



Portable Equipment Regulations in the Capital Region



Wednesday February 14, 2024 • 12:30 PM - 2:00 PM



Portable Equipment Registration Program (PERP) and the Portable Engine Airborne Toxic Control Measure (ATCM)



What is PERP?

- Regulation effective September 17, 1997.
- Voluntary, fee-based program for portable equipment registration.
 - Statewide operation of portable equipment.
 - Reduce particulate matter (PM) emissions.
 - CARB sets requirements.
 - Local Air District permit authority and enforcement.
- California Code of Regulations, Title 13, sections 2450-2465.

What is Portable Equipment?

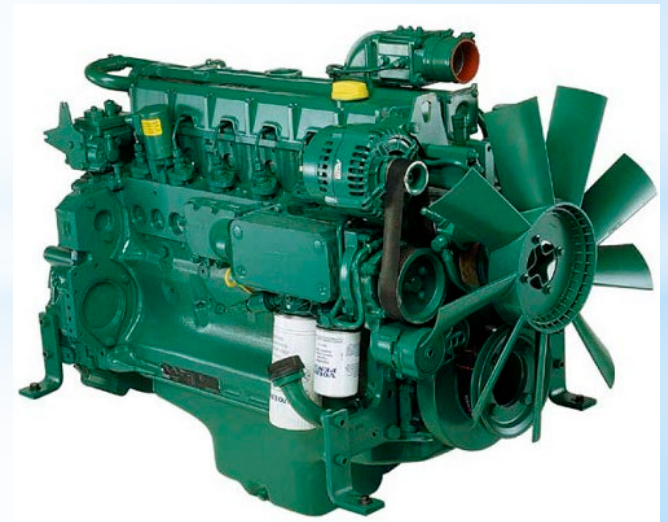
- Portable definition – CCR 13 § 2452(dd):
 - An engine or equipment unit must be designed and capable of being moved from one location to another.
 - No motive power.
 - Less than 12 consecutive months.
 - No foundation or stationary source operation.
 - No recurring operation each year.

Portable Equipment

- Portable equipment includes:
 - Auxiliary Engines.
 - Pile-Driving Hammers (Pile Drivers).
 - Equipment Units.
 - Tactical Support Equipment (TSE).
- Over 51,000 units in PERP:
 - 34,600 engines (including pile drivers).
 - 13,400 equipment units.
 - 3,400 TSE.

Portable Engines and Pile Drivers

- Engine definition – CCR 13 § 2452(k):
 - Piston driven internal combustion engine.
 - Engines 50 brake horsepower (bhp) and greater.
 - Diesel, Gasoline, Natural Gas, Propane.
- Pile Drivers:
 - One piston.
 - Diesel, Kerosene.



Portable Engines and Pile Drivers



Portable Engines

- Certified nonroad engines equipped with Emission Control Label.

Manufacturer

Serial Number

Model

CUMMINS INC. Assembled in CHINA CHINA EXPORT ONLY Date of Mfg: 2022-07-		Engine No. [REDACTED]	Ref No. TLD-250PPM-QSG12	Model K12	Fuel Rate at adv. HP/KW (mm3/st) 275	FR 21081	CR #272	
		Idle Speed (rpm) 950	Advised HP/KW 513 / 383 at 1900 rpm		Family NCDXL12.0AAA	STD/FEL	EPA	CARB
		Firing Order 153624	Timing T.D.C. ELECTRONIC		Category 130-560 kW	NOx		
		Valve lash cold 0.014 Int. 0.027 Exh. 0.010/L 721 /11.8	E.C.S. BCRJ10C/D0LTC		PM			
5-DIGIT-0014 K12 513/383/1900/100%CU03 BOS3	120	011279	EMISSION CONTROL INFORMATION: THIS ENGINE COMPLES WITH US EPA REGULATIONS FOR NONROAD AND STATIONARY EMISSIONS. FOR CALIFORNIA REGULATIONS FOR OFFROAD DIESEL ENGINES FOR MODEL YEAR 2022, ULTRA LOW SULFUR FUEL ONLY. SELECTED ASSEMBLY IS CONTACT-CUMMINS. CUMMINS SOLUTIONS, CHINA. TEL: 021-6111 0000 FAX: 021-6111 0000 WWW.CUMMINS.COM					

Year: 2022, Final Tier 4

Brake Horsepower Rating (bhp)

Engine Family Name (EFN)

Table 1. Off Road Compression - Ignition Diesel Engine Standards (NMHC + Nox/CO/PM in g/bhp hr.)

hp (kw)	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015+
≥ 50 (37) < 75 (55.5)				N/A ^(a) 6.9 (9.2) N/A N/A						5.6 (7.5) 3.7 (5.0) 0.30 (0.40)				3.5 (4.7) 3.7 (5.0) 0.22 ^(c)					3.5 3.7 0.02 ^(c)		
≥ 75 (55.5) < 100 (75)				N/A ^(a) 6.9 (9.2) N/A N/A						5.6 (7.5) 3.7 (5.0) 0.30 (0.40)				3.5 (4.7) 3.7 (5.0) 0.3				0.14 2.5 3.7 0.01 ^(b,d)			0.14 0.29 3.7 0.01 ^(b)
≥ 100 (75) < 175 (130) ^(a)			N/A ^(b) 6.9 (9.2) N/A N/A						4.9 (6.6) 3.7 (5.0) 0.22 (0.30)				3.0(4.0) 3.7 (5.0) 0.22					0.14 2.5 3.7 0.01 ^(b,d)			0.14 0.29 3.7 0.01 ^(b)
≥ 175 (130) < 300 (225) ^(a)		1.0 (1.3) ^(b) 6.9 (9.2) 8.5 (11.4) 0.40 (0.54)							4.9 (6.6) 2.6 (3.5) 0.15 (0.20)			3.0 (4.0) 2.6 (3.5) 0.15 ^(a)					0.14 1.5 2.6 0.015 ^(b,d)			0.14 0.3 2.6 0.01 ^(b)	
≥ 300 (225) < 600 (450) ^(a)		1.0 (1.3) ^(b) 6.9 (9.2) 8.5 (11.4) 0.40 (0.54)					4.8 (6.4) 2.6 (3.5) 0.15 (0.20)					3.0 (4.0) 2.6 (3.5) 0.15 ^(a)					0.14 1.5 2.6 0.015 ^(b,d)			0.14 0.3 2.6 0.01 ^(b,d)	
≥ 600 (450) < 750 (560) ^(a)		1.0 (1.3) ^(b) 6.9 (9.2) 8.5 (11.4) 0.40 (0.54)						4.8 (6.4) 2.6 (3.5) 0.15 (0.20)				3.0 (4.0) 2.6 (3.5) 0.15 ^(b)					0.14 1.5 2.6 0.015 ^(b,d)			0.14 0.3 2.6 0.01 ^(b,d)	
≥ 750 (560) ^(a)						1.0 (1.3) ^(b) 6.9 (9.2) 8.5 (11.4) 0.40 (0.54)						4.8 (6.4) 2.6 (3.5) 0.15 (0.20)					0.3 2.6 2.6 0.07 ^(b)			0.14 2.6 2.6 0.03 ^(b)	
> 750 ≤ 1207	Generators					1.0 (1.3) ^(b) 6.9 (9.2) 8.5 (11.4) 0.40 (0.54)						4.8 (6.4) 2.6 (3.5) 0.15 (0.20)					0.3 2.6 2.6 0.07 ^(b)			0.14 0.5 2.6 0.02 ^(b)	
> 1207	Generators					1.0 (1.3) ^(b) 6.9 (9.2) 8.5 (11.4) 0.40 (0.54)						4.8 (6.4) 2.6 (3.5) 0.15 (0.20)					0.3 0.5 2.6 0.07 ^(b)			0.14 0.5 2.6 0.02 ^(b)	

a. The PM standard for hand-start, air cooled, direct injection engines below 6 bhp may be delayed until 2010 and be set at 0.45 g/bhp-hr.

b. Standards given are NMHC/NOx/CO/PM in g/bhp-hr.

c. Engine families in the power category may alternately meet Tier 3 PM standards (0.3 g/bhp-hr) from 2008-2011 in exchange for introducing final PM standards in 2012.

d. The implementation schedule shown is the three-year alternate Nox approach. Other schedules are available.

e. Certain manufacturers have agreed to comply with these standards by 2005.

Note: This chart was converted into bhp units based on the chart at <http://www.arb.ca.gov/msprog/offroad/offroad.htm> 2/7/06.

	Tier 1		Interim Tier 4
	Tier 2		Final Tier 4
	Tier 3		

Off-Road Tier Standards

Tier Identification

- A PERP registration consists of:
 - Registration certificate.
 - Operating conditions.
 - Stickers.
 - Placard.
- Different placards for easy identification.



Tier 1



Tier 2



Tier 3



Tier 4

Portable Equipment Units

- Equipment unit definition – CCR 13§ 2452(m):
 - Equipment that emits PM10.
- Sometimes powered by a portable engine.
- No hazardous air pollutants (HAP) or incineration.

Portable Equipment Units

- Equipment units may include:
 - Abrasive blasters.
 - Concrete batch plants.
 - Sand and gravel plants.
 - Pavement crushing and recycling units.
 - Tub grinders and trommel screens.
 - Woodchippers.
 - Slurry Mixers.
 - Rock drills.



Portable Equipment Units



Tactical Support Equipment (TSE)

- TSE definition – CCR 13§ 2452(uu):
 - Portable engines, including turbines.
 - Owned by military installations.
 - Used in:
 - Combat/combat support.
 - Tactical/relief operations.
 - Training for such operations.
- Ringelmann 2 or 40% opacity.

Portable Engine ATCM Background

- Portable Engine ATCM became effective March 11, 2005.
 - Diesel Risk Reduction Plan.
- Only applies to portable diesel engines 50 bhp and greater.
- California Code of Regulations, Title 17, sections 93116-93116.5.

Portable Engine ATCM

- Reduces Diesel PM emissions by:
 - Limits older diesel engines from entering CA.
 - Fleet emissions reduction requirements.
- Fleet definition – CCR 17 § 93116.2(a)(17):
 - Large Fleet: Over 750 bhp from all engines.
 - Small Fleet: 750 bhp or less from all engines.

Portable Engine ATCM

- Phase-out schedule for all fleets.
- Fleet Average option for Large fleets only.
- Exempt from fleet requirements:
 - Low-use engines.
 - Emergency-use engines.
 - Level-3 Verified Diesel Emission Control Strategy (VDECS).
 - Only reduces PM for Fleet Average option.

Tier Phase-Out Schedule

Engine Certification	Engines rated 50 to 750 bhp		Engines rated >750 bhp
	Large Fleet	Small Fleet	
Tier 1	1/1/2020	1/1/2020	1/1/2022
Tier 2 built prior to 1/1/2009	1/1/2022	1/1/2023	1/1/2025
Tier 2 built on or after 1/1/2009	NA	NA	1/1/2027
Tier 3 built prior to 1/1/2009	1/1/2025	1/1/2027	NA
Tier 3 built on or after 1/1/2009	1/1/2027	1/1/2029	NA
Tier 1, 2, and 3 flexibility engines	December 31 of the year 17 years after the date of manufacture. This provision shall not apply to any engine operation before the effective date of this regulation		

Fleet PM Standard Requirements

- Must register all portable engines in PERP.

Compliance Date	Fleet PM Standard (g/bhp-hr)
1/1/20	0.10
1/1/23	0.06
1/1/27	0.03

Program Contact Information

Questions? Looking for more details?

Visit the PERP webpage for more information
and to subscribe to future notifications.

<https://ww2.arb.ca.gov/our-work/programs/portable-equipment-registration-program-perp>



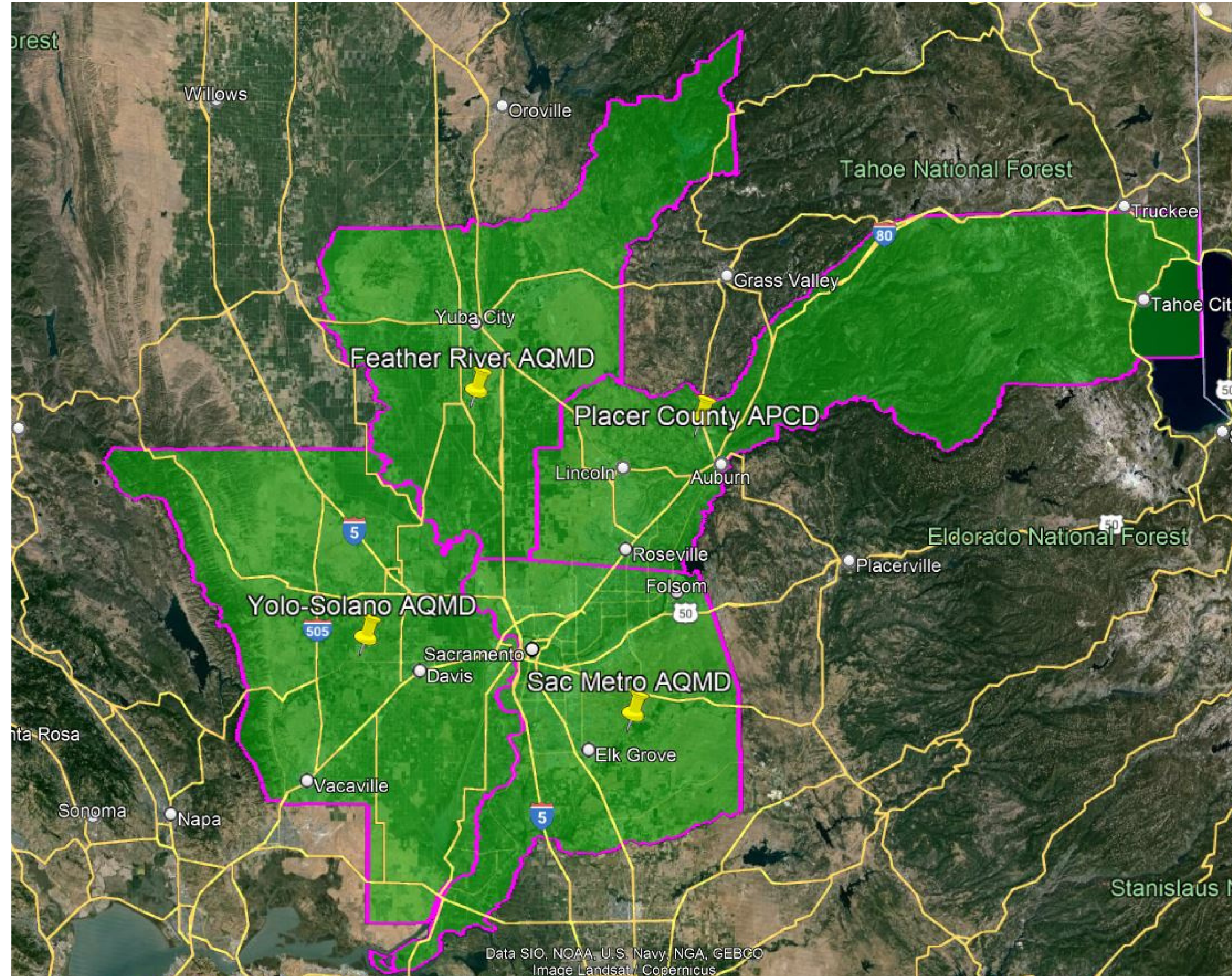
General Help

portable@arb.ca.gov

Portable Equipment Registration Program (PERP)

Agenda: 12:30 - 2:00 PM

- Welcome & Introductions
- PERP 101
- Air District Round table
- Open Discussion
- Announcements



The PERP World

- ARB run program that Districts enforce
- Program is voluntary, regulation and registration conditions are not
- Districts look at applicability and proper use first
 - How is the registered engine/unit being used
 - Is the user following all the conditions and requirements of the regulation and registration



The PERP World



Once registered:

- Read all registrations and conditions
- Receive and place the placard – be sure it is on the correct engine/unit
- All units powered by an engine over 50 hp require 2 registrations, one for the unit and one for the engine
- Notify the home district of the new or renewed registration
- Schedule the inspection
- Notify the district where any equipment unit is operating for more than 5 days
- Keep records
- Report as applicable

The PERP World

Prepare for the District Inspection:

- Read and understand all registrations and conditions
- Have applicable paperwork with the engine/unit
- Know the allowable uses of your engine/unit
- Know how it's being used on the jobsite
- Be able to turn it on, if requested
- Know how to turn on and read the hourmeter
- If your equipment unit is powered by an engine over 50 hp, have the engines registered information as well



PERP Powering a Stationary Source

PERP generators are allowed to provide primary or supplemental to Stationary Sources

- Example: Portable Engine at a building
- Section 2453(m)(4)(E) of PERP Regulation

PERP not allowed to operate as part of a Stationary Source

- Stationary Source determined by District
- Example: Concrete Batch Plant powered by PERP
- Section 2453(m)(4)(B) of PERP Regulation



Electrical Upgrades

PERP equipment is not allowed for power production (primary or supplemental) at a building, facility, stationary source, etc., except:

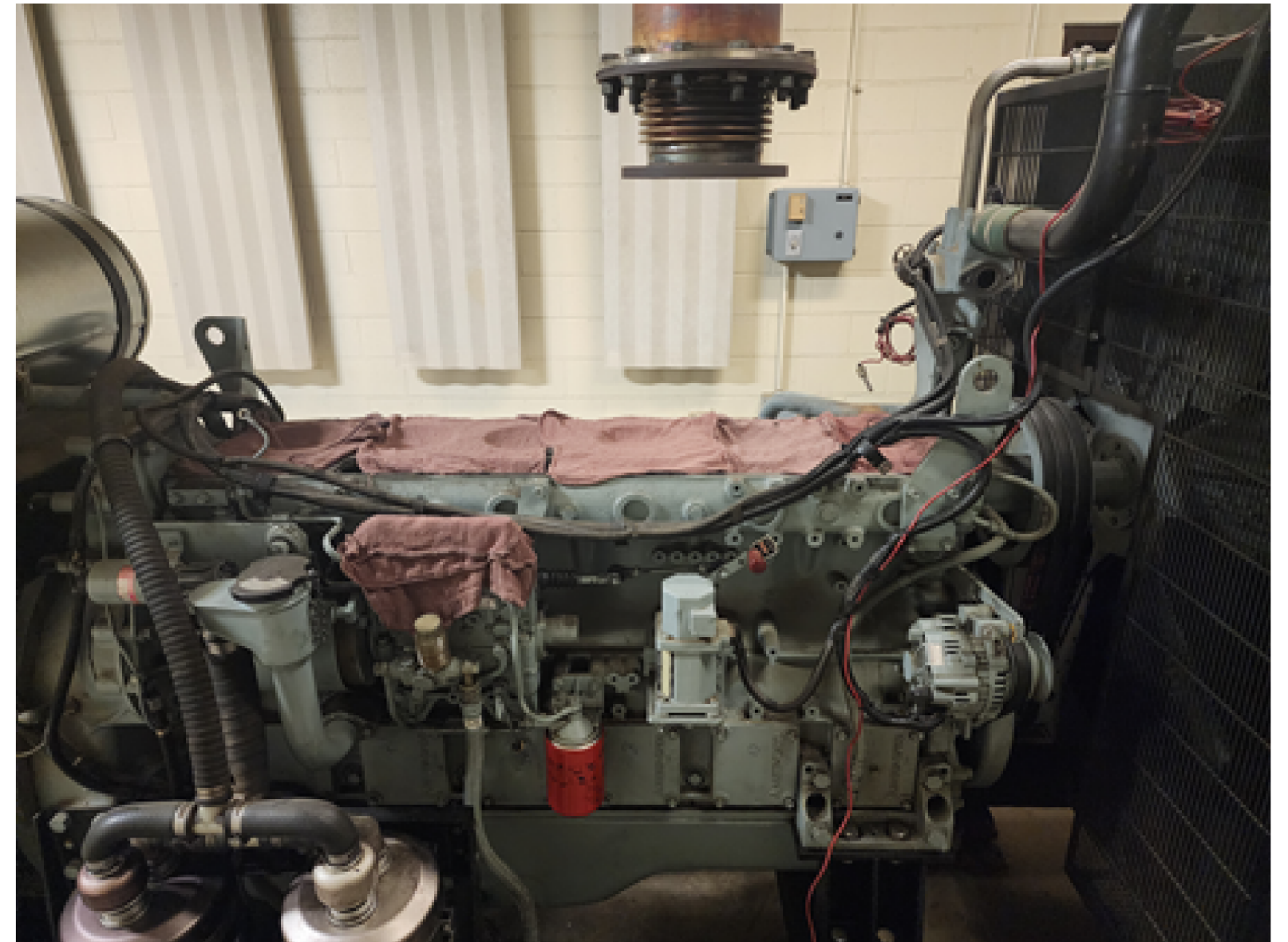
- Electrical upgrade operations
- Includes startup, shutdown, testing
- < 90 calendar days (may be extended)
- Section 2453(m)(4)(E)(3) of **PERP Regulation**



PERP In Place of Permitted Generator

District Permitted Generator Fails:

- Notify District within 72 hours
- Replacement Engine lower mass per unit emission rate
- PERP complies with Permit Conditions
- Maximum 180 days allowed or longer authorized in writing
- Cannot exceed 12 months
- Section 2453(m)(4)(E)(3) of **PERP Regulation**



Stationary Source Determination



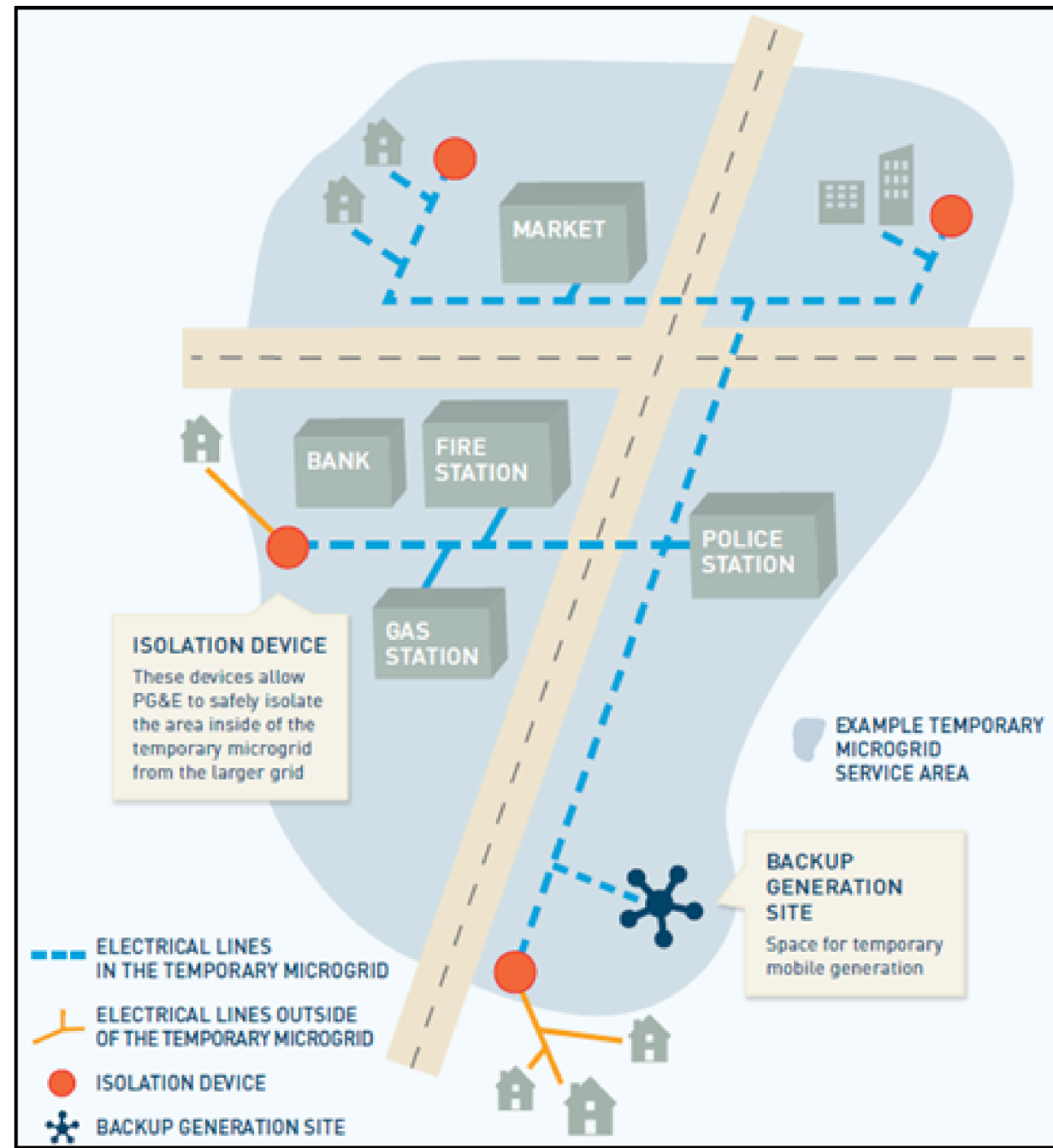
Despite the “portable” nature of PERP-registered equipment, stationary source permits are generally required when the equipment is:

- Operating as a “stationary source” or facility
- Fixed geographic location
- 12+ months of operation (including operational staging)
- Used in reoccurring operations (seasonal source)
- Supplementing an existing stationary source
- Equipment shares upstream or downstream process flow

Common Permitting Scenarios #1

Case Study – Electrical Generation “Microgrid”:

- Geographic location is preestablished
- Electrical interconnection infrastructure is permanently installed
- Applicant proposed the installation of multiple electrical generators (500 kW to 3 MW total)
- Microgrid system designed for a predetermined electrical demand
- Reasonably foreseeable need to use the portable equipment
- Use of portable equipment expected to take place over the course of multiple “seasons”



Common Permitting Scenarios #2



Case Study – Woody Biomass Chipping Operations:

- Process occurs at a single geographic location
- Portable equipment (engine + biomass grinder) remains on site indefinitely
- Material transported to processing site from multiple offsite locations
- Operation of the equipment is expected to take place throughout the calendar year
- District Authority to Construct / Permit to Operate required

Common Permitting Scenarios #3



Case Study – Reclaimed Asphalt Pavement (RAP) Grinder at Existing Asphalt Plant:

- Existing Permits to Operate for an asphalt batch plant include RAP grinding/processing equipment
- RAP is an upstream process to the asphalt batch plant
- Portable equipment requested to be temporarily brought on site to supplement facility's RAP processing capabilities
- Potential to conflict with permitted limits
- District Authority to Construct / Permit to Operate required

PERP Used by Agricultural Sources

- Previous slides discussed use of PERP at stationary sources - what about when the stationary source is “ag”
- Some districts have special provisions for equipment used exclusively in the growing of crops or raising of fowl or other animals
- Because the districts have slightly different rule requirements – very important to contact the District before operating at an ag source
- District may require traditional permit, local ag registration, or allow PERP
- Generally, no “right to farm” exemptions



Examples

- Using an engine to pump water (directly or with a generator driving an electric pump)
- Grinding of orchard material (tub grinder or horizontal grinders)
- Drilling (or reworking) a water well
- Generally, if the equipment is owned/operated by an independent company (e.g. rental company, contractor), it does not qualify as “ag exempt”, so the earlier slides related to allowable uses and restrictions related to PERP apply



Common Violations

- Operating a portable engine or equipment without Permit or PERP
- Installing or operating equipment unit(s) without a District Permit
- Incorrect stickers/registrations/placards/documents for registered PERPs
- Failure to comply with PERP conditions (opacity, recordkeeping, failure to notify district)
- Operating an Expired PERP
- Operating a PERP at a location for more than 12 months



Key Points

- PERP is *optional*; Permits are not
- Registration in PERP does not, by itself, demonstrate compliance with the regulation
- PERP does not replace the need for a District ATC/PTO where a permit is required
- If you are going to purchase, rent, or even hire a contractor that will use portable equipment that emits, you should contact your local district, early in the process
- Communication is Key



CONTACT INFO



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