

# MSTRS Locomotive Workgroup Update

## Chicago Meeting

### May 30, 2024

Matthew Payne (EPA) and Zhenying Shao (ICCT), co-chairs

# MSTRS Locomotive Workgroup Charge Questions

- What are the factors EPA should consider in developing emission standards for the existing fleet of locomotives when they are remanufactured or otherwise become new?
- What technologies should EPA consider in setting the next set of emission standards for freshly manufactured locomotives?

## Membership List and Organization

Chairs: Zhenying Shao, ICCT, Matthew Payne, EPA (formerly Francisco Donez R9)

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# Group Formation

- Kick-off Meeting was October 3, 2023
- Chapters Proposed from the January 19, 2024 Meeting
  - Locomotive Technology
  - Railroad Operations
  - Monitoring/Enforcement/Compliance
  - Environmental Justice
  - Public Health
- Chapter Lead General Duties
  - Organize author tasks and assignments, set milestones
  - Lead (or assign) document management and version control
  - Schedule and facilitate chapter team meetings as needed
  - Serve as main contacts with Workgroup co-chairs
  - Give updates and bring up issues/questions at monthly Workgroup meetings

## Initial Schedule

January	Chapter team kick-off, chapter leads assigned
February	Outline and planning
March	Research and data collection
April	Initial draft
May	Peer Review and feedback
June	Integration and Cohesion Final Review and Editing
Mid-July	Final draft for MSTRS and CAAAC to review
August	Final report approved by MSTRS and CAAAC

# Training Conducted

- EPA authority to regulate locomotive and key definitions: Nov 2023 (EPA)
- Virtual training- Locomotive 101: Jan 2024 (AAR, BNSF, UP)
  - Goal: Lay a foundation of background information on railroad operations for all members of the workgroup.
  - Topics:
    - How railroads operate
      - Yards versus line-haul
      - Class I railroads, class 2&3 railroads, passenger rail
    - Interchange of locomotives across railroads;
    - Remanufacturing and modernization of locomotives;
    - Alternative fuels
    - Current testing of non-diesel locomotives.

## Clean Air Act – Nonroad engines and vehicles

§7547(a)(5) Within 5 years after November 15, 1990, the Administrator shall promulgate regulations containing standards applicable to emissions from new locomotives and new engines used in locomotives. Such standards shall achieve the greatest degree of emission reduction achievable through the application of technology which the Administrator determines will be available for the locomotives or engines to which such standards apply, giving appropriate consideration to the cost of applying such technology within the period of time available to manufacturers and to noise, energy, and safety factors associated with the application of such technology.

<https://www.govinfo.gov/content/pkg/USCODE-2013-title42/html/USCODE-2013-title42-chap85-subchapI-partA-sec7547.htm>

## Definition of remanufacture

40 CFR 1033.901: [Remanufacture means one of the following:](#)

(1) (i) To replace, or inspect and qualify, each and every power assembly of a locomotive or locomotive engine, whether during a single maintenance event or cumulatively within a five-year period.

(ii) To upgrade a locomotive or locomotive engine.

(iii) To convert a locomotive or locomotive engine to enable it to operate using a fuel other than it was originally manufactured to use.

(iv) To install a remanufactured engine or a freshly manufactured engine into a previously used locomotive.

(v) To repair a locomotive engine that does not contain power assemblies to a condition that is equivalent to or better than its original condition with respect to reliability and fuel consumption.

(2) Remanufacture also means the act of remanufacturing.

See also 40 CFR 1033.640 [Provisions for repowered and refurbished locomotives](#)

# Report Drafting Process

- Finalize core chapter leads and teams by the end of January
- Chapter teams start with initial communications/meetings and drafting plans before next workgroup meeting
- Team leads and members determine tasks, milestones, etc.
- Chapter leads provide updates at monthly workgroup meetings
- Workgroup co-chairs available for questions, assistance
- Draft writing guidance

# Status as of April 1, 2024

- Chapters Sub-teams and Initial Schedule
  - Locomotive Technology
    - Michael Cleveland (Progress Rail) and William Carnegie (Wabtec)
    - Outline Developed
  - Railroad Operations
    - Theresa Romanosky (AAR)
    - Outline Developed
  - Monitoring/Enforcement/Compliance
    - Mary Arnold, (Civics United for Railroad Environmental Solutions)
    - List of potential issues identified
  - Environmental Justice (No lead)
  - Public Health (No lead)

## Initial Schedule

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June	Integration and Cohesion Final Review and Editing
Mid-July	Final draft for MSTRS and CAAAC to review
August	Final report approved by MSTRS and CAAAC

# Current Status as of May 30, 2024

- Chapters Sub-teams
  - Locomotive Technology
    - William Carnegie (Wabtec)
    - Sections Drafted ~75%
  - Railroad Operations
    - Michael Cleveland (Peaker Services)
    - Sections Drafted ~75%
  - Monitoring/Enforcement/Compliance
    - Mary Arnold (Civics United for Railroad Environmental Solutions)
    - Sections Drafted ~50%
  - Environmental Justice
    - Agreed to address within the previous three chapters as applicable
  - Public Health
    - Agreed to address within the previous three chapters as applicable

## Current Schedule

January	Chapter team kick-off, chapter leads assigned
February	Outline and planning
March-May	Research and data collection
Mid-June	<b>Initial draft</b>
End of June	Peer Review and feedback (2 weeks)
Mid-July	Integration and Cohesion Final Review and Editing (2 weeks)
End of July	Final draft for MSTRS and CAAAC to review (2 weeks)
End of August	Final report approved by MSTRS and CAAAC (1 month)

# Lessons Learned

- Document Access was sometimes problematic
  - Access to SharePoint, firewalls, incompatible systems
  - Access was improved over time
  - Work-arounds were developed
- EPA Teams meeting platform seemed functional for most participants
- Monthly meeting of the full group and weekly meetings of the Chapter sub-teams seemed appropriate
- Discussion sometimes expanded beyond the charge questions
- Effective moderation/organized meeting leads were helpful
- Writing needs to commence earlier to allow for better paced review
- Charge questions necessitated a technical background to effectively write chapter sections
- Knowledge sharing and education/training is essential to ensure consistency in understanding the background and system across the group
- Chapter leads shouldered a significant burden of work



# Conclusion

- The goal of the workgroup is to have a product to EPA on time by the end of August
- MSTRS members who wish to review and approve the draft document should plan time for mid-July to August.
- A special thanks to the Chapter leads and all those who have contributed their time and effort
  
- Questions?