container TRUs, railcar TRUs, and TRU generator sets that operate in California, regardless of horsepower, must meet the more stringent U.S. EPA Tier 4 final emission standard for 25-50 hp engines.

All three measures have distinct costs, emission reductions and correlating health risk reductions and should be analyzed within the emissions inventory and health risk analyses individually.

Our initial analysis of the relative impact of each measure if adopted as the sole control measure on the draft emissions inventory is below.

	Baseline/ Existing ATCM	Regulation Concepts TOTAL	Truck TRUs Only	Reduction from Baseline	Plug- in ONLY	Reduction from Baseline	Tier 4f ONLY	Reduction from Baseline
2015	1.02	1.02	1.02	0%	1.02	0%	1.02	0%
2024	0.61	0.61	0.61	0%	0.61	0%	0.61	0%
2025	0.58	0.18	0.57	1%	0.37	36%	0.27	54%
2031	0.52	0.06	0.47	11%	0.34	36%	0.15	71%
2035	0.55	0.06	0.49	11%	0.35	36%	0.15	72%
2040	0.59	0.06	0.53	11%	0.38	36%	0.16	72%

- PM2.5 emissions, tons per day

Note that the impact of each regulatory item being considered could be smaller when considered alongside the other regulatory items. For example, while the plug-in requirement is estimated to result in a 36% reduction from the baseline if introduced by itself, the same item is estimated to result in only an incremental reduction of 7% from the baseline when implemented alongside the Tier 4f requirement.

The above comments are based on our initial review of the Transport Refrigeration Unit (TRU) Emission Inventory and Preliminary Health Analyses. Thank you for the opportunity to comment and we look forward to having further dialogue with staff as it refines its analyses.

Thank You,

A handwritten signature in black ink, appearing to be 'CS', with several loops and a long horizontal stroke extending to the right.

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