Working Group Meeting #2

Proposed Amended Rule 461 – Gasoline Transfer and Dispensing

Proposed Rule 461.1 – Gasoline Transfer and Dispensing for Mobile Fueling Operations

Proposed Amended Rule 219 – Equipment not Requiring a Written Permit Pursuant to Regulation II

Meeting Information

December 16, 2020
1:00 p.m.

Zoom Meeting Link:
https://scaqmd.zoom.us/j/94337532432

Dial In:
+1 (669) 900-6833

Meeting ID:
943 3753 2432

Meeting Password:
107256

Presentation Agenda Overview

- Rule Development Process to Date
- Coordination with Fire Authorities
- Rule 461 Requirements for Mobile Fuelers
- Looking Ahead

Agenda Item # 1
Rule Development Process to Date

Working Group #1 Summary

- South Coast AQMD has observed an emergence of mobile fueling companies
- Summarized South Coast AQMD rules that are applicable to gasoline dispensing operations
- Discussed that permits are required for mobile fueler operations with:
  - A cumulative capacity of ≥ 251 gallons or a tank capacity of > 120 gallons
  - Vapor recovery equipped on any tanks
  - Estimated health risks > Rule 1401 thresholds

Survey for Mobile Fueling Operations

- Staff distributed a survey to collect current operational information
- Microsoft Forms survey is available via the South Coast AQMD Proposed Rules and Proposed Rule Amendments website:

  http://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules

Stationary Source Committee

- Stationary Source Committee is comprised of five Governing Board Members and generally discusses proposed rules and implementation reports such as RECLAIM, New Source Review, AB 617, and monitoring efforts
- A Stationary Source Committee member asked staff to provide a regulatory overview of retail mobile fueling operations at the November 20, 2020 Stationary Source Committee meeting
  - Presentation covered the regulatory background on retail mobile fueling operations highlighting key challenges with rulemaking
  - Presentation was informational and not an action item
  - The meeting is available to view via YouTube: https://www.aqmd.gov/home/news-events/webcast/live-webcast?ms=me80kInkL2M
- Staff generally provides Stationary Source Committee with a summary of a proposed rule two months before the Public Hearing

Agenda Item # 2

Coordination Fire Authorities

Interagency Coordination with Fire Authorities

- Staff has met with other local and state fire authorities to learn about their requirements and perspectives regarding retail mobile fueling operations
- Important step in the rulemaking process as retail mobile fueling operations are relatively new
  - Provides greater additional insight about mobile refueling operations
  - Identifies issues or limitations that other agencies may be aware of
  - Provides information to help ensure proposed rules are not in conflict with requirements of other agencies
  - Ensures proposed rules do not establish duplicative requirements

Background on International Fire Code (IFC) in California

- The IFC Section 5707 – Mobile Fueling model code was presented in the International Code Hearings in 2016 and approved for inclusion with an effective date of July 1, 2018
- The IFC is a "model code" and does not become law or enforceable unless it is adopted by a fire authority (state or local)
- Office of the State Fire Marshal (Cal Fire or OSFM) incorporated the mobile fueling model codes into Chapter 57 Section 5707 – On-Demand Mobile Fueling Operations, but did not adopt the code
- Although not required, local fire authorities may choose to use the incorporated code to develop and adopt into law their own mobile fueling requirements

Fleet vs. On-Demand Mobile Fueling

Fleet Fueling

- Section 5706 – Special Operations
- Vehicles are owned by the operator and fuel is typically dispensed at an approved location (e.g., landscaping company, construction company, etc.)

On-Demand Mobile Fueling

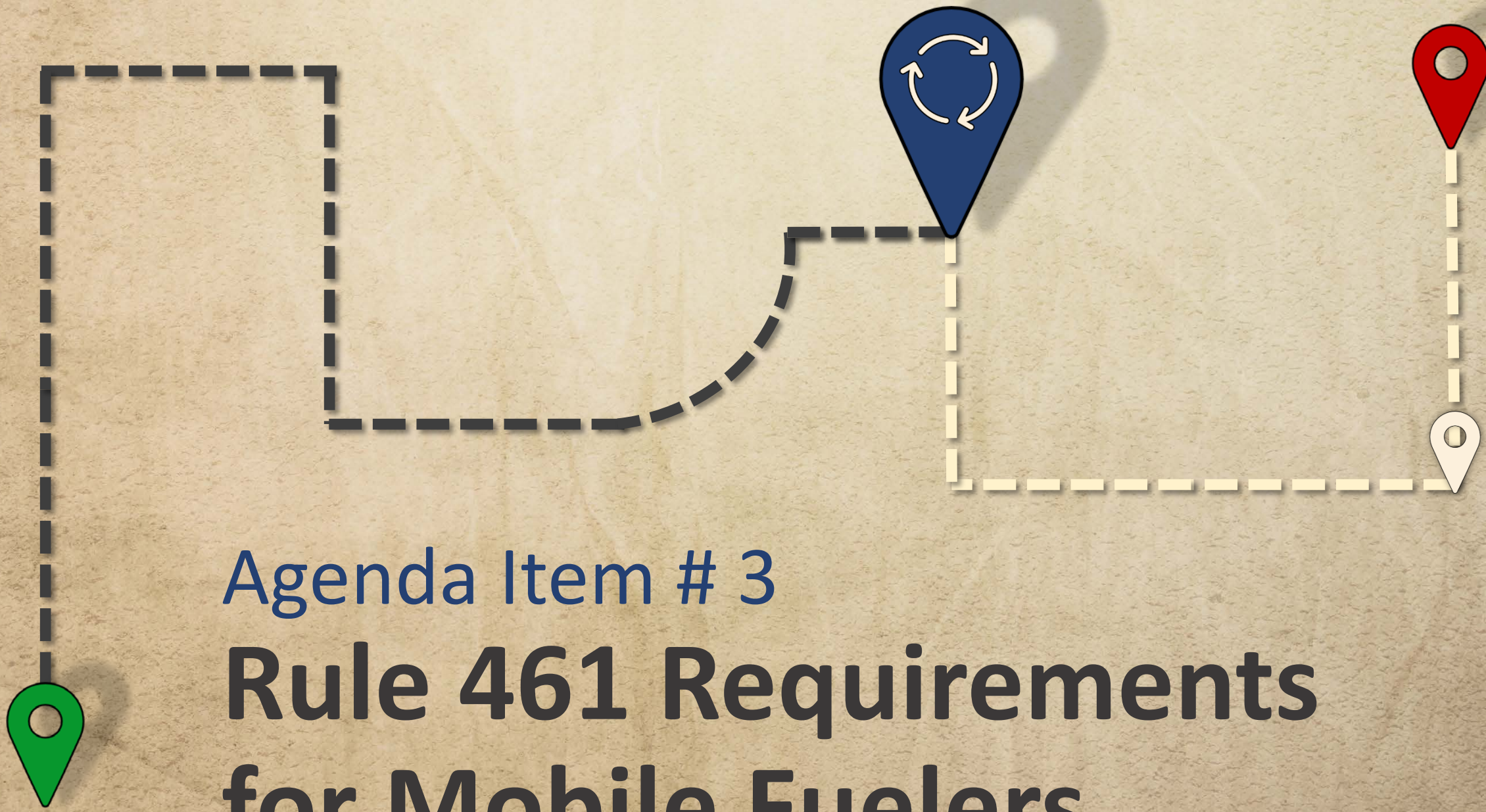
- Section 5707 - On-Demand Mobile Fueling Operations
- Vehicles may be owned by private individuals and fuel can be dispensed on demand at various locations

Key Requirements of Section 5707 On-Demand Mobile Fueling Operations

- Regulation describes on-demand mobile fueling as vehicles mounted with a tank >110 gallons and chassis-mounted tanks or containers where the aggregate cargo capacity < 1,200 gallons
- Applicable to on-demand mobile fueling operations that dispense gasoline and other combustible or flammable liquids into fuel tanks of motor vehicles
- Regulations provide requirements for technical and administrative safety controls
  - Mobile fueling operations require an approved permit from the fire officials
  - Specifies requirements for safety and emergency response plans, training records, site plans, equipment, and operations
  - Prohibits mobile fueling on public streets, public ways, or inside buildings and fueling on the roof level of parking structures or other buildings

Local Fire Authorities Mobile Fueling Perspectives

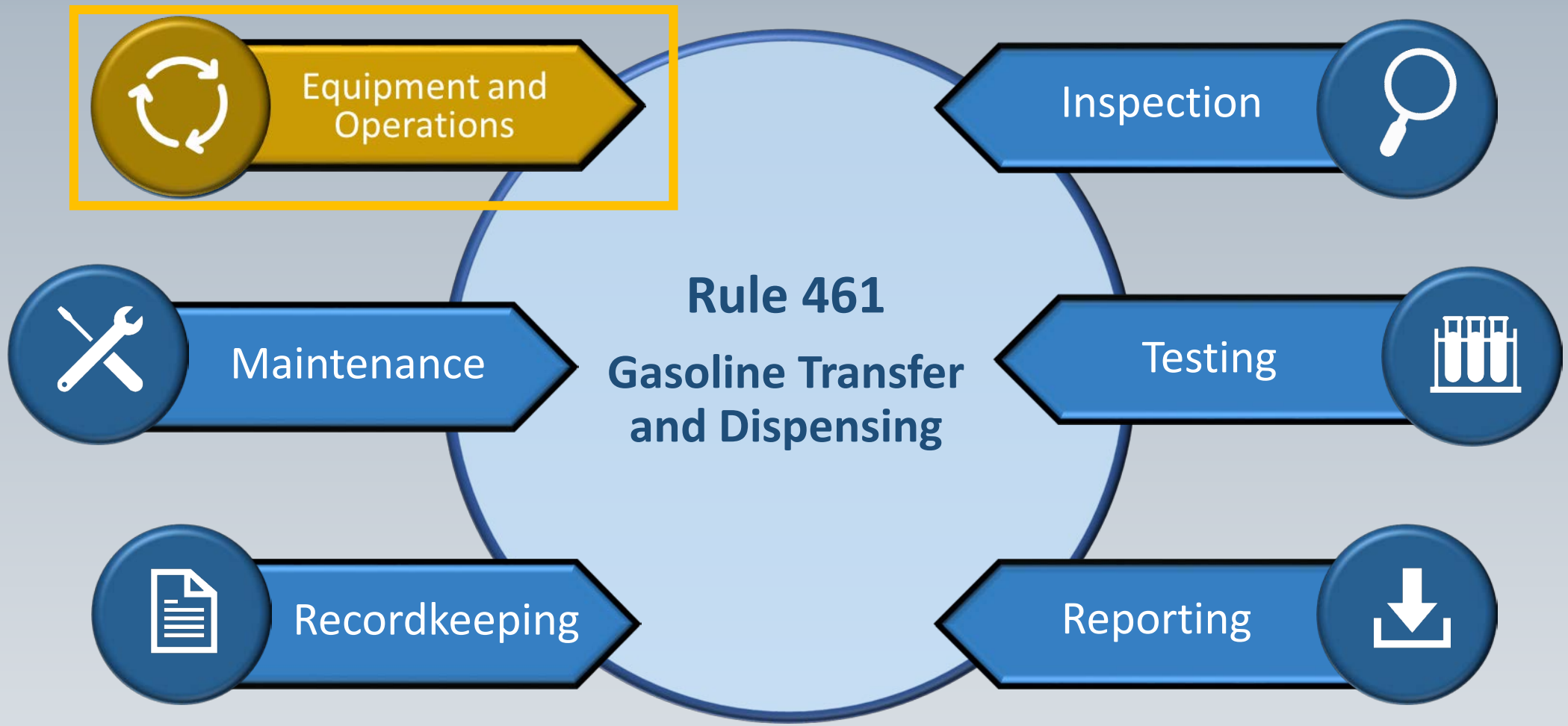
- Orange County Fire Authority
  - Orange County Fire Authority did not adopt the on-demand mobile fueling fire code
  - Allows mobile fuelers that conduct fleet fueling
  - As of July 24, 2018 the City of Irvine has been participating in a pilot program with a mobile fueling company
    - Allows on-demand and fleet fueling on private commercial properties
    - Prohibits fueling on streets
    - Both the mobile fueling company and the property owner of the fueling location must secure permits from Orange County Fire Authority
- LA City Fire Department
  - Adopted the on-demand mobile fueling requirements, but is not issuing permits
  - Allows mobile fuelers that conduct fleet fueling
  - Does not currently allow any on-demand mobile fueling operations
  - Expressed concern about on-demand fueling, fueling on streets, and in parking structures



Agenda Item # 3

Rule 461 Requirements for Mobile Fuelers

Gasoline Storage and Dispensing Facilities



General Regulatory Approach for Equipment and Operations for Gasoline Dispensing

- State law requires CARB to adopt procedures and certify systems designed for the control of gasoline vapor emissions[1]
- All California air districts rely on CARB certifications to ensure operation within vapor recovery performance standards
- Rule 461 requires that stationary gasoline dispensing facilities and mobile fuelers only use CARB certified equipment when transferring and dispensing gasoline
- Rule 461 requires two categories of CARB certified vapor recovery systems
  - **Phase I Vapor Recovery Systems:** Vapor recovery system when transferring gasoline into the tank of the mobile fueler
  - **Phase II Recovery Systems:** Vapor recovery system when transferring gasoline into a motor vehicle tank
- CARB certified vapor recovery components are not the same as CARB certified Phase I and II vapor recovery systems
  - Certified vapor recovery systems are composed of certified components/equipment

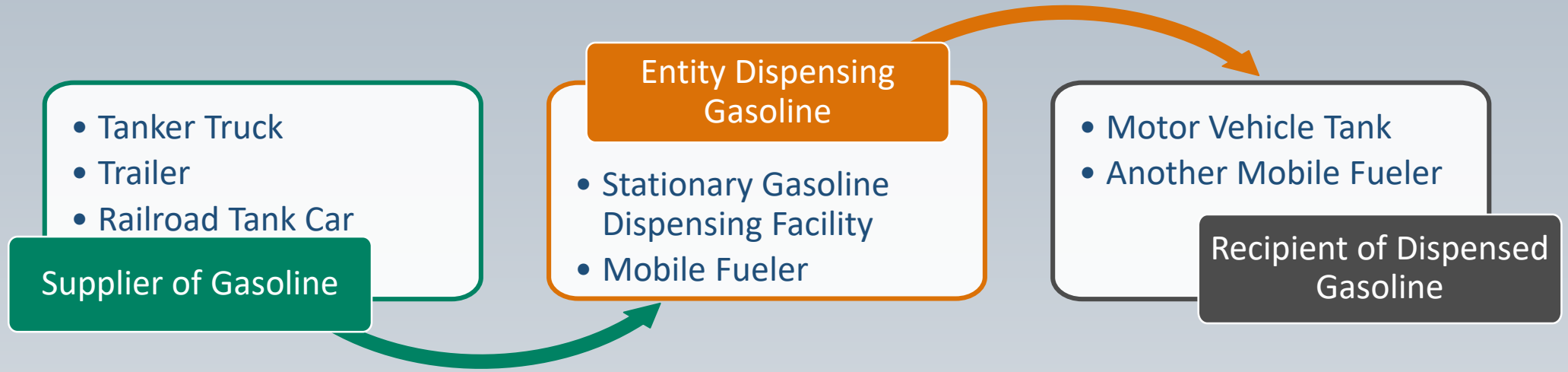
[1] Pursuant to Health and Safety Code Section 41954

Equipment and Operations

Rule 461 Requirements for Using CARB Certified Equipment for Mobile Fuelers

Phase II Vapor Recovery Systems:

- CARB certified vapor recovery components include nozzles, liquid removal, and breakaway couplings, etc.
- CARB certified vapor recovery systems are required to be vapor and liquid tight



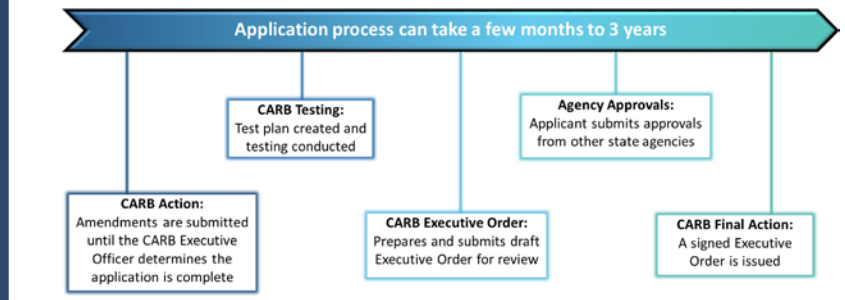
Phase I Vapor Recovery Systems

CARB certified vapor recovery systems are to be equipped with components to prevent overflow and minimize release of emissions

Please view regulation for specific requirements.

Equipment and Operations

Two Main Elements in CARB Certification Process



Pre-Application Process

Application process for manufacturers to initiate the certification process of Phase I or Phase II vapor recovery systems or components

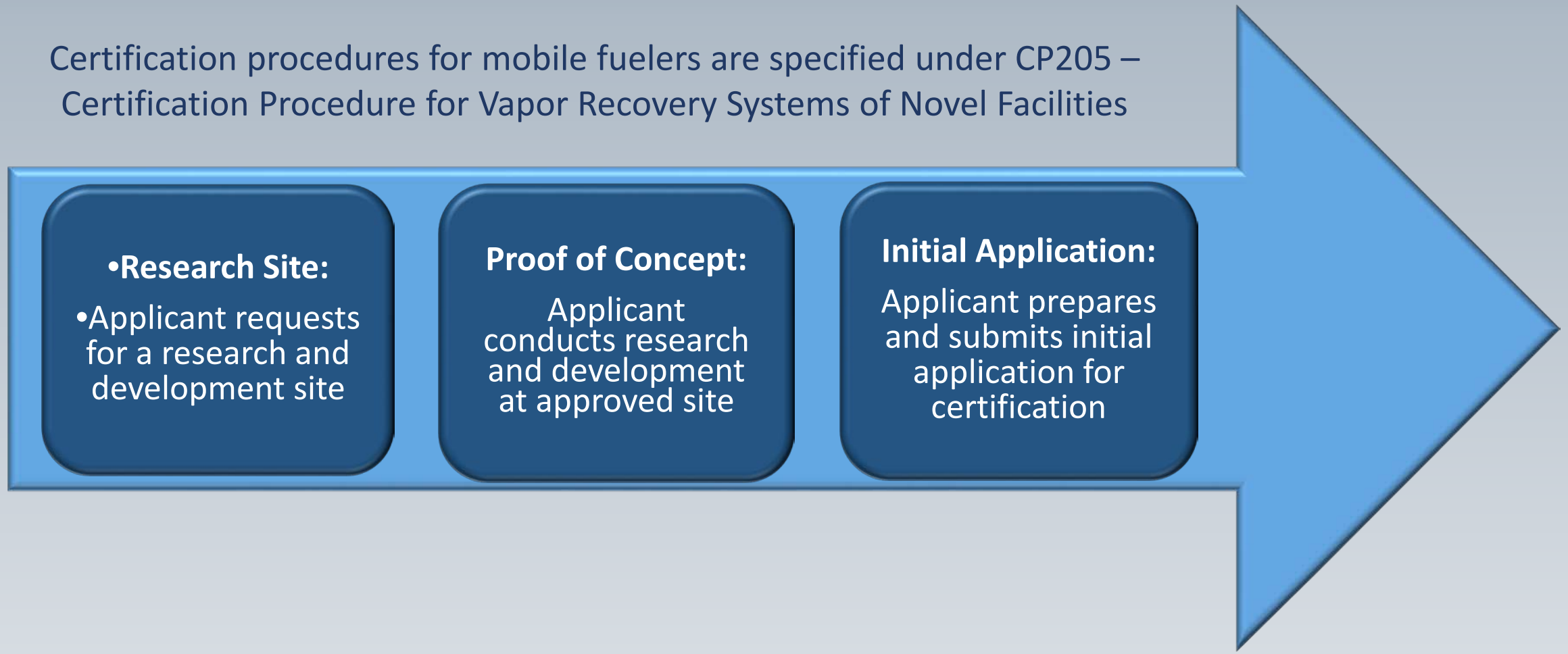
CARB Certification Process

Certification procedures to ensure vapor recovery components and systems meet specific emissions and performance standards

Equipment and Operations

Pre-Application Process

Certification procedures for mobile fuelers are specified under CP205 – Certification Procedure for Vapor Recovery Systems of Novel Facilities



For additional details, please view: https://ww2.arb.ca.gov/vapor-recovery-certification-process-gasoline-dispensing-facilities

Equipment and Operations

CARB Certification Process

Application process can take a few months to 3 years

CARB Action:
Amendments are submitted until the CARB Executive Officer determines the application is complete

CARB Testing:
Test plan created and testing conducted

CARB Executive Order:
Prepares and submits draft Executive Order for review

Agency Approvals:
Applicant submits approvals from other state agencies

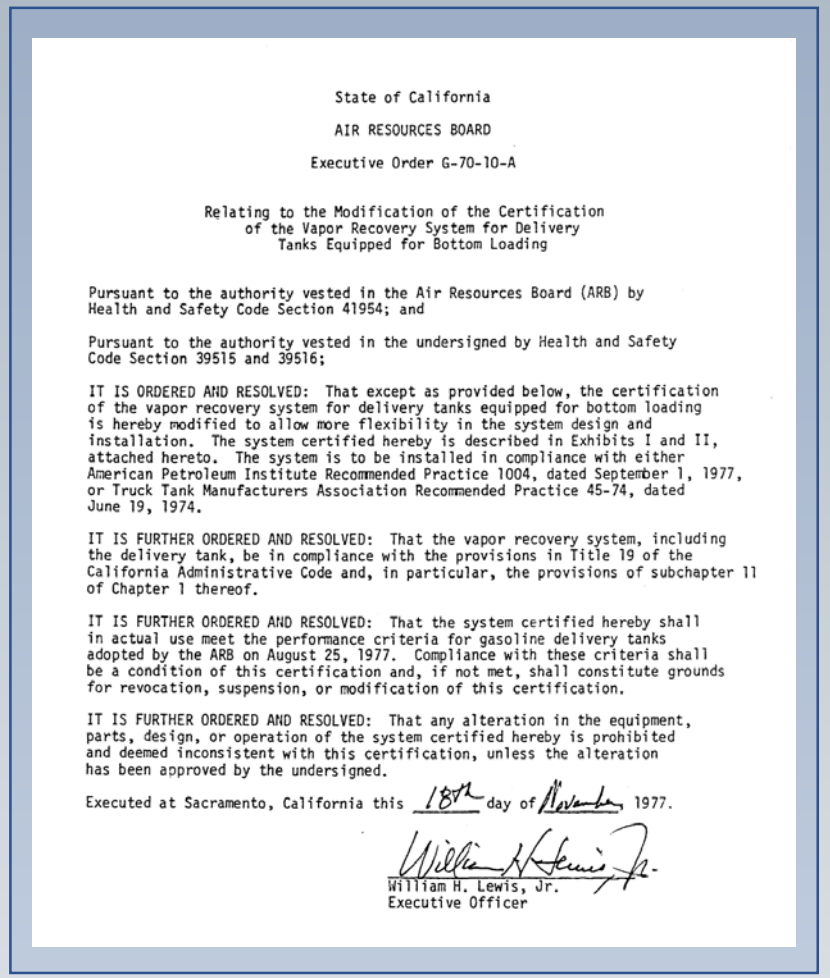
CARB Final Action:
A signed Executive Order is issued

For additional details, please view: https://ww2.arb.ca.gov/vapor-recovery-certification-process-gasoline-dispensing-facilities
Time periods may be extended by the CARB Executive Officer for good cause per CCR, Title 17, Section 60030 (d).

Equipment and Operations

CARB Certified Phase I System for Mobile Fuelers

- The Phase I vapor recovery system was certified under CARB Executive Order G-70-10-A Relating to the Modification of the Certification of the Vapor Recovery System for Delivery Tanks Equipped for Bottom Loading in 1977
- This is the only certification for Phase I vapor recovery systems for mobile fuelers
- The Executive Order does not specify a manufacturer of the components



State of California

AIR RESOURCES BOARD

Executive Order G-70-10-A

Relating to the Modification of the Certification of the Vapor Recovery System for Delivery Tanks Equipped for Bottom Loading

Pursuant to the authority vested in the Air Resources Board (ARB) by Health and Safety Code Section 41954; and

Pursuant to the authority vested in the undersigned by Health and Safety Code Section 39515 and 39516;

IT IS ORDERED AND RESOLVED: That except as provided below, the certification of the vapor recovery system for delivery tanks equipped for bottom loading is hereby modified to allow more flexibility in the system design and installation. The system certified hereby is described in Exhibits I and II, attached hereto. The system is to be installed in compliance with either American Petroleum Institute Recommended Practice 1004, dated September 1, 1977, or Truck Tank Manufacturers Association Recommended Practice 45-74, dated June 19, 1974.

IT IS FURTHER ORDERED AND RESOLVED: That the vapor recovery system, including the delivery tank, be in compliance with the provisions in Title 19 of the California Administrative Code and, in particular, the provisions of subchapter 11 of Chapter 1 thereof.

IT IS FURTHER ORDERED AND RESOLVED: That the system certified hereby shall in actual use meet the performance criteria for gasoline delivery tanks adopted by the ARB on August 25, 1977. Compliance with these criteria shall be a condition of this certification and, if not met, shall constitute grounds for revocation, suspension, or modification of this certification.

IT IS FURTHER ORDERED AND RESOLVED: That any alteration in the equipment, parts, design, or operation of the system certified hereby is prohibited and deemed inconsistent with this certification, unless the alteration has been approved by the undersigned.

Executed at Sacramento, California this 18th day of November, 1977.

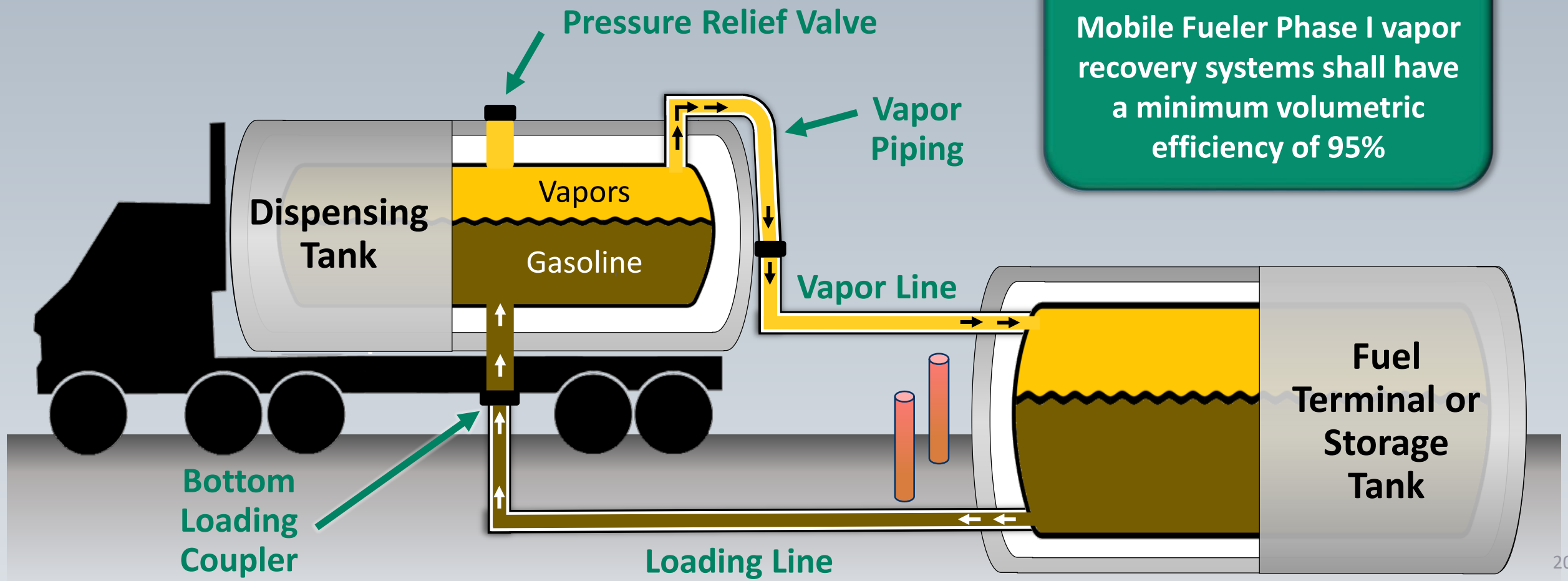
William H. Lewis, Jr.
Executive Officer

Equipment and Operations

CARB Certified Phase I Vapor Recovery System
Key Vapor Recovery Features During Fuel Loading

FUEL LOADING

Mobile Fueler Phase I vapor recovery systems shall have a minimum volumetric efficiency of 95%

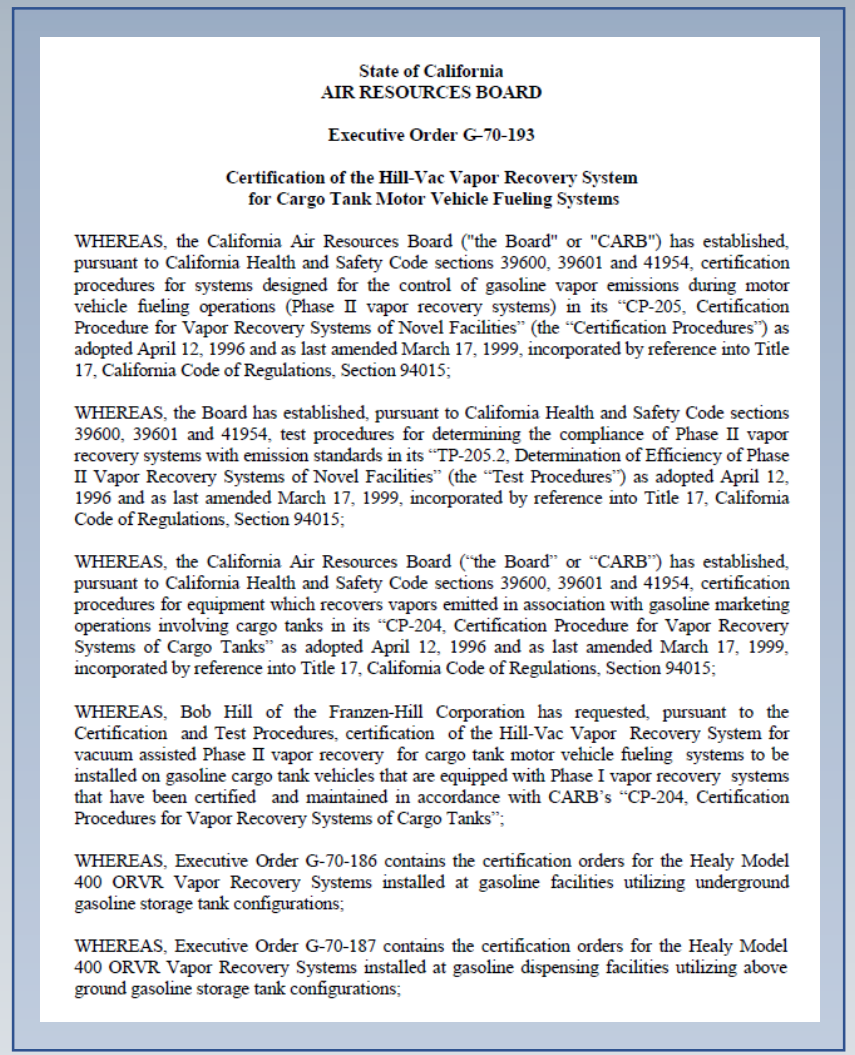


Please view Executive Order G-70-0-A for specific requirements.

Equipment and Operations

CARB Certified Phase II System for Mobile Fuelers

- The Phase II vapor recovery system was certified under CARB Executive Order G-70-193 for Certification of the Hill-Vac Vapor Recovery System for Cargo Tank Motor Vehicle Fueling Systems in 1999
- This is the only CARB certified Phase II vapor recovery system for mobile fuelers
- The Executive Order is specific to the Hill-Vac vapor recovery system manufactured by The Franzen-Hill Corporation or an authorized representative



State of California
AIR RESOURCES BOARD

Executive Order G-70-193

Certification of the Hill-Vac Vapor Recovery System for Cargo Tank Motor Vehicle Fueling Systems

WHEREAS, the California Air Resources Board ("the Board" or "CARB") has established, pursuant to California Health and Safety Code sections 39600, 39601 and 41954, certification procedures for systems designed for the control of gasoline vapor emissions during motor vehicle fueling operations (Phase II vapor recovery systems) in its "CP-205, Certification Procedure for Vapor Recovery Systems of Novel Facilities" (the "Certification Procedures") as adopted April 12, 1996 and as last amended March 17, 1999, incorporated by reference into Title 17, California Code of Regulations, Section 94015;

WHEREAS, the Board has established, pursuant to California Health and Safety Code sections 39600, 39601 and 41954, test procedures for determining the compliance of Phase II vapor recovery systems with emission standards in its "TP-205.2, Determination of Efficiency of Phase II Vapor Recovery Systems of Novel Facilities" (the "Test Procedures") as adopted April 12, 1996 and as last amended March 17, 1999, incorporated by reference into Title 17, California Code of Regulations, Section 94015;

WHEREAS, the California Air Resources Board ("the Board" or "CARB") has established, pursuant to California Health and Safety Code sections 39600, 39601 and 41954, certification procedures for equipment which recovers vapors emitted in association with gasoline marketing operations involving cargo tanks in its "CP-204, Certification Procedure for Vapor Recovery Systems of Cargo Tanks" as adopted April 12, 1996 and as last amended March 17, 1999, incorporated by reference into Title 17, California Code of Regulations, Section 94015;

WHEREAS, Bob Hill of the Franzen-Hill Corporation has requested, pursuant to the Certification and Test Procedures, certification of the Hill-Vac Vapor Recovery System for vacuum assisted Phase II vapor recovery for cargo tank motor vehicle fueling systems to be installed on gasoline cargo tank vehicles that are equipped with Phase I vapor recovery systems that have been certified and maintained in accordance with CARB's "CP-204, Certification Procedures for Vapor Recovery Systems of Cargo Tanks";

WHEREAS, Executive Order G-70-186 contains the certification orders for the Healy Model 400 ORVR Vapor Recovery Systems installed at gasoline facilities utilizing underground gasoline storage tank configurations;

WHEREAS, Executive Order G-70-187 contains the certification orders for the Healy Model 400 ORVR Vapor Recovery Systems installed at gasoline dispensing facilities utilizing above ground gasoline storage tank configurations;

Equipment and Operations

CARB Phase II Certified Mobile Fueler Certification Issues

- The Hill-Vac mobile fueler is only available in capacities between 350 to 4,000 gallons
- The certification was modified in 2007 to reflect manufacturing changes in the production of the Hill-Vac mobile fueler
- In 2019, one component of the Hill-Vac vapor recovery system became unavailable
- Manufacturer is unable to make new systems as the system is certified to be operated with a part that is no longer available
- Manufacturer has developed a replacement part and has applied to re-certify the system through CARB, but the Hill-Vac mobile fueler will not be available until the modified system is CARB certified

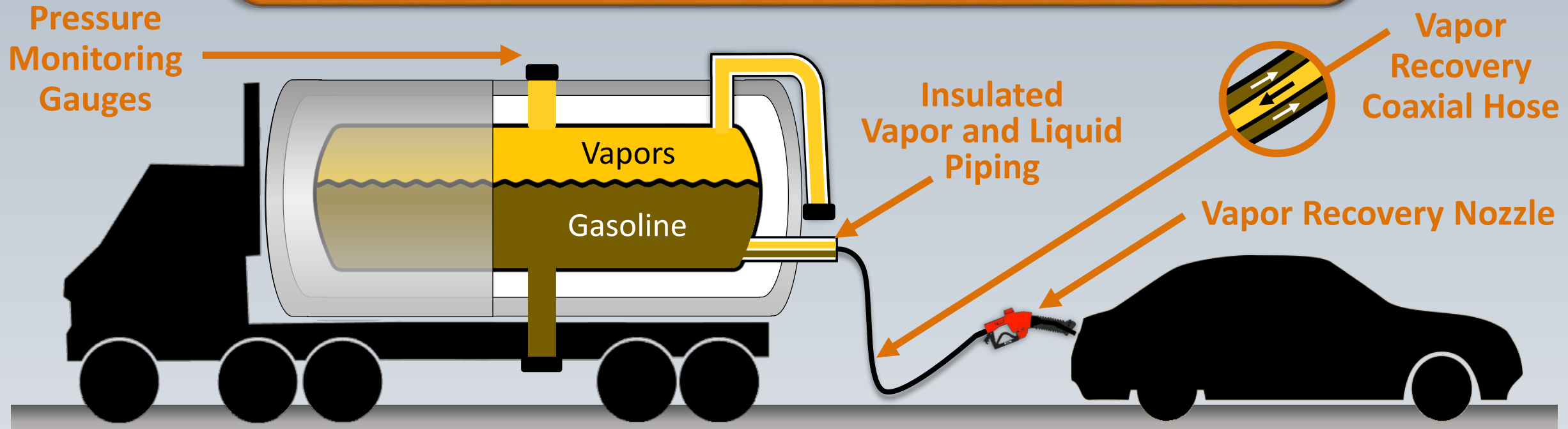
Equipment and Operations

CARB Certified Hill-Vac Phase II Vapor Recovery System
Key Vapor Recovery Features During Fuel Dispensing

FUEL DISPENSING VAPOR RECOVERY

Mobile Fueler Phase II vapor recovery systems shall be capable of:

- **Recovering or processing displaced gasoline vapors by at least 95% or**
- **Having an emission factor not exceeding 0.38 pounds per 1,000 gallons**



Please view Executive Order G-70-193 for specific requirements.

CARB Hill-Vac Gauge Requirements

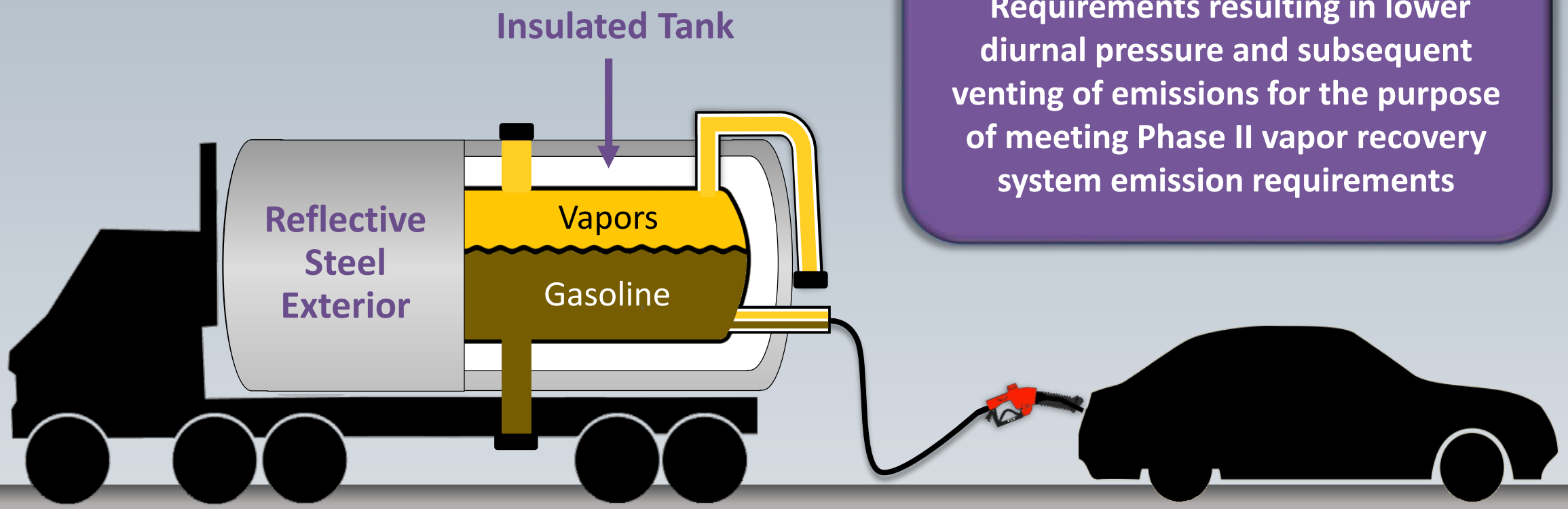
- Required gauges to monitor pressure during dispensing:
  - Vapor return line vacuum pressure
  - Gasoline supply pressure
  - Cargo tank vapor space pressure
- Fuel temperature can be a significant variable in determining evaporation rates
- Unlike underground tanks or above ground tanks covered by canopies, mobile fuelers are exposed to the sun which can lead to higher fuel temperatures
- High fuel temperatures were contributing to the system's inability to maintain compliance with the pressure gauge requirements

Equipment and Operations

Revisions to Initial CARB Certified Hill-Vac Phase II Vapor Recovery System
Key Vapor Reduction Features During Fuel Dispensing

FUEL DISPENSING VAPOR REDUCTION

Requirements resulting in lower diurnal pressure and subsequent venting of emissions for the purpose of meeting Phase II vapor recovery system emission requirements



Please view Approval Letter #07-07 for specific requirements.

Equipment and Operations

CARB Approval Letter #07-07

On November 7, 2007 CARB issued Approval Letter #07-07 for the following modifications to CARB Executive Order G-70-193:

- Cargo tank surface insulated with 3 inches of cellular polymer foam providing an insulating value of R-15-9
- Insulation wrapped in 1/16” 304 stainless steel to achieve a better reflectivity value

Equipment and Operations

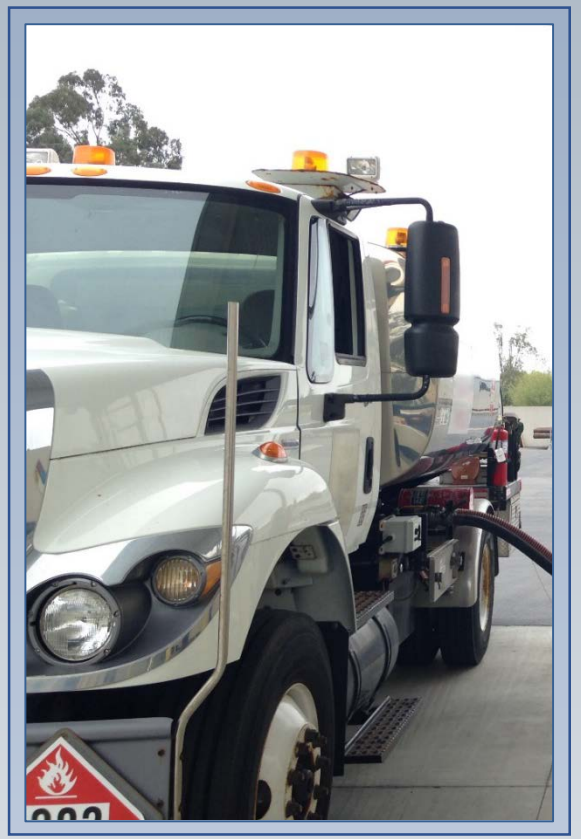
Key CARB Phase II Certification Requirements

Vapor Recovery Nozzle and Coaxial Hose: Healy nozzle and coaxial hose vapor recovery system

Liquid and Vapor Piping Insulation: Insulated with a minimum of 0.5“ of seamless rigid polyurethane foam or pre-formed foam pipe insulation

Removable Jet Pump Cover: Equipped with removable covers that surround the jet pump to reduce solar energy transferred to the fuel during dispensing

Pressure Monitoring Gauges: Pressure gauges to monitor vapor return line vacuum, gasoline supply, and cargo tank vapor space



Tank Exterior: Wrapped in 1/16” 304 stainless steel to achieve a better reflectivity value

Cargo Tank Insulation: Insulated with 3“ of cellular polymer foam providing an insulating value of R-15-9

Equipment and Operations

Current Rule 461 Mobile Fueler Requirements

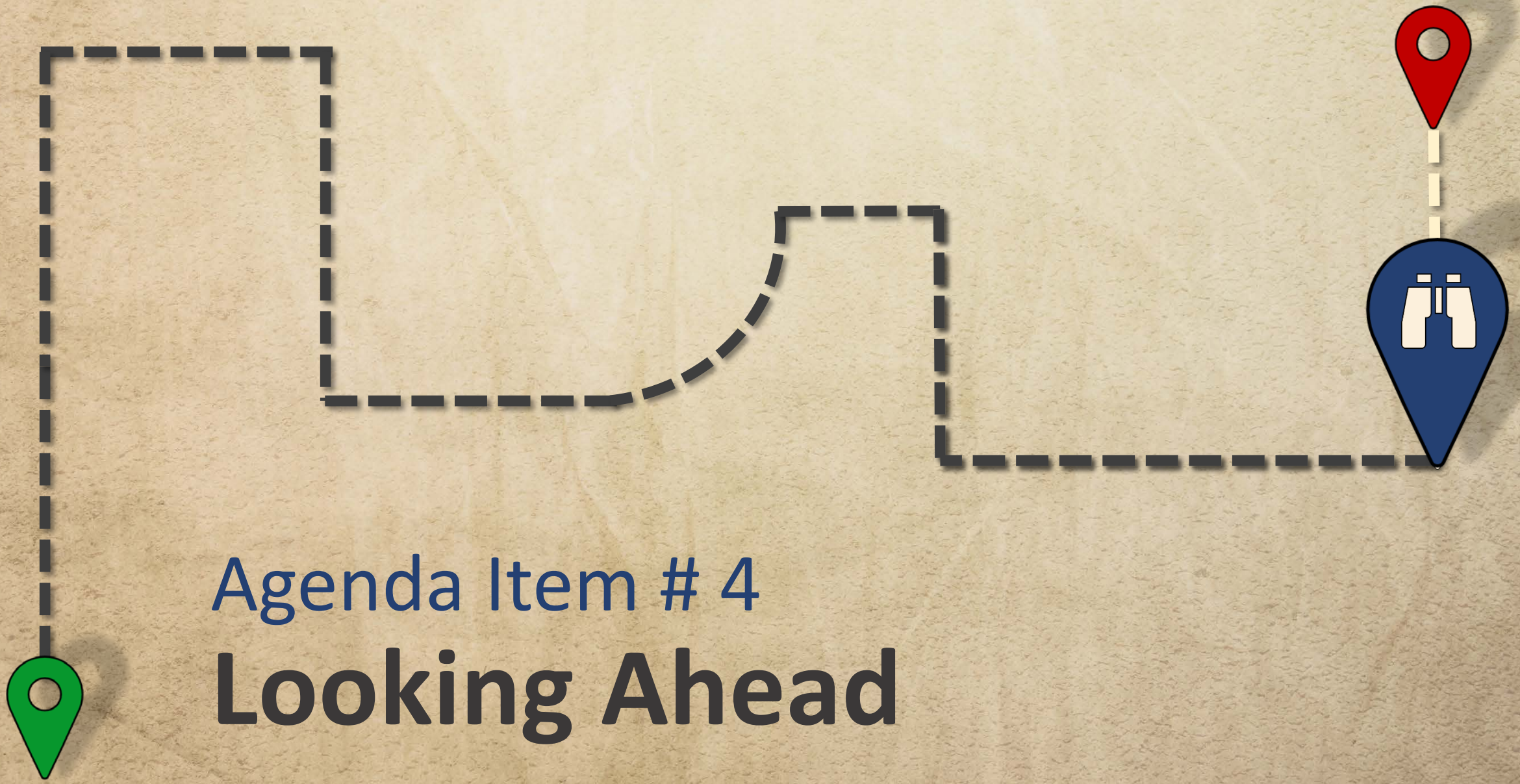
	Phase I	Phase II					Phase II Additional Specifications	
Capacity (Gallons)	Emission Controls	Vapor Recovery Nozzle	Vapor Recovery Coaxial Hose	Liquid and Vapor Piping Insulation	Removable Jet Pump Cover	Pressure Monitoring Gauges	Reflective Steel Exterior	Cargo Tank Insulation
Cumulative ≥ 251 or tank > 120	Yes	Yes [1]	Yes	Yes	Yes	Yes	Yes	Yes
Cumulative < 251 and tank ≤ 120	No	No	No	No	No	No	No	No

[1] Except for units compliant with Rule 461 (c)(4) for non-retail fleet fueling of ORVR vehicles

Equipment and Operations

Mobile Fueler Vapor Recovery System

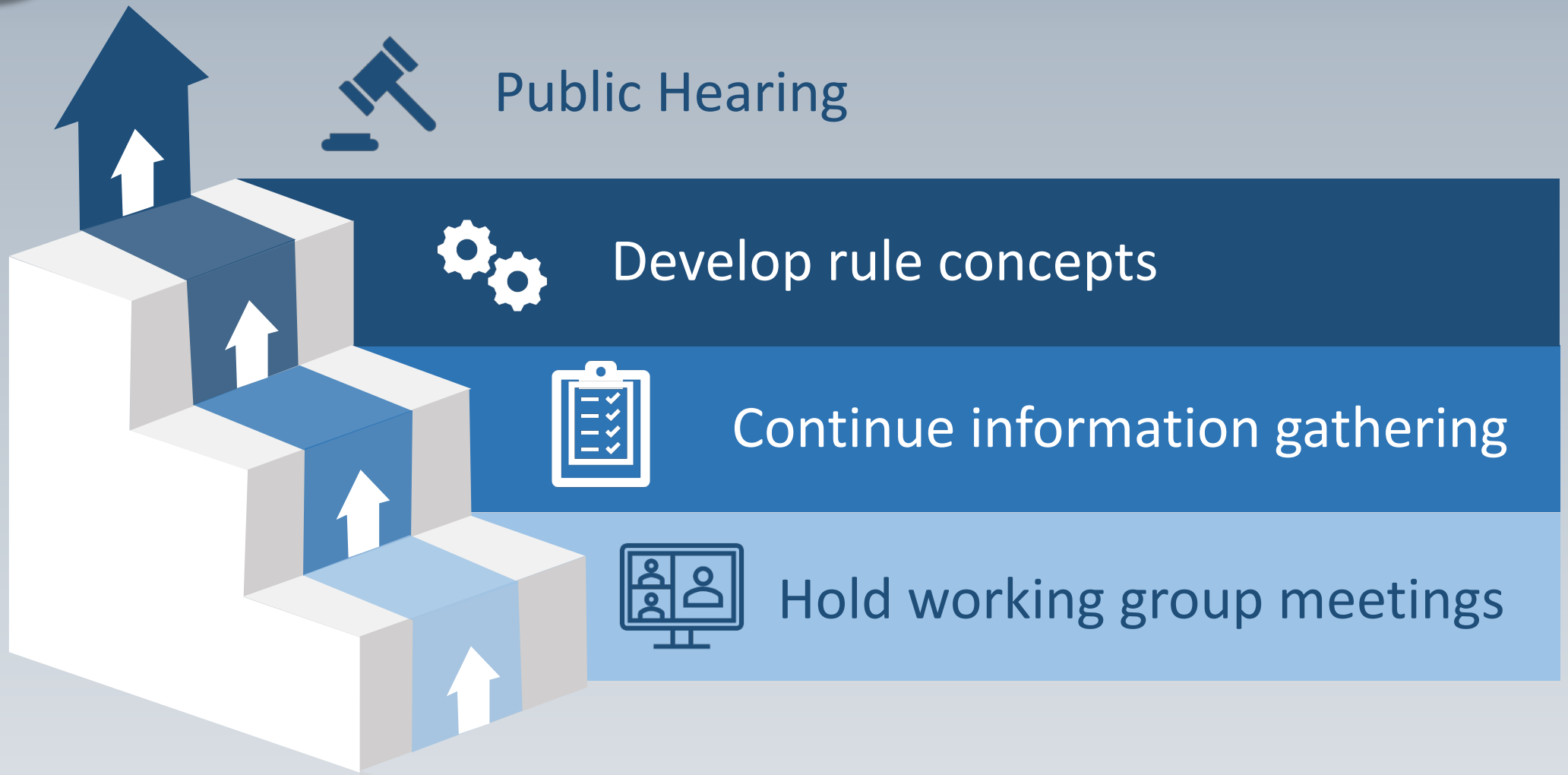
- Mobile fuelers have been operating with Phase I and Phase II vapor recovery systems for 20 years and meeting additional Phase II vapor recovery system specifications for vapor prevention for 13 years
- Rule 461 requires applicable stationary and mobile retail dispensing operations be equipped with CARB certified vapor recovery systems
- Use of both the Phase I and II vapor recovery systems provides criteria and toxic emissions reductions



Agenda Item # 4

Looking Ahead

Next Steps


Public Hearing
Develop rule concepts
Continue information gathering
Hold working group meetings

PARs 461, 219, 222, and PR 461.1
Staff Contacts

Please contact staff with any questions or comments

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