PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Consumer Protection and Enforcement Division **RESOLUTION TL-19145**
Transportation Licensing and Analysis Branch **June 29, 2023**

R E S O L U T I O N

RESOLUTION APPROVING AUTHORIZATION FOR CRUISE LLC'S EXPANDED SERVICE IN AUTONOMOUS VEHICLE PASSENGER SERVICE PHASE I DRIVERLESS DEPLOYMENT PROGRAM

SUMMARY

This Resolution approves Cruise LLC's (Cruise) request to expand its Operational Design Domain under its existing Phase I Driverless Autonomous Vehicle Passenger Service Deployment authorization. Cruise has satisfied the requirements of Decision 20-11-046 (as modified by Decision 21-05-017) and Resolution TL-19137 and has submitted a complete Passenger Safety Plan that reasonably addresses its expanded service. With this authorization, Cruise may offer passenger service in its autonomous vehicles without a safety driver present throughout the city of San Francisco, at all hours of day or night, among other conditions specified in its Operational Design Domain. Cruise is authorized to collect fares for these rides.

The Resolution also acknowledges continued and emerging challenges relating to passenger and public safety and data reporting. The Commission will engage with stakeholders on these issues through its rulemaking process. The Commission will continue to evolve regulatory policy to ensure passenger and public safety and support achievement of the AV program's safety, equity, accessibility, and environmental goals.

BACKGROUND

On December 16, 2022, Cruise LLC (Cruise) submitted Cruise-0002, a Tier 2 advice letter requesting expansion of its Driverless Deployment Permit Operational Design Domain (ODD). Cruise currently holds a transportation charter-party (TCP) carrier permit from the Commission (TCP 39080-P) and has been granted authorization for Phase I Driverless Autonomous Vehicle Deployment (Driverless Deployment) to conduct fared driverless passenger service in a limited portion of San Francisco between 10 p.m. and 6 a.m. as

approved in Commission Resolution TL-19137.[1] In its Tier 2 advice letter, Cruise requests expansion of its driverless passenger service ODD to include all of San Francisco, at any time of day or night, and at speeds up to 35 miles per hour. Cruise does not currently offer shared rides (i.e., "fare-splitting" between different parties) and does not propose to do so.

Decision (D.)20-11-046 (as modified by D.21-05-017) (Deployment Decision) created the Commission's Phase I Autonomous Vehicle Passenger Service Deployment programs.[2] In Deployment, carriers are authorized to collect fares for autonomous vehicle (AV) passenger service either with safety driver present in the vehicle for Drivered Deployment service or without a safety driver for Driverless Deployment service. Carriers may also offer shared rides. This expands on the Commission's AV Pilot programs, established by D.18-05-043, in which carriers may neither charge fares nor offer shared rides among other restrictions.[3] Currently, Cruise is authorized to participate in 3 CPUC AV programs: Driverless Deployment, Drivered Deployment, and Driverless Pilot. With these authorizations, Cruise may currently offer fared passenger service in limited areas of San Francisco from 10 p.m. to 6 a.m. without a safety driver present, fared passenger service throughout San Francisco at any time of day with a safety driver present, and non-fared passenger service throughout San Francisco at any time of day without a safety driver present.

In the Deployment Decision, the Commission established four goals for its AV programs: 1) Protect passenger safety; 2) Expand the benefits of AV technologies to all Californians, including people with disabilities; 3) Improve transportation options for all, particularly for disadvantaged communities and low-income communities; and 4) Reduce greenhouse gas emissions, criteria air pollutants, and toxic air contaminants, particularly in disadvantaged communities.[4] The Commission will collect data throughout the Deployment program to monitor permit holders' progress toward these goals.

The Deployment Decision sets forth the requirements for participation in the Phase I Driverless Deployment program. The AV carrier must submit an application for the program that demonstrates its compliance with Commission General Order (GO) 157-E,[5]

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[1] Resolution TL-19137 is available at https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M483/K544/483544466.PDF.
[2] Decision 20-11-046 is available at https://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=352185092.
Decision 21-05-017 is available at https://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=401288191.
[3] Decision 18-05-043 is available at https://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=215279920.
[4] Decision (D.)20-11-046 (as modified by D.21-05-017) (Deployment Decision) at 2.
[5] See http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M322/K150/322150628.pdf.

which governs the Commission's Transportation Charter Party (TCP) carriers, and includes all information required by the Deployment Decision. Notable requirements include holding an active AV Deployment permit from the DMV,[6] which authorizes the deployment of AVs on public roads in California, and submitting a Passenger Safety Plan (PSP) to the Commission.

In its PSP, the carrier must describe its policies and procedures to minimize risk for all passengers in its driverless vehicles. This includes, at a minimum, how the carrier will: minimize safety risks to passengers traveling in a ride operated without a driver in the vehicle; minimize safety risks to passengers traveling in a shared, driverless ride, including prevention and response to assaults and harassments (only for carriers applying to offer shared rides); respond to unsafe scenarios outside and within the vehicle, such as hostile individuals; educate and orient passengers about the technology, experience, and safety procedures; ensure customers can safely identify, enter, and exit the AV they requested; enable passengers to contact the AV service provider during the ride and ensure the passengers receive a timely and complete response; collect, respond to, and retain any passenger comments and complaints; and ensure the safety measures described above are accessible to and apply to all passengers, including those with limited mobility, vision impairments, or other disabilities.

The Deployment Decision established an advice letter process, modeled on the General Rules set forth in GO 96-B, for Driverless Deployment applications and modifications.[7] Per the Deployment Decision, a Driverless Deployment program participant that wishes to change its operations in a way that would "materially affect the approaches" in its PSP must submit a revised PSP in the form of a Tier 2 advice letter.[8] TL-19137 further clarified that any changes to the ODD would be material and require the submission of a revised PSP, as Cruise has submitted in this advice letter Cruise-0002.[9] While Tier 2 advice letters may be disposed of by the industry division under some circumstances, Commission staff have prepared this resolution for the reasons explained below.

NOTICE

Ordering Paragraph 18 of the Deployment Decision requires Driverless Deployment advice letters to "be in conformance with all service requirements in GO 96-B using all of the Transportation Network Company rulemakings service lists…" Cruise properly served

[6] 13 Code of California Regulations (CCR) § 228.
[7] Deployment Decision, Ordering Paragraph 18 at 139-140.
[8] Deployment Decision, Ordering Paragraph 20 at 140.
[9] Resolution TL-19137 at 13.

advice letter Cruise-0002 to the Rulemaking (R.)12-12-011, R.19-02-012, and R.21-11-014 service lists. Notice was also given by publication in the Commission's Daily Calendar.

PROTESTS AND RESPONSES

GO 96-B provides the framework for the Commission's advice letter process. Per General Rule 7.4.1, any person (including individuals, groups, or organizations) may protest or respond to an advice letter within 20 days of the submittal of the advice letter. Protests and responses are submitted to CPED and to the applicant.

The 20-day protest and response period ended on January 5, 2023. General Rule 7.4.4 provides CPED discretion in accepting late-submitted protests or responses. In light of end-of-year holidays, CPED extended the protest and response period by one week to January 12. On December 22, 2022, CPED received a joint request from the San Francisco Municipal Transportation Agency and the San Francisco County Transportation Authority for additional time to prepare a protest or response. In response to this request, CPED further extended the protest and response period to February 1, 2023.

Cruise's advice letter received 1 timely protest, 2 timely responses providing comments and expressing concerns, and 39 timely responses in support.[10]

Protest

The San Francisco Municipal Transportation Agency (SFMTA), San Francisco County Transportation Authority (SFCTA), and the Mayor's Office of Disability (collectively, San Francisco) protest Cruise's advice letter on the grounds that the expansion sought is "unreasonable in light of the Cruise AV performance record" and the lack of incrementalism, data transparency, and adequate reporting and monitoring. San Francisco further protests on the grounds that the relief sought in Cruise's advice letter is inappropriate for the advice letter process because it requires approval based on issues not contemplated in the Deployment Decision, arguing that the Commission should instead move to workshops and further rulemaking to address changes in industry conditions prior to approving any expansion.

San Francisco identifies several challenging circumstances that it argues make Cruise's expansion request unreasonable. San Francisco advocates for an incremental approach to expansion of Driverless Deployment, arguing that driverless AV performance must improve before expansion of commercial operations. In particular, San Francisco highlights

[10] Protest and responses are available at https://www.cpuc.ca.gov/regulatory-services/licensing/transportation-licensing-and-analysis-branch/autonomous-vehicle-programs/phase-i-driverless-autonomous-vehicle-deployment-program-advice-letter-status.

incidents it has documented where AVs have blocked traffic, including transit vehicles, or interfered with emergency responders. San Francisco also takes issue with the lack of transparency of AV operational data, which have been submitted to the Commission with confidentiality claims and thus been made available to the public only in redacted form. Further, San Francisco highlights the lack of reporting on unplanned stops and asserts that the Commission should seek and require public disclosure of the frequency and impact of such events.

San Francisco's protest highlights "new information about hazards and network impacts caused by planned and unplanned AV stops obstructing travel lanes." Ninety-two unique instances of unplanned AV stops were reported to San Francisco through 911 calls between May 29 and December 31, 2022, the "large majority" of which involved Cruise AVs. San Francisco describes the hazards created by these incidents, which may cause other vehicles to make unsafe maneuvers and may result in collisions. San Francisco's concerns are heightened due to the concentration of these unplanned stops on busy downtown streets, streets with transit service, streets on the bike network, intersections, and streets on San Francisco's High Injury Network.

San Francisco emphasizes unplanned stops' impacts on transit service, which it views as essential to its economic vitality, climate action and air quality goals, and equity goals. The protest describes several specific incidents where Cruise AVs blocked SFMTA buses or light rail vehicles, impacting the flow of traffic. San Francisco expresses concerns about expansion of commercial service into peak hours of the day as stoppages and delays are likely to impact significantly more passengers both on the impacted transit line(s) and systemwide.

Further, San Francisco describes unplanned stops and unsafe maneuvers by Cruise AVs that have impacted emergency responders. These include incidents where a Cruise AV obstructed a fire department vehicle traveling to an emergency, ran over a fire hose, or improperly entered an emergency scene.

Given the issues described in its protest, San Francisco argues that the Commission should take several actions prior to approving the requested Driverless Deployment expansion. San Francisco recommends that the Commission create new driverless readiness metrics and then require that this driverless readiness data be available for at least 30 days of public review prior to any new or expanded Driverless Deployment service. Further, San Francisco states the Commission should not approve Cruise's expanded ODD as requested and instead should disallow AV deployment downtown and during peak hours and limit expansion of fleet size to specified increments. Lastly, San Francisco states the Commission

should direct CPED to convene a workshop to discuss industry developments, consider further data collection and disclosure, and address disability access issues.

Commission staff have determined that San Francisco's arguments are not within the grounds for a proper protest, so will be treated as a response. Per GO 96-B Rule 7.4.2(6), a protest may not be made where it would require relitigating a prior order of the Commission. Further, a protest may not rely purely on policy objections.

Responses

Cruise's advice letter received 2 responses expressing concern.

The Los Angeles Department of Transportation (LADOT) expresses concerns that unimpeded expansion of driverless AVs will harm cities and is not aligned with the Commission's goals for the AV program. LADOT asserts that Cruise vehicles "regularly engage in illegal behavior by picking up and dropping off passengers in travel lanes;" LADOT "unequivocally disagrees with" AVs double parking and thus blocking a lane of traffic as doing so poses a safety risk for other vehicles, vulnerable road users, and passengers, particularly mobility-impaired customers who need to access to the curb. LADOT takes issue with AV data, arguing that the Commission's AV data reporting is not transparent and is unusable for cities. LADOT further argues that all AV providers must participate in a platform like the Mobility Data Specification (MDS) to facilitate data-sharing with localities and thereby facilitate planning, operation, and curb management on city streets. Finally, LADOT argues that expansion should be allowed only after the establishment of uniform metrics and performance standards for AVs and demonstration that Cruise has met those standards.

The California Transit Association (CTA) urges the Commission to limit the scale at which Cruise may operate, citing "documented incidents where driverless AVs have blocked light rail vehicles and buses, [and] encroached upon transit only lanes, impacting hundreds of transit riders in San Francisco." CTA advocates for incremental approvals in terms of geographic area, hours of operation, and fleet size, and that the Commission should require new data reporting to document travel lane obstructions.

Cruise's advice letter received supportive responses from 39 stakeholders spanning local groups, elected officials, accessibility advocates including individuals with accessibility needs, technology industry groups, business and economic development organizations, transportation advocates, academics, and journalists. Supportive responses were submitted by the following organizations and individuals, listed in alphabetical order:

- American Council of the Blind

- Andrew Johnson
- Autonomous Vehicles Industry Association
- Bill Bogdan
- Brad Duerstock (Associate Professor of Engineering Practice, Purdue University)
- Brandon Winfield
- California Assemblymember Evan Low
- California Chamber of Commerce
- Chamber of Progress
- Chinese Chamber of Commerce of San Francisco
- City of El Cerrito Councilmember Gabe Quinto
- Consumer Technology Association
- Corporation for Automated Road Transportation Safety
- Fillmore Merchant Association
- Golden Gate Restaurant Association
- Humanmade
- India Basin Neighborhood Association
- Ken Pyle
- Matt Ater (Vispero)
- Mike Williston
- National Federation of the Blind
- NorCal Spinal Cord Injury Foundation
- Owen Kent
- Phillip Wilcox
- Potrero Dogpatch Merchants Association
- Richmond Neighborhood Center
- Rose Pak Community Fund
- San Francisco Chamber of Commerce
- San Francisco Council of District Merchants Associations
- San Jose Chamber of Commerce
- Self-Help for the Elderly
- sf.citi
- Silicon Valley Leadership Group
- Sunset Mercantile
- TechNet
- Telegraph Hill Neighborhood Center
- The Harkin Institute
- Todd Roberts (ATDev)
- United Spinal Association

These support letters highlighted a broad range of potential benefits of AVs in improving mobility in local communities and for underserved populations including seniors and people with disabilities, enhancing traffic safety, improving environmental quality, contributing to economic development, and other benefits.

Cruise's Reply

Cruise replied to the protest and responses on February 1, 2023. In its reply, Cruise asserts that it has satisfied the requirements of the Deployment Decision and TL-19137 through its submission of an updated PSP and that the protest and responses of San Francisco, LADOT, and CTA do not provide a basis to deny Cruise's request. Cruise argues that the protest and responses do not address the PSP changes and are instead based on improper policy objections, representing attempts to relitigate issues that have already been decided by the Commission. In particular, efforts to impose new data reporting requirements and convene a workshop before approval are outside the scope of the advice letter process and constitute improper attempts to relitigate prior Commission orders.

Cruise also highlights jurisdictional issues. Cruise argues that San Francisco's assertions around the technical performance of the Cruise AV are within the purview of the California Department of Motor Vehicles (DMV) which has the authority to ensure safe operations of AVs on public roads. Cruise further argues, in response to LADOT's discussion of pick-up and drop-off issues and enforcement, that San Francisco and not the Commission has the authority to enforce traffic violations.

In response to parties' arguments around incrementalism and scale limitations, Cruise notes it has taken an incremental approach in the form of its limited initial Driverless Deployment service. Further, Cruise notes that incrementalism arguments related to impacts on the transit system and traffic issues are outside the jurisdiction of the Commission; local officials have the authority to cite AVs if they observe any non-moving violations.

The discussion below includes our analysis of the protest, responses, and reply.

DISCUSSION

The Commission has a broad mandate to promote safety in its regulation of passenger carriers including AVs. The Passenger Charter-party Carriers Act[11] directs the Commission to regulate certain types of passenger transportation service in the state. Per the Act, the "use of the public highways for the transportation of passengers for compensation is a business affected with a public interest. It is the purpose of this chapter […] to promote

[11] Public Utilities Code §§ 5351-5450.

carrier and public safety through its safety enforcement regulations."[12] In the AV program, the Commission has underscored this safety mandate by establishing "Protect passenger safety" as one of the four goals of the Phase I AV Deployment Program.[13] Our evaluation of Cruise's request to expand its service considers Cruise's compliance with the specific requirements of the Deployment Decision.

Standard of Review

CPED has assessed the completeness of Cruise's request relative to the requirements of the Deployment Decision and TL-19137. CPED has evaluated the content of Cruise's PSP for its completeness relative to the minimum requirements set forth in the Deployment Decision as well as the reasonableness of the strategies described in protecting passenger safety in the context of the proposed service.

While Cruise's advice letter was submitted as Tier 2 as directed by the Deployment Decision and TL-19137, CPED has determined that the disposition of the advice letter raises policy concerns and substantive issues that are best addressed through a Commission resolution.

Completeness of Cruise's Request

CPED first reviewed Cruise's request for completeness relative to the requirements of the Deployment Decision and TL-19137. Cruise is already authorized to participate in the Driverless Deployment program. Per Ordering Paragraph 20 of the Deployment Decision, an entity authorized to participate in the program that "intends to change its operations in a way that would materially affect the approaches outlined in its Passenger Safety Plan" must provide an updated PSP to CPED via a Tier 2 advice letter.[14] TL-19137 further clarified that expansions to "the hours, geography, roadway types, speed range, or weather conditions" of Driverless Deployment operations are material and require submission of a new PSP via Tier 2 advice letter.[15] Cruise has satisfied these procedural requirements.

Evaluating the Passenger Safety Plan

The Passenger Safety Plan plays a critical role in our evaluation of the safety implications of Cruise's proposed service. As described in the Deployment Decision, "[r]equiring applicants to provide a detailed Passenger Safety Plan tailored to their technology and business model, and making that plan available for public review and comment, will enable

[12] Public Utilities Code § 5352(a).
[13] Deployment Decision at 34.
[14] Deployment Decision, Ordering Paragraph 20 at 140.
[15] TL-19137 at 23.

parties to lend their expertise, ensure transparency in decision-making, and establish a public document against which the applicant's actions will be compared."[16] Ordering Paragraph 8 of the Deployment Decision sets forth the minimum requirements for the PSP. AV carriers must describe how they will:

- Minimize safety risks to passengers traveling in a ride operated without a driver in the vehicle;
- Minimize safety risks to passengers traveling in a shared, driverless ride, including prevention and response to assaults and harassments;
- Respond to unsafe scenarios outside and within the vehicle, such as hostile individuals;
- Educate and orient passengers about the technology, experience, and safety procedures;
- Ensure customers can safely identify, enter, and exit the AV they requested;
- Enable passengers to contact the AV service provider during the ride and to ensure the passengers receive a timely and complete response;
- Collect, respond to, and retain any passenger comments and complaints; and
- Ensure the safety measures described above are accessible to and apply to all passengers, including those with limited mobility, vision impairments, or other disabilities.

Cruise's PSP is complete relative to these minimum requirements, as established in TL-19137.[17] Cruise has updated its PSP to reflect its proposed service expansion to all of San Francisco, 24 hours a day. Cruise's updated PSP discusses enhancements and revisions to safety and accessibility features and procedures, including mobile app enhancements. The updated PSP provides additional information on pickup and drop-off procedures and safe operations around transit and rail.

The technology, policies, and procedures Cruise describes are generally reasonable for its expanded service, and Cruise has demonstrated its commitment to passenger safety through its PSP. Cruise's PSP describes clear protocols and procedures for supporting passengers in routine rides and in case of any incidents, including structuring and staffing teams responsive to different types of situations that may arise.[18] Cruise's PSP also describes model new safety features such as the ability for passengers to share trip details with family or friends, including live information about the trip's progress and identifying

[16] Deployment Decision at 35-36.
[17] TL-19137, Finding 10 at 21.
[18] Cruise Advice Letter 0002 – Attachment 1: Passenger Safety Plan at 31.

details about the AV being used for the trip.[19] We are encouraged by the safety record in passenger service to date. Cruise has reported just 5 collisions under its Driverless Deployment permit since receiving its permit in June 2022, none of which resulted in injuries. However, as we have gained more experience with AVs, particularly driverless AVs, we see the need for continued development in our approach to AV regulation and policy.

We have discussed previously in TL-19137 the potential impacts of scale on passenger safety, noting the need to balance the potential benefits of AVs while acknowledging and safeguarding against potential risks. We continue to acknowledge the many potential benefits of widespread AV deployment – enhancements to passenger and roadway safety, accessibility, economic development, and reduction in environmental impacts, among other benefits, as discussed by the many support letters submitted for this advice letter. However, we remain concerned about potential risks, known and unknown, to passenger and public safety as driverless AVs scale up. The Commission will continue to work to protect passenger and public safety in the complex environments in which these AVs operate.

Stakeholders have raised several issues relevant to the broader safety impacts of scaling up AV deployment that merit further discussion.

Scale and Incrementalism

San Francisco protests Cruise's advice letter in part on the grounds that "almost unlimited" commercial operations are "unreasonable," arguing that "Cruise AV performance must improve before the Commission authorizes expansion of Cruise commercial operations."[20] San Francisco recommends the Commission take an incremental approach to authorizing Driverless Deployment service, including limitations on service area, hours of operation, and fleet size. LADOT and CTA express similar concerns regarding the scale of deployment.

While San Francisco's arguments are not within the grounds for a proper protest as protests may not be made where they would require relitigating a prior order of the Commission, nor may they be based purely on policy objections, we discuss the arguments made by San Francisco, LADOT, and CTA below.

The Deployment Decision does not prescribe or contemplate a particular progression for the testing and deployment of AVs in terms of participation in Commission programs,

[19] Cruise Advice Letter 0002 – Attachment 1: Passenger Safety Plan at 25.
[20] Protest of the San Francisco Municipal Transportation Agency, the San Francisco County Transportation Authority, and the Mayor's Office on Disability of Cruise LLC Tier 2 Advice Letter (San Francisco Protest) at 3.

number of vehicles, character of operations, or other factors. The Deployment Decision requires applicants to submit an ODD approved by the DMV[21] which has authority over the technical ability of the vehicle to operate safely on public roads in California.[22] Therefore, the Commission will neither modify the DMV-approved ODD submitted by Cruise, which includes all of San Francisco at all times of day, nor set limits on fleet size. We encourage continued collaboration between Cruise and stakeholders—including local authorities and transit agencies—to promote thoughtful scaling of driverless AV passenger service and minimize any negative impacts.

Operational Safety

Driverless AVs operate in a complex environment that includes the AV, the AV's passengers, and other road users such as pedestrians, bicyclists, and motorized vehicles. Beyond the immediate operating area on the street, AVs are part of San Francisco's interconnected transportation network that spans public and private transportation, various modes, and a variety of infrastructure and features of the built environment. As we consider the complexity of the immediate and broader operating environment, we recognize that the safety of AV passengers and the safety of the broader public are both interdependent and mutually reinforcing – public safety is passenger safety and vice versa, and we cannot have one without the other.

The operational issues raised by San Francisco are concerning to the Commission given the wide range of potential impacts to passengers and the public. Unplanned stops in unsafe locations create hazards for passengers and other road users, block the flow of traffic, and interfere with public transit[23] until the vehicle(s) can be remotely moved or manually retrieved. These types of incidents are particularly concerning if they occur in proximity to light rail lines,[24] especially given San Francisco's 400+ passive at-grade light rail crossings. These passive crossings require AVs to properly recognize rail crossings, understand passive control devices such as stop or yield signs, and appropriately predict and react to the movements of a train.

Further, improper interactions with first responders, including the incidents described by San Francisco where driverless AVs have run over fire hoses or otherwise interfered with active emergency scenes,[25] are hazardous for first responders as well as those experiencing or in proximity to the emergency, and they bring the AV and its passengers unnecessarily

[21] Deployment Decision, Ordering Paragraphs 7(b) at 129, 7(f)(iv) at 130.
[22] Deployment Decision at 30.
[23] San Francisco Protest at 7-14.
[24] San Francisco Protest at 13-14.
[25] San Francisco Protest at 15.

close to potentially dangerous situations. We also express our continued concerns about the safety of AV passenger pickup and drop-off operations as discussed previously in TL-19137.[26] Pickup and drop-off more than 18 inches from the curb creates hazards for passengers and surrounding road users, blocks the flow of traffic, and creates accessibility challenges for passengers who may need or want direct access to the curb.

Available data show Cruise has maintained a good safety record. To date, none of the reported incidents have resulted in bodily harm to passengers or the public. However, we acknowledge that minor incidents and near misses may have other impacts on passengers and the public and may be important leading indicators for evaluating AV operations and taking action before serious incidents occur.

Cruise's PSP meets the requirements of the Deployment Decision and TL-19137. Its PSP describes procedures for passenger pickup and drop-off[27] and for responding to unplanned stops.[28] As part of its original Driverless Deployment permit application, Cruise submitted its DMV-required Law Enforcement Interaction Plan that provides information on interacting with first responders.[29] The Deployment Decision has not established specific criteria for operational performance, nor does it condition permit approval upon meeting particular thresholds for past performance.[30]

We share stakeholders' concerns that the current AV Deployment reporting requirements may not give us sufficient information to evaluate potential passenger safety issues as they emerge or change. The AV industry has evolved and expanded significantly since the Deployment Decision was approved in late 2020; the Decision itself acknowledges that changes may be needed as the AV industry matures.[31] CPED will continue to develop strategies to address data challenges, engaging with stakeholders on these issues through the Commission's rulemaking process.

The Commission will continue to monitor AV operations and engage with AV carriers and other stakeholders including the DMV. Per the Deployment Decision, suspension or revocation of a carrier's DMV AV permit causes automatic suspension of its participation in

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[26] TL-19137 at 11-12.
[27] Cruise LLC Advice Letter 0002, Attachment 1 – Passenger Safety Plan (Cruise PSP) at 18-22.
[28] Cruise PSP at 22-23.
[29] Cruise LLC Advice Letter 0001, Attachment 1 – Passenger Safety Plan, Exhibit C – Driverless Deployment Program Guidance for First Responders.
[30] Deployment Decision at 26: "The Commission, however, declines to prescribe targets, and instead, establishes reporting requirements…"
[31] Deployment Decision, 4.5.2 at 26: "The Commission prefers to […] monitor the maturity of the industry, periodically revise the [AV Program] goals if needed, and revisit the establishment of targets when the industry is more mature."

the AV Deployment program.[32] DMV may suspend or revoke a carrier's permit if it determines based on the performance of its vehicles that the carrier's vehicles are "not safe for the public's operation."[33] The Commission has the authority to initiate investigatory and/or enforcement actions against its permittees, and may modify, suspend, or revoke AV program authorizations it has granted.

Data Confidentiality

Parties expressed concerns around the transparency of the AV Deployment data, asserting that confidentiality claims have obscured the data and thus rendered the public (including municipalities such as San Francisco and Los Angeles) unable to evaluate AV operations and performance in a meaningful and timely manner. San Francisco further recommends that any new data submittals be presumed public and not be subject to requests for confidential treatment.

The Deployment Decision establishes that any claimed confidentiality of quarterly reports will be governed by GO 66-D which sets the Commission's protocols and procedures for confidential information.[34] Cruise has followed these procedures in claiming confidentiality of its quarterly AV Deployment reports. The Commission will take up confidentiality claims through the rulemaking process or via separate resolution(s).

Disposition of Cruise's Advice Letter

In analyzing Cruise's application, we find that its revised PSP is complete and reasonably protects passenger safety. Accordingly, the Commission approves Cruise's request for expanded operations. Driverless Deployment operations are approved in all of San Francisco, 24 hours a day, per Cruise's DMV-approved ODD. We place no additional limits in passenger service on operating hours, geography, or fleet size, but we encourage Cruise to be thoughtful in how it chooses to operate and proactive in its engagement with local stakeholders. The Commission will continue to monitor and evaluate Cruise's operations and has the authority to modify any permit it issues. [35]

The regulation of emerging technologies is necessarily dynamic and iterative; continuing and emerging safety and data issues have made it clear that the Commission's regulatory

[32] Deployment Decision, Ordering Paragraph 13 at 138.
[33] 13 CCR § 228.20(b)(6).
[34] Deployment Decision, Ordering Paragraph 7(m)(v) at 135.
[35] Public Utilities Code § 5381: "To the extent that such is not inconsistent with the provisions of this chapter, the commission may supervise and regulate every charter-party carrier of passengers in the State and may do all things, whether specifically designated in this part, or in addition thereto, which are necessary and convenient in the exercise of such power and jurisdiction."

oversight must continue to evolve in tandem with the development of the AV industry. The Commission will therefore engage with stakeholders through the rulemaking process to continue developing regulatory policy, including enhancements to data reporting, that protects passenger and public safety and supports the achievement of the AV program's safety, equity, accessibility, and environmental goals.

COMMENTS

Public Utilities Code § 311(g)(1) provides that this resolution must be served on all parties and be subject to at least 30 days public review. Any comments are due within 20 days of the date of its mailing and publication on the Commission's website and in accordance with any instructions accompanying the notice. Public Utilities Code § 311(g)(2) provides that this 30-day review period and 20-day comment period may be reduced or waived upon the stipulation of all parties in the proceeding.

In compliance with Public Utilities Code § 311(g), a notice was emailed on **May 11, 2023,** informing all parties on the R.12-12-011, R.19-02-012, and R.21-11-014 Service Lists of the availability of the Resolution on the Commission's website at http://www.cpuc.ca.gov/documents/. The 30-day review and 20-day comment period for the draft of this resolution were neither waived nor reduced. Accordingly, comments on this draft resolution may be submitted no later than 20 days from the mailing date (May 31, 2023). This resolution was placed on the Commission's agenda on June 19, 2023 for consideration at the June 29, 2023 voting meeting. If adopted by the Commission, the final resolution will be posted and available on the Commission's website.

CPED received 30 timely comments: 27 in support of Cruise's request, 1 expressing conditional support, and 2 expressing concerns and/or in opposition to approval of Cruise's request.

Comments in support were received from American Council of the Blind, ATDev, Autonomous Vehicle Industry Association, Bay Area Council, Dr. Brad Duerstock (Purdue University), Chamber of Progress, Cruise, Curren Price (President Pro Tempore, Los Angeles City Council), Golden Gate Restaurant Association, Harkin Institute, Humanmade, International Brotherhood of Electrical Workers Local 6, John Erickson (Mayor Pro Tempore, City of West Hollywood), Ken Pyle, Los Angeles County Business Federation, Los Angeles County Democratic Party, Owen Kent, Richmond Neighborhood Center, San Francisco LGBT Center, San Francisco New Deal, Self-Help for the Elderly, Silicon Valley Leadership Group, TechNet, Telegraph Hill Neighborhood Center, The Arc San Francisco, Wheel the World, and YMCA of Los Angeles. These comments generally highlighted the safety, environmental, accessibility, and economic benefits of AVs.

HAAS Alert expressed support for expanded Driverless Deployment operations if "Digital Alerting," which alerts vehicles of real-time road hazards, is incorporated. The Deployment Decision does not require any specific technology for AV passenger service and acknowledges the California DMV as the agency with primary authority over vehicle safety. Therefore, no additional technical requirements will be imposed on Cruise.

LADOT and San Francisco submitted comments expressing concerns over approval of Cruise's request.

LADOT expresses its concern that "unimpeded service expansion without local input or management will not satisfy the CPED goals and may cause harm to the Cities where these services will be provided." LADOT argues that new mobility services should be required to engage with the cities in which they operate, and that city administrators should have oversight over AV operations. LADOT recommends the Commission "declare through its rulemaking that local jurisdictions have permitting authority over Autonomous Vehicles to manage the operational issues that the CPUC does not consider," including determining scale, number, and location of AV operations and establishing uniform metrics and performance standards for AVs. Further, LADOT asks the Commission to provide "guidance and authority" to local law enforcement on how to engage with AVs operating in local jurisdictions. Lastly, LADOT argues that AVs should be required to be integrated into the Mobility Data Standard (MDS) for real-time data sharing and that cities should have the authority to require this.

The Commission has already considered the issue of local authority over AVs and declined to adopt a "sandbox" approach to AV passenger service.[36] The Public Utilities Code gives the Commission the authority to regulate passenger carriers,[37] including AV passenger service;[38] the Commission will not, through its rulemaking or otherwise, delegate this authority. Cities, including Los Angeles, and local law enforcement have the authority to enforce the California Vehicle Code and local ordinances. Additionally, we encourage LADOT and other cities to participate in the continued development of AV operations data reporting currently ongoing in the rulemaking. [39]

San Francisco, submitting jointly as the San Francisco Municipal Transportation Agency, San Francisco County Transportation Authority, and the San Francisco Planning Department, opposes the approval of Cruise's request as granted in the resolution. San

[36] Deployment Decision at 21.
[37] *See* Passenger Charter-party Carriers Act, Pub. Util. Code §§ 5351 et seq.
[38] Deployment Decision at 8.
[39] *See* Assigned Commissioner's Ruling on Development of New Data Reporting for Autonomous Vehicles Driverless Deployment Program, filed May 25, 2023.

Francisco describes additional incidents and complaints regarding Cruise AVs and argues that approval is unreasonable given the new hazards being reported. San Francisco disagrees with the "reasonableness" standard of review for Cruise's Passenger Safety Plan, arguing that the current record is "inadequate" and presents "material issues" that must be addressed before approval. San Francisco argues that consideration of Cruise's request should be deferred until data reporting issues have been resolved through the rulemaking or, alternatively, that Cruise's service expansion should be approved with limitations to the scale, time, and location of operations.

We acknowledge San Francisco's comments and agree, as we have expressed earlier in this resolution, that incidents such as unplanned stops and improper interactions with first responders are concerning and represent hazards to passenger and public safety. We appreciate San Francisco's efforts to share information on incidents it becomes aware of and are requesting party comment on how to formalize such a process. However, these anecdotes do not represent a sufficiently robust set of facts upon which to alter the Draft Resolution's findings or conclusions. The Commission has initiated a process to update data collection requirements in the AV program through R.12-12-011 and encourages San Francisco to participate so that rigorous, non-anecdotal incident and other AV operations data may be systematically collected, analyzed, and acted upon in the future. At this time, the information shared by San Francisco does not alter our conclusion that Cruise's advice letter meets the requirements of the Deployment Decision and that its PSP is complete and reasonable per existing requirements. Any future modifications to these requirements or the standard of review are more appropriately addressed through the rulemaking, not the advice letter process.

San Francisco's comments include its own analysis of Cruise's safety record, based on data available from NHTSA, the California DMV, and the Commission. San Francisco states that its analysis indicates the Cruise AV's injury collision rate appears to be much higher than average human drivers. However, we find this analysis lacks sufficient rigor and nuance to form a basis for modifying the Resolution. It highlights the need for enhanced systematic data collection that supports objective analysis of AV performance. We encourage San Francisco, along with all parties, to participate in the continued development of AV data reporting requirements through the rulemaking process. We discuss below our concerns with San Francisco's conclusions, including its statistical methods for assessing the frequency of collisions and the lack of contextual awareness in assessing responsibility of the collisions cited.

Regarding the frequency of collisions, San Francisco's analysis necessarily covers a very limited data set – 6 months of operation and an estimated 790,000 vehicle miles traveled

(VMT) – due to the nascent nature and small scale of Cruise's AV operations relative to conventional human-driven vehicles, which constitute multiple orders of magnitude more VMT. Extrapolating from less than 1 million miles to 100 million, and then comparing to a national average without normalizing for factors such as roadway type (e.g., arterial vs. local street) or land use context (e.g., urban, suburban, or rural), introduces an unacceptably high degree of statistical error and uncertainty.

Regarding collision responsibility, San Francisco's analysis appears to omit or overlook relevant facts present in the data and collision narratives that are critical for understanding the context of the cited incidents. The examples of four injury collisions upon which San Francisco appears to be basing its analysis of Cruise's relative injury collision rate, which are included below as Appendix A, are problematic in this regard. In three of the four collisions, a safety driver was present in the vehicle. In one of the collisions (June 2022), the contact occurred after the safety driver had disengaged from autonomous mode. In three of the collisions (June 2022, August 2022 and September 2022), other vehicles struck the rear of the Cruise AV. Note that no determination of fault, of the AV or otherwise, is evident through these reports. The highest reported injury severity[40] of these collisions was minor. While we acknowledge the need to proactively evaluate early data and less severe collisions as leading indicators of safety performance, in hopes that such proactive monitoring will help prevent additional collisions and/or more severe incidents, the shortcomings of this analysis again highlight the need for systematic data collection that supports objective analysis of AV performance.

Finally, San Francisco raises the applicability of the California Environmental Quality Act (CEQA) to the Resolution and to the Commission's AV Deployment programs. San Francisco argues that the approval of a Draft Resolution is a Discretionary Action under CEQA that has reasonably foreseeable environmental impacts, so the Commission must conduct an environmental review prior to approval. San Francisco further argues that the authorization of widespread AV deployment necessitates the initiation of Phase II of AV Deployment as contemplated in D.21-05-017, which San Francisco believes would trigger the need for environmental review.

D.21-05-017 makes clear, however, that this Resolution is not the proper venue for raising CEQA concerns. In that Decision, we made clear that any environmental impacts caused by these initial deployment measures were "far too speculative to undertake environmental

[40] Possible injury severity values are: fatality, serious, moderate, minor, no injuries reported, unknown. See Standing General Order 2021-01 Incident Report Data Dictionary, available at https://static.nhtsa.gov/odi/ffdd/sgo-2021-01/SGO-2021-01_Data_Element_Definitions.pdf.

review . . . ."[41] We further made clear, however, that we would open a new phase of the TNC proceeding, R.12-12-011, in which "the data we have already required to be collected will be used to evaluate the Deployment Programs," and that "[p]arties may raise the applicability of CEQA at that time."[42] And we set a deadline for opening that phase of the proceeding.[43] Cruise's advice letter was filed pursuant to the Deployment Decision, and is one of the steps toward gathering the information necessary to performing CEQA review—if indeed CEQA review is needed. For the same reason San Francisco's request to open Phase II is premature: we need the data this step will generate.

FINDINGS

1. On December 16, 2022, Cruise LLC (Cruise) submitted advice letter Cruise-0002 requesting authorization to expand its operations under its existing California Public Utilities Commission (Commission) Phase I Autonomous Vehicles (AV) Passenger Service Driverless Deployment permit.
2. Cruise's advice letter received 1 timely protest, 2 timely responses expressing concern, and 39 timely responses in support.
3. The San Francisco Municipal Transportation Agency, San Francisco County Transportation Authority, and the Mayor's Office of Disability jointly protested Cruise's advice letter on the grounds that the requested expansion is unreasonable given Cruise's operational performance and the lack of incrementalism, data transparency, and adequate reporting and monitoring. We find this not to be proper ground for a protest and therefore treat the protest as a response to the advice letter.
4. The Los Angeles Department of Transportation submitted a response expressing concerns regarding passenger pickup and drop-off in travel lanes, the usability and transparency of Commission AV data reporting and lack of real-time data, and the need for the Commission to establish AV performance standards and evaluate Cruise against those standards before any expansions.
5. The California Transit Association submitted a response expressing concerns about impacts of driverless AVs on transit operations and advocates for an incremental approval in terms of geographic area, hours of operation, and fleet size, that includes additional data reporting on travel lane obstructions.
6. Responses in support were submitted by American Council of the Blind, Andrew Johnson, Autonomous Vehicles Industry Association, Bill Bogdan, Brad Duerstock (Associate Professor of Engineering Practice, Purdue University), Brandon Winfield, California Assemblymember Evan Low, California Chamber of Commerce,

[41] D.21-05-017, at 5.
[42] Ibid.
[43] Ibid.

Chamber of Progress, Chinese Chamber of Commerce of San Francisco, City of El Cerrito Councilmember Gabe Quinto, Consumer Technology Association, Corporation for Automated Road Transportation Safety, Fillmore Merchant Association, Golden Gate Restaurant Association, Humanmade, India Basin Neighborhood Association, Ken Pyle, Matt Ater (Vispero), Mike Williston, National Federation of the Blind, NorCal Spinal Cord Injury Foundation, Owen Kent, Phillip Wilcox, Potrero Dogpatch Merchants Association, Richmond Neighborhood Center, Rose Pak Community Fund, San Francisco Chamber of Commerce, San Francisco Council of District Merchants Associations, San Jose Chamber of Commerce, Self-Help for the Elderly, sf.citi, Silicon Valley Leadership Group, Sunset Mercantile, TechNet, Telegraph Hill Neighborhood Center, The Harkin Institute, Todd Roberts (ATDev), and United Spinal Association.

7. Support letters highlighted the safety, accessibility, environmental, and economic benefits of Cruise's proposed expansion.
8. Cruise has properly submitted its expansion request per the requirements of Ordering Paragraph 20 of Decision (D.)20-11-046, as modified by D.21-05-017 (Deployment Decision) and Ordering Paragraph 6 of Resolution TL-19137.
9. Cruise has submitted an updated Passenger Safety Plan that meets the requirements of Ordering Paragraphs 8 and 20 of the Deployment Decision.
10. Cruise's updated Passenger Safety Plan is reasonable and its updates reasonably address the expanded service.
11. The Deployment Decision does not prescribe a particular progression for the testing and deployment of AVs in terms of participation in Commission AV programs, number of vehicles, character of operations, or any other factors.
12. Ordering Paragraphs 7(b) and 7(f)(iv) of the Deployment Decision require the submission of an Operational Design Domain approved by the California Department of Motor Vehicles (DMV).
13. The DMV has authority over the technical ability of AVs to operate safely on public roads in California.
14. AVs operate in a complex environment in which passenger and public safety are interdependent and mutually reinforcing.
15. Unplanned stops, improper interactions with first responders or rail crossings, and passenger pickup and drop-off operations in a travel lane create hazards for passengers and the public and in some situations violate the California Vehicle Code.
16. AV operations in proximity to rail crossings are characterized by unique safety concerns and potentially higher levels of risk.

17. Cruise has followed the required procedures of General Order 66-D in making claims of confidentiality related to its quarterly AV Deployment data reports.
18. It is reasonable for AV regulation and policy at the Commission to evolve as AV technology and operations scale and change.

THEREFORE, IT IS ORDERED THAT:

1. Cruise LLC's request to expand its Operational Design Domain under its existing Phase I Driverless Autonomous Vehicles Passenger Service Deployment permit is approved.

This Resolution is effective today.

I hereby certify that this Resolution was adopted by the California Public Utilities Commission at its regular meeting on _____. The following Commissioners approved it:

_____

Rachel Peterson
Executive Director

Appendix A

Cruise Injury Collisions in San Francisco, reported per NHTSA Standing General Order on AV Data Reporting, June 2022 – November 2022[44]

Incident Date	Incident Narrative
September 2022	"A Cruise autonomous vehicle ("Cruise AV"), operating in supervised autonomous mode, was traveling westbound on [XXX] between [XXX] and [XXX]. At the same time, a motorcyclist approaching from the rear began to merge into the Cruise AV's lane behind the Cruise AV, and subsequently made contact with the Cruise AV's rear passenger side bumper, damaging the motorcycle's front fender. The driver of the motorcycle reported minor injuries and police were not called."
August 2022	"A Cruise autonomous vehicle ("Cruise AV"), operating in supervised autonomous mode, was at a complete stop in response to a red light on eastbound [XXX] at the intersection with [XXX]. A white Honda SUV approaching from the rear in the lane to the left of the Cruise AV changed into the Cruise AV's lane, came to a complete stop behind the Cruise AV, and then proceeded forward to make contact with the rear driver side bumper of the Cruise AV. The white Honda SUV reversed backwards several feet, proceeded forward, came to a complete stop, and then proceeded forward to make contact with the Cruise AV again. This caused damage to the Cruise AV's rear driver side fascia. The driver of the other vehicle left the scene without exchanging information. Both Cruise AV operators reported injuries."
June 2022	"A Cruise autonomous vehicle ("Cruise AV"), operating in supervised autonomous mode, was traveling eastbound on [XXX] between [XXX] between [XXX] and [XXX]. Following the intersection of [XXX] mid-block, while engaged in autonomous mode, a vehicle in an angled parking space on the right backed out into the same lane as the oncoming Cruise AV. The AV operator disengaged from autonomous into manual mode, and pulled to the left to avoid the vehicle backing up. At this time, contact by a cyclist was made at the rear driver side bumper of the Cruise AV. There were no reported injuries or damages at the scene by either party and police were not called. The following day on [XXX], the cyclist claimed damages and injuries related to the event."
June 2022	"A Cruise autonomous vehicle ("Cruise AV") operating in driverless autonomous mode, was traveling eastbound on [XXX] toward the intersection with [XXX]. As it approached the intersection, the Cruise AV entered the left hand turn lane, turned the left turn signal on, and initiated a left turn on a green light onto [XXX]. At the same time, a Toyota Prius

[44] Available at https://www.nhtsa.gov/laws-regulations/standing-general-order-crash-reporting#data.

	traveling westbound in the rightmost bus and turn lane of [XXX] approached the intersection in the right turn lane. The Toyota Prius was traveling approximately 40 mph in a 25 mph speed zone. The Cruise AV came to a stop before fully completing its turn onto [XXX] due to the oncoming Toyota Prius, and the Toyota Prius entered the intersection traveling straight from the turn lane instead of turning. Shortly thereafter, the Toyota Prius made contact with the rear passenger side of the Cruise AV. The impact caused damage to the right rear door, panel, and wheel of the Cruise AV. Police and Emergency Medical Services were called to the scene, and a police report was filed. The Cruise AV was towed from the scene. Occupants of both vehicles received medical treatment for allegedly minor injuries."