



# NO<sub>x</sub> RECLAIM WORKING GROUP MEETING

JULY 13, 2017

SCAQMD

DIAMOND BAR, CA

# June 8, 2017 Working Group Meeting

- Draft Transition Plan framework presented
- Proposed concepts for Proposed Amended Rule 2001
  - No new facilities would be added to RECLAIM
  - No facilities can elect to enter RECLAIM
  - Concepts to expand
    - Mandatory exit provisions – more analysis needed
    - Opt-out provisions – reassess existing provisions (i.e., EGFs) and establish additional provisions
  - Proposed concepts for “Structural Buyer”

# Agenda

- Overview of analysis for types of facilities that would be in the first phase of a mandatory exit
  - Small facility analysis
  - Industry category breakdown
  - Equipment type details
  - Facility type details
- Landing rules outside of RECLAIM
  - Emission limit comparison
  - Implementation schedule
- Initial Recommendations
- Rulemaking Schedule (Short-Term Amendments)
- Next Steps

# Approach for Assessing Facilities for Mandatory Exit

- Initial analysis focuses on facilities with 5 or less pieces of RECLAIM source equipment
  - Still evaluating facilities operating more than 5 pieces of RECLAIM source equipment – will be presented at next Working Group Meeting
- Assessed RECLAIM facilities based on:
  - Facilities with no RECLAIM source equipment (Rule 219 NOx equipment only)
  - Facilities operating 1-5 pieces of RECLAIM source equipment (NOx major source, NOx large source, NOx process unit)
  - Categorized facilities by
    - Equipment types
    - Applicable command and control rules

# Overview of Approach

## 1<sup>st</sup> Step

- Analyze facilities with 0-5 pieces of equipment

## 2<sup>nd</sup> Step

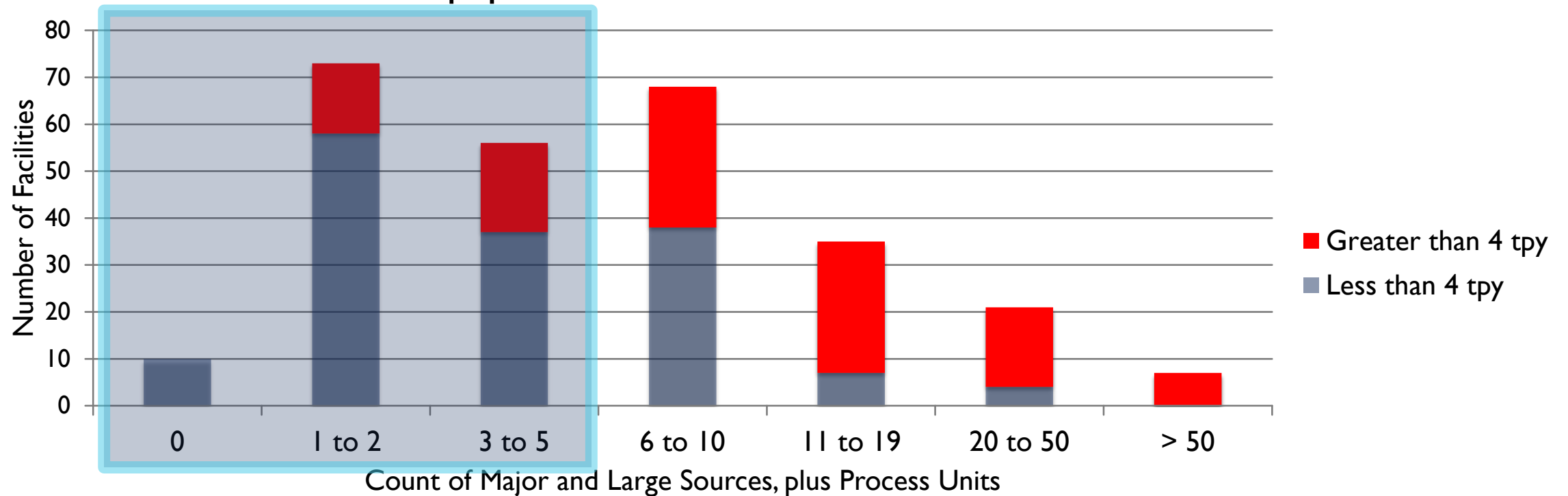
- Categorize RECLAIM source types and equipment categories device by device

## 3<sup>rd</sup> Step

- Identify facilities with all RECLAIM source equipment that:
  - meet corresponding Command & Control rule limits
  - currently have no Command & Control landing rules
- Identify facilities that would not be a part of this initial transition

# Initial Analysis of NOx RECLAIM Facility Equipment Counts

## Equipment Counts at RECLAIM Facilities



\*Counts are as of September 2016. Facilities with no major/large source, or process unit equipment have either shut down or still operate equipment not requiring a permit.

# Facility and Equipment Details

- 135 total facilities with  $\leq 5$  pieces of equipment analyzed (about half of all RECLAIM facilities)
  - 10 facilities with no RECLAIM source equipment (emissions from R219 equipment) or no RECLAIM emissions - Recommend mandatory exit for this group of facilities
  - 125 with RECLAIM source equipment
- Equipment descriptions, emission limits, and conditions extracted from most recently issued facility permits
- Facilities with  $> 5$  pieces of equipment will require more time

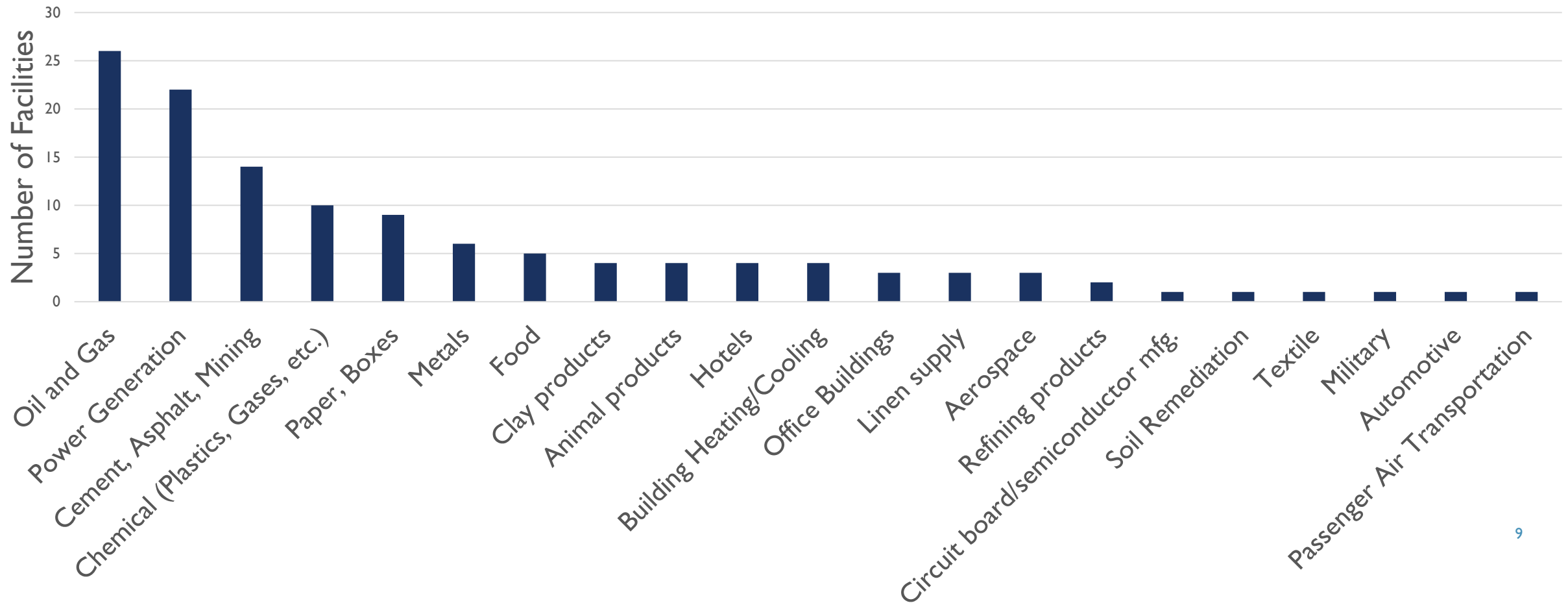


# Industry Category Breakdown

- Categorized NO<sub>x</sub> RECLAIM facilities with 1 – 5 pieces of RECLAIM source equipment by similar industries
- About 20 different industry categories
- Industry categories not likely to be used as a criteria for mandatory exit for facilities with  $\leq 5$  pieces of RECLAIM source equipment
- Will revisit industry categories when looking at facilities with  $> 5$  pieces of RECLAIM source equipment (next Working Group meeting)



# Industry Category Breakdown Facilities with 1-5 Pieces of Equipment



# Overview of Landing Rules Outside of RECLAIM

- Landing rules are existing command and control rules that correspond to RECLAIM equipment
  - Some RECLAIM equipment have complimentary command and control rules, while others do not
  - Some landing rules are representative of BARCT while others may need updating
- Staff assessed if the RECLAIM facility's equipment has a corresponding landing rule that represents BARCT

# Existing Command and Control Rules Evaluated

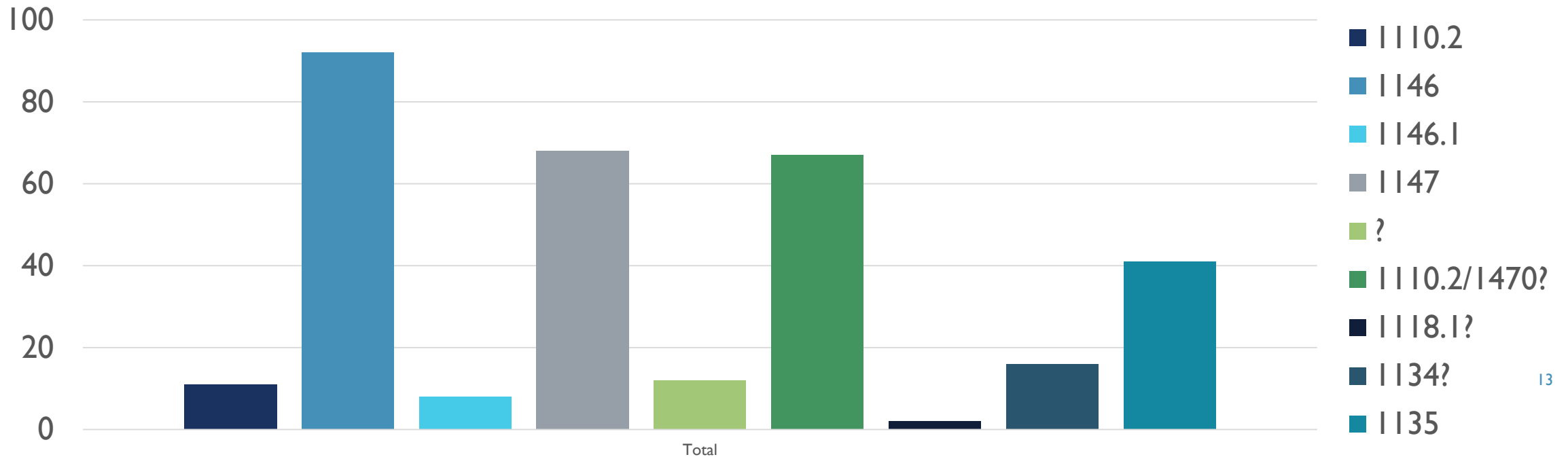
- Existing rules were evaluated based on the categories of RECLAIM equipment found for facilities with 1-5 pieces of equipment
  - Command and control rules that apply to RECLAIM equipment not found for facilities with 1-5 pieces of equipment were not included such as Rule 1109 (refinery boilers and heaters)
- The following command and control rules as potential landing rules were evaluated:
  - Rule 1110.2 (Internal Combustion Engines)
  - Rule 1146 (Boilers and Process Heaters)
  - Rule 1146.1 (Boilers and Process Heaters)
  - Rule 1147 (Miscellaneous NOx Sources)
  - Rule 1470 (Diesel Internal Combustion Engines)
  - Rule 1134 (Stationary Gas Turbines)
  - Rule 1135 (Electricity Generating Facilities)
- Rule 1146.2 was not included as it applies to the manufacturer

# RECLAIM Equipment without a Corresponding Landing Rule

- RECLAIM facilities with equipment without a corresponding landing rule or a landing rule that is not at BARCT may still be considered for a mandatory exit
  - Staff is assessing and will discuss at next Working Group Meeting
- Examples of RECLAIM equipment that currently have no corresponding command and control rules
  - Coke Calcining Equipment
  - Sulfur Recovery Unit/Tail Gas Unit Incinerators
  - Sodium Silicate Furnace

# Landing Rules Outside of RECLAIM

	1110.2	1146	1146.1	1147	No Rule	1470	PR 1118.1	1134	1135	Grand Total
Equipment Count of Potential Landing Rules	11	92	8	68	12	67	2	16	41	317



# Rule 1110.2

- Applicability
  - Gaseous and liquid-fueled engines
  - Low use and emergency engines exempted from emission requirements
- Rule 1110.2 emission limits (@15% O<sub>2</sub>)
  - 11 ppm
- RECLAIM BARCT level
  - 11 ppm for non-OCS units
- Implementation period from emission limit adoption
  - 3 – 9 years, depending on fuel type
- NO<sub>x</sub> emission levels in Rule 1110.2 provide a landing place as a RECLAIM facility transitions to Command and Control

# Rule 1146/1146.1

- Applicability
  - Boilers, steam generators, and process heaters greater than 2 MMBTU/hr
- Rule 1146/1146.1 emission limits (@3% O<sub>2</sub>)
  - 9 ppm for units 2 - 75 MMBTU/hr
  - 5 ppm for units above 75 MMBTU/hr
- RECLAIM BARCT level
  - 12 ppm for units from 2 – 20 MMBTU/hr
  - 9 ppm for units above 20 MMBTU/hr
- Implementation period from emission limit adoption
  - 3 – 6 years, depending on size and fuel type
- NOx emission levels in Rule 1146/1146.1 provide a landing place as a RECLAIM facility transitions to Command and Control

# Rule 1147

- Applicability
  - Miscellaneous NO<sub>x</sub> sources requiring a permit to operate (e.g., ovens, kilns, furnaces, dryers, afterburners, thermal oxidizers)
- Rule 1147 emission limits (@3% O<sub>2</sub>)
  - 30 – 60 ppm, depending on equipment type and process temperature
- RECLAIM BARCT level
  - 30 – 45 ppm, depending on equipment type
- Implementation period from emission limit adoption
  - 3 – 15 years, depending on equipment type and date of manufacture
- NO<sub>x</sub> emission levels in Rule 1147 provide a landing place as a RECLAIM facility transitions to Command and Control



# Implementation Schedules for Existing Command and Control Rules

- RECLAIM source equipment not at BARCT may be given more time to comply with respective command and control rules
- Consideration of implementation timeframes
  - Considering implementation timeframe allowed from rule adoption/amendment to the compliance date
  - Shorter implementation timeframe may be needed if command and control rule allowed a longer implementation timeframe (technology forcing rules)
  - Other?

# Rules 1470, 1134, 1135, and Proposed Rule 1118.1

- Rule 1470 applies to diesel particulate matter – still evaluating implications of Rule 1470 (emergency standby engines)
- Rules 1134 (gas turbines), and 1135 (electricity generating facilities) do not reflect current BARCT levels
  - Currently not landing place rules
  - Can either amend rules or create a new rule as the industry category or equipment category exits (discuss at next Working Group Meeting)
- Proposed Rule 1118.1 (non-refinery flares) is under development – will be a landing place upon adoption

# Permitted Emission Limits

- Emission limits (which include default emission factors for certain equipment) from RECLAIM permits were compared to those in existing command and control rules
- 142 pieces of equipment have no Reg. XI rules or rules that have not been amended in recent years (e.g., gas turbines, emergency ICEs, Rule 1135 for EGFs) – no comparison can be made at this time

Emission Limits on RECLAIM Permits at or below C & C?	Count of RECLAIM Source Equipment
YES	63
NO	112
No Corresponding Command and Control Rule to Compare Emission Limit in RECLAIM Permit	142
TOTAL	317

# Considerations – Mass Emissions vs. NO<sub>x</sub> Concentration

- Process Units outside of RECLAIM
  - 146 process units analyzed out of 317 total RECLAIM sources of this sub-universe
  - Currently, mass emissions are calculated with fuel usage and by using default emission factors that are much higher than in command and control rules
  - Lower emission factors can be utilized by demonstration with a source test
  - Many process units are not at BARCT, but may be given additional time to comply
  - Outside of RECLAIM, concentration limits would replace mass-based emissions

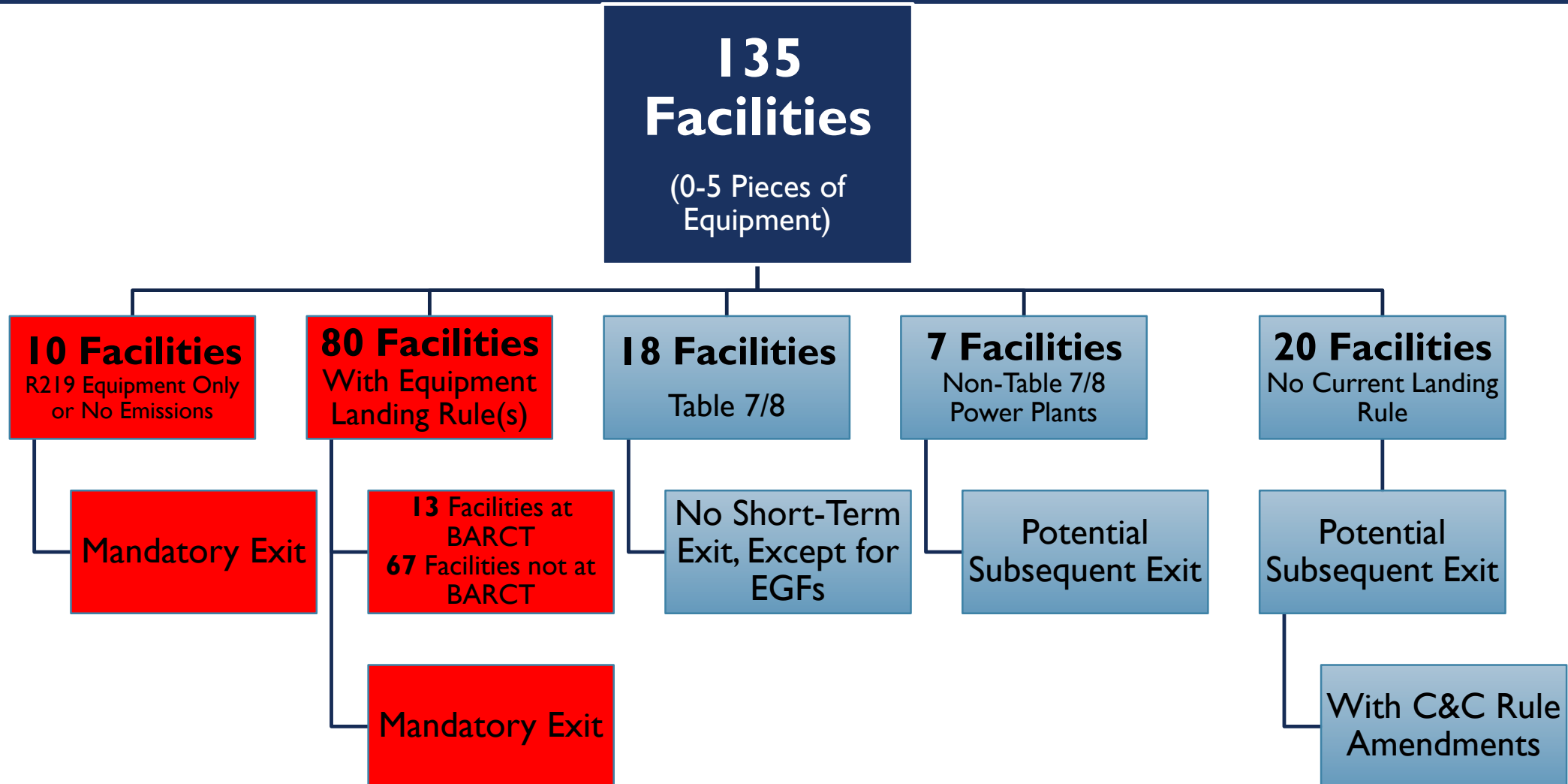
# Recommendations

- 90 facilities would be candidates for a mandatory exit from the RECLAIM program
  - 10 facilities with Rule 219 equipment emissions only or with no emissions
  - 13 facilities with a landing rule that are at BARCT
  - 67 facilities with a landing rule that are not at BARCT
    - Consideration to be given to those facilities that need additional time to comply with command and control regulations once exited from the RECLAIM program
  - Cumulatively, this group would not have a significant impact on future emission reductions (i.e., 5 tpd by 2025)
- Other facilities would require additional analysis (next Working Group Meetings)

# Initial Concepts for Mandatory Exit for RECLAIM

- Table 8 facilities
  - In addition, other facilities owned by Table 8 facilities
- Facilities that operate equipment that would be subject to command and control rules that need updated amendments or brand new rules
- High emitting facilities
- Outer Continental Shelf (OCS) facilities
- Facilities not meeting the criteria for the first wave of facilities that would have a mandatory exit

# Summary of Initial Facility Assessment



# Proposed Amended Rule 2001 Schedule

- Public Workshop for Proposed Amendments to Rule 2001
  - December 2017
- Public Hearing for Proposed Amendments to Rule 2001
  - March 2, 2018



# Next Steps

- Evaluation of facilities with >5 pieces of equipment and other categories of facilities discussed in presentation
- Continue with evaluation of smaller facilities (market behavior, trading activity)
- Continue with re-assessment of opt-out provisions for EGF's
- Sub-topic working group meeting will be convened for New Source Review considerations
- Continue with the development of the RECLAIM Transition Plan
- Identify any new issues

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