



Notice of Final Rulemaking
Rule 313: Incinerators, Burn-Off Ovens, and Crematories

Effective Date: **May 9, 2012**

Maricopa County Air Quality Dept.
Planning & Analysis Division
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Phoenix, AZ 85004
[Email us](#) or
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NOTICE OF FINAL RULEMAKING
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 313: INCINERATORS, BURN-OFF OVENS, AND CREMATORIES

PREAMBLE

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| <u>1.</u> | <u>Rule affected</u>
Rule 313: Incinerators, Burn-Off Ovens, and Crematories | <u>Rulemaking action</u>
Amend |
| <u>2.</u> | <u>Statutory authority for the rulemaking:</u>
Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480
Implementing statute: A.R.S. § 49-112 | |
| <u>3.</u> | <u>Effective date of the rule:</u>
Date of adoption: May 9, 2012 | |
| <u>4.</u> | <u>List of all previous notices appearing in the Register addressing the rulemaking:</u>
Notice of Rulemaking Docket Opening: 18 A.A.R. 23, January 6, 2012
Notice of Proposed Rulemaking: 18 A.A.R. 7, January 6, 2012 | |
| <u>5.</u> | <u>Name and address of department personnel with whom persons may communicate regarding the rulemaking:</u>
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| <u>6.</u> | <u>Explanation of the rule, including the department’s reasons for initiating the rulemaking:</u>
Background: Rule 313 limits particulate emissions from incinerators, burn-off ovens, and crematories. Rule 313 was revised on September 22, 2004, to update rule language and recognize newer technology, a continuous opacity monitoring system (COMS), which could permit incinerator operation at night. | |

The new COMS requirement for nighttime operations was included in the 2004 routine permit renewal for an industrial electric motor/engine reclamation business. This stakeholder did not have a COMS installed on the stack of their parts reclamation unit, which is a specific type of burn-off oven. The new permit requirement to install a COMS for nighttime operations prohibited the stakeholder from using their parts reclamation units for 16–18 hours per day, which their operations required to avoid product deformation. Consequently, they requested the Maricopa County Air Quality Department (department) approve their nighttime operations without installing a COMS. The stakeholder reported that a 10 inch or greater stack diameter was necessary for the COMS installation and their parts reclamation unit stack diameter was smaller than the 10 inches required for this COMS installation. Their stack was not out of the ordinary because most typical parts reclamation unit stack diameters are reported to be less than 10 inches in diameter. Since the stakeholder's parts reclamation unit stack was smaller than that required for a COMS installation, such a provision would require extensive retrofitting operations and a custom engineering application, which could impose significant additional costs for their business.

In their request to the department, the stakeholder provided data from performance tests conducted on their parts reclamation unit by Applied Environmental Consultants, Inc. (AEC) on June 25, 2009. Such performance test data demonstrated that operating a parts reclamation unit for 16–18 hours per day without a COMS produced no visible emissions (well below the 20% opacity limit required by the rule). The stakeholder indicated that these results, i.e., no visible emissions from nighttime operations without a COMS, were comparable to those from tests conducted on some 6,000 similar units, as reported by the manufacturer.

After the department reviewed the stakeholder's performance test data, the department determined that nighttime operations by the stakeholder, if conducted without a COMS, would not interfere with previously achieved emissions reductions, provided two conditions were met: (1) the stakeholder produce no visible emissions during the nighttime operations or during performance testing and (2) the stakeholder conduct visible emissions observations at least once per hour during each nighttime combustion cycle. On November 4, 2009, the department issued Conditional Order 2009-002, which allowed the stakeholder to conditionally operate its parts reclamation unit after sundown without requiring the installation of a COMS, a deviation from the requirements of Maricopa County Air Pollution Control Regulation III, Rule 313, Section 304.1. Conditional Order 2009-002 will expire on November 4, 2012.

In March, 2010, the department began a rulemaking process to revise Rule 313 to allow parts reclamation units with stack diameters less than 10 inches to operate after sundown without installing a COMS. In April, 2010, the U.S. Environmental Protection Agency (EPA) proposed three new combustion rules for major source boilers and commercial and industrial solid waste incinerator (CISWI) units, which would establish new source performance standards (NSPS) and emission guidelines (EG) for new and existing combustion sources. These proposed EPA rules, regulating the emissions of particulates and hazardous air pollutants (HAPS) from combustion operations under §§112 and 129 of the Clean Air Act, had the potential to affect Maricopa County Rule 313, because these rules contained more stringent limits and requirements for combustion sources than that required in Rule 313. In February, 2011, after reviewing more than 4,800 comments received during its rulemaking public comment period, the EPA determined that smaller burn-off ovens, such as parts reclamation units, were unfairly grouped with larger

commercial incinerators and boilers and would not be subject to the proposed EPA combustion rules. Consequently, the department resumed the rulemaking process for Rule 313.

During the rulemaking process, the department held one public workshop and received two written comments from stakeholders. The issues that were raised and discussed during this rulemaking process can be categorized as follows:

- Documentation required to determine the absence of visible emissions during nighttime operations
- Conditions to qualify for an exception from the COMS requirement
- Definition of “pyrolysis/combustion unit”
- Requirements for COMS unit calibration

Details about these issues are described below. Following such discussion is a description of the amendments to Rule 313.

Issues Raised and Discussed During This Rulemaking Process:

Documentation Required to Determine the Absence of Visible Emissions During Nighttime Operations: During the public workshop, stakeholders asked the department to clarify how a source should document the absence of visible emissions during nighttime operations. Stakeholders expressed concern because opacity measurements, determined with EPA Reference Method 9, are difficult to collect during the nighttime.

The department considered the issue and included in Rule 313 the updated EPA Reference Method 9, which measures opacity, and EPA Reference Method 22, which measures the presence or absence of visible emissions. Also, the department clarified the condition requiring an operator monitor visible emissions at night by cross-referencing such requirement to the section in Rule 313 that specifies EPA Reference Method 22.

Conditions to Qualify for an Exception From the COMS Requirement: During the public workshop, stakeholders asked the department what equipment was required in order to qualify as an exception from the COMS requirement.

The department considered the question and included in Rule 313 a provision that a parts reclamation unit may be operated at nighttime without a COMS provided the following conditions are met: there are no visible emissions during nighttime operations, visible emissions observations are conducted at least once per hour during each nighttime combustion cycle, the parts reclamation unit is operated and maintained in accordance with the manufacturer’s operations and maintenance manual, and the parts reclamation unit has an inside stack diameter of less than 10 inches.

Definition of “Pyrolysis/Combustion Unit”: In June 2011, a stakeholder who is a producer of commercial fuel oil recovered from used motor oil filters with a process of pyrolysis incineration, submitted a formal request to the department proposing that pyrolysis incineration should not be subject to Rule 313, because pyrolysis incineration combusts with very small quantities of air.

The department considered the request and determined that pyrolysis incineration has been and will continue to be subject to Rule 313. Historically, the department has interpreted the definition of “incineration” to include pyrolysis incineration; therefore, pyrolysis incineration was subject to Rule 313. To clarify this issue, the department added a definition of “pyrolysis/combustion unit” to Rule 313, which corresponds with EPA’s definition of a “[municipal waste] pyrolysis/combustion unit” (60 FR 65382, December 19, 1995).

Requirements For COMS Unit Calibration: During this rulemaking process, stakeholders asked if deleting the administrative requirement in Section 400 eliminated requirements to properly install a COMS, which includes calibration and operation for a conditioning period of at least 168 hours minimum and a testing period of 168 hours before any nighttime operations are performed.

The department considered the question and determined that eliminating the administrative requirement, i.e., the compliance schedule, only eliminates a redundancy in the previous version of the rule. The requirements to properly install, calibrate, operate, and test a COMS remain in Rule 313.

Description of Proposed Amendments: The amendments approved in Rule 313 can be categorized as follows:

- To revise parts reclamation unit nighttime operation requirements
- To revise the requirements for filing an Operations & Maintenance (O&M) Plan
- To revise administrative requirements
- To revise monitoring and records requirements

Details about these proposed amendments are described below.

To revise parts reclamation unit nighttime operation requirements: The amendments made the following changes to Rule 313:

- Section 215 – Parts Reclamation Unit: Added a new definition, for “parts reclamation unit”. The term as defined is specific to only one type of burn-off oven, a parts reclamation unit with a stack diameter less than 10 inches that is used only to remove paints, lacquers, and varnishes from items (e.g., tools and equipment) so that these items can be reconditioned and reused.
- Section 304 – Nighttime Combustion: Delineated the different requirements for nighttime operations in an incinerator, crematory, or burn-off oven as opposed to the parts reclamation unit. A COMS is required to be installed when operating incinerators, crematories, or burn-off ovens at night, whereas a parts reclamation unit operating during the nighttime is not required to operate with a COMS installation. However, hourly visible emissions observations must be made of the parts reclamation unit operating during the nighttime to confirm that there are no visible emissions from the operation.
- Section 503 – Nighttime Combustion: Revised recordkeeping requirements incorporating additional recordkeeping requirements for nighttime operations without a COMS.

To revise the requirements for filing an Operation & Maintenance (O&M) Plan: These amendments made the following changes to Rule 313:

- Section 305 – Requirements for Air Pollution Control Equipment: Added and updated requirements for sources subject to filing an O&M Plan for an Emission Control System (ECS). The additions provide greater O&M Plan consistency and update this rule to be consistent with other department rules.

To revise administrative requirements: The amendments made the following changes to Rule 313:

- Section 401.1 – Compliance Schedule: Deleted an obsolete requirement and a transpired date for the requirement.
- Section 401.2 – Compliance Schedule: Deleted the redundant listing of a requirement (COMS calibration) referenced in another section of the rule (Section 507.2).

- Section 501 – Recordkeeping: Revised the daily recordkeeping requirements for incinerators, burn-off ovens and crematories operations.
- Section 506 – Performance Test Results: Added recordkeeping requirements for the performance test results.

To revise monitoring and records requirements: The amendments made the following changes to Rule 313:

- Section 502 – Opacity Observations: Revised opacity observation recordkeeping requirements. These requirements are specific to EPA Reference Method 9 and are modified by EPA Reference Method 203B.
- Section 507 – Compliance Determination – Test Methods: Corrected and updated the compliance determination test methods including the opacity and visible emissions tests methods 9 and 22 respectively.
- Section 508 – Test Methods Incorporation by Reference: Added the incorporation by reference or additional EPA Reference Methods.

The department also corrected typographical or other clerical errors; made minor grammatical changes to improve readability or clarity; modified the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; and made other minor changes of a purely editorial nature. As these amendments do not alter the sense, meaning, or effect of the rule, they are not described in detail here, but can be readily discerned in the “strikeout and underline” version of the rule contained in Item #17 of this notice.

7. Demonstration of compliance with A.R.S. § 49-112:

A.R.S. § 49-112(A): When authorized by law, a county may adopt a rule, ordinance, or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all the following conditions are met:

- a. The rule, ordinance or other regulation is necessary to address a peculiar local condition.
- b. There is credible evidence that the rule, ordinance or other regulation is either:
 - (1) Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.
 - (2) Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulations.

Revisions to Rule 313 were necessary to address the EPA-designated serious nonattainment for the PM₁₀ 24-hour standard for the Phoenix Area. This serious nonattainment status is peculiar to the Phoenix area local conditions because Maricopa County has failed to meet the National Ambient Air Quality Standards for both ozone and particulates therefore makes A.R.S. § 49-112(A)(1) and (2) applicable to this rule revision.

The department revised Rule 313 to reduce PM₁₀ emissions in Maricopa County, which will help alleviate the serious health threat and associated health consequences resulting from poor air quality while at the same time remove unnecessary restrictions on business operations.

8. Reference to any study relevant to the rule that the department reviewed and either proposes to rely on in its evaluation of or justification for the rule, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:

User Manual: U.S. Environmental Protection Agency's Continuous Emission Monitoring Cost Model, Version 3.0.
This document may be found electronically at www.epa.gov/ttnemc01/cem/userman.pdf;

The EPA's Particulate Matter (PM) Health Effects Research Center Program, prepared by PM Centers Program staff, January 2002: Particulate Matter Research Centers Program Advisory Report: An SAB Advisory Report.

U.S. EPA, "The Benefits and Costs of the Clean Air Act 1990 to 2010," Chapter 5, "Human Health Effects of Criteria Pollutants," Table 5-1, Report to Congress, November 1999. Document available by contacting the person listed in Item #5 of this notice.

Applied Environmental Consultants, Inc. (AEC), Performance test data conducted on 6000 operating parts reclamation units, June 25, 2009. Document available by contacting the person listed in Item #5 of this notice.

9. Showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision:

Not applicable

10. Summary of the economic, small business, and consumer impact:

A. Rule Identification

This rulemaking revised Rule 313 (Incinerators, Burn-Off Ovens and Crematories).

B. Summary

The amendments to Rule 313 provide additional flexibility for the operation of a parts reclamation unit and should reduce confusion, improve understanding and readability of the rule. Even though the amendments provide additional options for burn-off oven operations, at the same time the provisions maintain compliance with federal and state laws. Details of the amendments found in this rule are described under Item #6 of this notice.

Maricopa County businesses potentially affected by these rule revisions are those that use burn-off ovens in metal salvage operations or remove non-metallic coatings from metal parts by the application of heat. The incremental costs of combustion operations for the regulated community could be significantly decreased by these rule amendments. The benefits offset the minimal increases in costs of operations that are required by the amendments. Minimal cost increases include additional performance testing for facilities that chose to operate during the night without the required COMS. The costs of the additional performance tests required for both the regulators and the facility are minimal compared to the savings realized by the business that can operate at night without purchasing the previously required COMS unit. The net effect of savings from the elimination of the COMS purchase and the costs of additional performance test requirements equal cost savings for the facilities. Also, man-hours required for monitoring additional performance tests and recordkeeping are not significantly increased for the regulator's inspectors and test engineers as they are already conducting these inspections and tests in the field.

C. Costs

Use of burn-oven incinerators during nighttime operations is voluntary and inclusion of this option in the county rule led to the 2004 Rule 313 revisions. In order to assure that continuous compliance with emission standards during nighttime combustion are maintained, the COMS requirement was introduced.

Costs of the COMS

The costs to purchase a COMS unit are estimated at \$25,000 and do not include the additional costs incurred for routine monitoring and initial installation. These additional costs total \$10,000-\$25,000 during the first year.

Employee hourly costs to maintain the COMS unit each year are estimated at 8-10 man hours per week and training to operate and calibrate the COMS is estimated at \$1800 per employee; (this includes travel, accommodations and a 2-day training course). Cost information was obtained from an EPA document entitled "User Manual: U.S. Environmental Protection Agency's Continuous Emission Monitoring Cost Model, Version 3.0".

This revised Rule 313 amends the nighttime combustion option and provides greater flexibility for the parts reclamation unit operators that chose to operate at night without installing a COMS. The facility savings includes: (1) costs of the COMS unit estimated to be in excess of \$40,000.00 and (2) facility staff, who do not have to be trained to operate and maintain the COMS monitor. The amount of time required to train employees to monitor and keep records of nighttime operations requires approximately the same amount of time (labor hours) to train employees to operate and monitor a COMS unit. Labor-hours required for both options cancel resulting in no discernible changes in facility costs incurred. Overall, the financial benefits or savings to the business are significant yet there are negligible changes in personnel costs to the facility or society to implement this amendment.

Specifically this rule requires only a small amount of man hours daily per facility to manually collect records to replace the COMS monitoring. Estimated labor-hours are 1–2 hours per week averaged over a year. The additional 1-2 weekly hours needed for recordkeeping is offset by the of 8-10 hours per week savings from eliminating the need for COMS maintenance. Labor costs are estimated at \$16-\$30 per hour depending upon the classification of the employee who performs the recordkeeping or maintenance. The estimated savings in labor range from \$4,500–9,000 per year in addition to the savings of the initial COMS purchase and installation.

The department's compliance costs (regulators) will not change significantly as there are currently inspectors in the field visiting these sources, monitoring recordkeeping and conducting performance tests. The increase in department workload for performance testing is minimal and the facility will save costs by the equipment cost reduction and labor cost reductions.

D. Emissions

Crematories are not affected by this rule revision because human and animal crematories are incinerators that are not permitted to combust during the nighttime without a COMS unit. Only parts reclamation units are permitted to operate at night.

The overall intent of the CAA provisions is that section 129 combustion rules apply mostly to devices conventionally regarded as incinerators, that is, devices combusting wastes in order to destroy the wastes. For purposes of promulgating regulations, it is particularly important to distinguish between a commercial and industrial solid waste incinerator that destroys wastes and a parts reclamation unit whose function is to clean residual materials off of various metal parts, for salvage and then are reused. Less than 20 facilities with burn-off ovens have permits in Maricopa County and none of those facilities are total destruction waste incinerators, rather they are burn-off oven units or parts reclamation units that are intended for salvage purposes only. These latter parts reclamation units are typically small (<1 MMBtu/hr) combustion units that are used to clean residual materials off of various metal parts, which are then reused. These small parts reclamation units are found to emit minimal emissions. The Maricopa County 2008 periodic PM₁₀ emissions inventory that was developed to

meet requirements set forth in Title I of the Clean Air Act Amendments of 1990 (CAAA) estimates that emissions in Maricopa County reported from all types of facilities with incinerators is 0.06 tons for a year or 120 lbs. of emissions total for the year.

E. Health Impacts

No health impacts are anticipated as the rule merely provides flexibility in how compliance with existing standards is demonstrated for parts reclamation units.

F. Potential Impacts to Small Business

The Maricopa county business community potentially affected by this rule revision are those business that use parts reclamation units in metal salvage operations to remove non-metallic coatings from metal parts. These parts reclamation units are considered to consistently produce minimal emissions due to the fact these sources are small and because of the type of operation. The reclamation process of removing outer materials from used parts and/or cleaning the used parts does not require the extreme conditions associated with waste disposal combustion. The materials removed from the covering of these used parts include paints, plastics, and polymers. This rule revision decreases business expenses while at the same time keep labor costs consistent.

11. The name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact:

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12. Description of the changes between the proposed rule, including supplemental notices and final rule:

No changes were made to the proposed rule

13. Summary of the comments made regarding the rule and the department response to them:

No comments were received during the comment period

14. Any other matters prescribed by statute that are applicable to the specific department or to any specific rule or class of rules:

Not applicable

15. Incorporations by reference and their location in the rule:

EPA Reference Methods, American Society for Testing and Materials (ASTM) standards and other documents incorporated by reference in Rule 313:

Section 507.1: EPA Methods 1 through 5, or the EPA equivalent methods.

Section 507.2: EPA Performance Specification #1 (40 CFR 60, Appendix B).

Section 507.3: EPA Reference Method 9 as modified by EPA Reference Method 203 B.

Section 507.4: EPA Reference Method 22.

16. Was this rule previously an emergency rule?

No

17. Full text of the rule follows:

REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 313
INCINERATORS, BURN-OFF OVENS AND CREMATORIES
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Revised 07/13/88
Revised 04/07/93
Revised 09/22/04
Revised xx/xx/xx

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 313
INCINERATORS, BURN-OFF OVENS AND CREMATORIES

SECTION 100 – GENERAL

- 101 PURPOSE:** To ~~establish standards for~~ limit particulate emissions from incinerators, burn-off ovens and crematories. and to limit particulate emissions from burning in these types of units.
- 102 APPLICABILITY:** This rule applies to the following types of equipment and activities:
- 102.1** All incinerators except ~~the incinerators~~ those subject to:
- a.** Resource Conservation and Recovery Act (RCRA) : Subtitle C; or
 - b.** Maricopa County Rule 317 (Hospital/Medical/Infectious Waste Incinerators) and of the Maricopa County Air Pollution Control Regulations waste or to Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction Is Commenced After June 20, 1996 (40 CFR Part 60, Subpart Ec); or
 - c.** Standards of Performance for Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001(40 CFR Part 60, Subpart CCCC); or
 - d.** Emissions Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units that Commenced Construction On or Before November 30, 1999 (40 CFR Part 60, Subpart DDDD).
- 102.2** Burn-off ovens used in metal salvage operations or used to remove nonmetallic coatings from metal parts by the application of heat and that meet at least one of the following conditions:
- a.** ~~Charge burning~~ combustion capacity of greater than 25 lb. per hour; or
 - b.** Internal oven volume greater than 1 cubic yard; or
 - c.** Fuel burning capacity of primary chamber greater than 200,000 Btu/hr.
- 102.3** Crematories.
- 103 EXEMPTIONS:** The following types of ~~combustion~~ equipment and activities are exempt from this rule:
- 103.1** Laboratory ovens;
 - 103.2** Environmental test chambers;
 - 103.3** Ovens used in research facilities;
 - 103.4** Flares;
 - 103.5** Curing or drying ovens that are operated at temperatures lower than 600° F;
 - 103.6** Electric induction furnaces; and

103.7 Burning-off of pre-cleaned items consisting entirely of metal and containing no debris visible to the naked eye. Pre-cleaning shall be done by flushing with water, solvent and/or mechanical means.

SECTION 200 – DEFINITIONS: ~~See Rule 100 (General Provisions and Definitions) of these rules for definitions of terms that are used but not specifically defined in this rule.~~ For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100 (General Provisions and Definition) of these rules. In the event of any inconsistency between any of the Maricopa County air pollution control rules, the definitions in this rule take precedence.

- ~~201~~ **AFTERBURNER** – ~~The~~ A heating device associated with an incinerator, burn-off oven or crematory that is designed to provide excess air and heat for complete combustion of the gases in the primary chamber so as to control particulate emissions.
- ~~202~~ **BURN-OFF OVEN** – A heating device ~~used~~ intended to remove materials such as oils, greases, paints, coatings, rubber, ~~lacquers~~ lacquers, and insulation from other materials or parts by combustion or charring.
- ~~203~~ **COMBUSTIBLE REFUSE** – Any solid or liquid combustible waste material containing carbon in a free or combined state.
- ~~204~~ **CONDITIONING PERIOD** – ~~A period of time (168 hours minimum) during which the COMS is operated without any unscheduled maintenance, repair, or adjustment prior to initiation of the operational test period.~~
- ~~205~~204 **CONTINUOUS OPACITY MONITORING SYSTEM (COMS)** – The total equipment necessary for the determination of opacity of emissions which provides a permanent, uninterrupted record of opacity readings.
- ~~206~~205 **CREMATION** – ~~The technical~~ process of reducing human or animal remains to bone fragments and ashes in a controlled retort or furnace using heat and/or flame. The reduction takes place through heat and evaporation. Cremation shall also include the processing and pulverization of the bone fragments.
- ~~207~~206 **CREMATORY** – A retort used for the cremation of remains (human or animal), body parts, and associated wrappings. This term may also be used to refer to an establishment wherein these remains are cremated. A crematory may be considered existing or new, dependent upon the date it was constructed. If it was constructed, modified, or commenced operation, including the contractual obligation to undertake and complete an order for a crematory, prior to September 22, 2004, then it is an existing crematory.
- ~~208~~207 **ELECTRIC INDUCTION FURNACES** **FURNACE** – A furnace or oven that is used to melt metals by use of electricity as the source of power or an alternating current electric furnace in which primary conductor is coiled and generates by electromagnetic induction a secondary current that develops within the metal charge.
- ~~209~~208 **FLUE** – A duct or passage, such as a stack or chimney, for air contaminants.
- ~~210~~209 **HOSPITAL WASTE** – Discards generated at a hospital or clinic, except unused items returned to the manufacturer. The definition of hospital waste does not include human corpses, remains, and anatomical parts that are intended for interment or cremation.
- ~~211~~210 **INCINERATION** – The process of ~~burning~~ combustion or pyrolysis involving the chemical reaction of combustible waste materials with air in which the primary purpose is the destruction and reduction in size and mass of the combustible material.

211 **INCINERATOR** – Any equipment used for the purpose of reducing the volume and mass by removing combustible matter by direct combustion or the combustion of waste gases from pyrolysis or gasification. Incinerator designs include single chamber and two-chamber. A two-chamber incinerator consists of two or more refractory lined combustion chambers in series, physically separated by refractory walls, interconnected by gas passage ports or ducts designed for maximum combustion of the material to be burned. An “incinerator” does not include devices such as open or screened barrels, drums, or process boilers.

211.1 **Primary Chamber** –The initial compartment of an incinerator wherein the majority of waste volume reduction or heat treatment occurs by combustion. Primary chambers are normally operated at lower temperatures than are secondary chambers or afterburners.

211.2 **Secondary Chamber** The compartment of an incinerator that operates at excess air conditions wherein destruction of gas-phase combustion products occurs. Passage ports, ducts, flues, chimneys, or stacks with burners shall not be considered controlled secondary chambers unless (1) the combustion zone exhibits design measures for the retention of the gas stream in the chamber, turbulence or mixing, and (2) there is an availability of excess air as determined by engineering analysis.

212 **MEDICAL WASTE** - Any non-gaseous waste, including infectious wastes, which is generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in production or testing of biological agents and substances. Medical waste does not include any wastes identified under subtitle C of the Resource Conservation and Recovery Act (RCRA) as hazardous or as household waste, but includes those pharmaceuticals which are not identified as hazardous by subtitle C of RCRA. Medical waste does not include human or animal remains, caskets, containers, clothing or wrappings from crematories. An expanded definition of medical waste is found in 40 CFR 60, Subpart Ec. The definition of “medical waste” ~~It does include~~ includes, but is not limited to:

212.1 Cultures and stocks of infectious agents and human pathological waste;

212.2 Human blood and blood products;

212.3 Sharps, needles and broken glass that were in contact with infectious wastes;

212.4 Animal wastes exposed to infectious wastes;

212.5 Isolation wastes; and

212.6 Unused sharps, needles and syringes.

~~Medical waste does not include human or animal remains, caskets, containers, clothing or wrappings from crematories. An expanded definition of medical waste is found in 40 CFR 60, Subpart Ec.~~

213 **METAL SALVAGE OPERATIONS** – Any source operation in which combustion or pyrolysis is carried on for the principal purpose, or with the principal result, of recovering metals which are introduced into the operation as essentially pure metals, or alloys thereof, by oxidation of physically intermingled combustible material. Operations in which there is a complete fusion of all such metals ~~are not included in these types of operations~~ such as in an electric induction furnace, are not considered “metal salvage operations” for the purpose of this rule.

~~214 MULTIPLE CHAMBER STARVED AIR INCINERATOR~~ Any incinerator consisting of two or more refractory lined combustion chambers in series, physically separated by refractory walls, interconnected by gas passage ports or ducts designed for maximum combustion of the material to be burned.

~~214.1 Primary Chamber~~ Initial compartment wherein the majority of waste volume reduction or heat treatment occurs by combustion. Primary chambers are operated at lower temperatures than secondary chambers or afterburners.

~~214.2 Secondary Chamber~~ Compartment which operates at excess air conditions wherein destruction of gas phase combustion products occurs. Passage ports, ducts, flues, chimneys, or stacks with burners shall not be considered controlled secondary chambers unless the combustion zone exhibits design measures for the retention of the gas stream in the chamber, turbulence or mixing, and the availability of excess air as determined by engineering analysis.

~~215214 NIGHT BURNING~~ **NIGHTTIME COMBUSTION** – ~~Burning~~ Combustion that occurs after sundown and before the following sunrise.

~~216 OPERATIONAL TEST PERIOD~~ A period of time (168 hours) during which the COMS is expected to operate within the established performance specifications without any unscheduled maintenance, repair or adjustment.

215 PARTS RECLAMATION UNIT- A burn-off oven that combusts only paints, lacquers, and varnishes off of items (e.g., tools and equipment) so that these items can be reconditioned and reused. A burn-off oven used to remove plastic, insulation or rubber from items shall not be considered a parts reclamation unit for the purpose of this rule.

~~217216~~ **PATHOLOGICAL WASTE** – Waste material that consists of only human or animal remains, anatomical parts and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding (if applicable).

217 PYROLYSIS/COMBUSTION UNIT – A combustion unit that produces gases, liquids, or solids through the heating of waste, and the gases, liquids, or solids produced are combusted and emissions vented to the atmosphere.

218 RESIDENCE TIME – The average time that gases spend in a defined space, also known as “bulk gas average residence time”.

SECTION 300 – STANDARDS

301 CONTROLS REQUIRED: ~~No person~~ An owner or operator shall comply with the following: ~~burn any combustible refuse in any incinerator, within Maricopa County, or perform metal salvage operations, or remove materials utilizing a burn-off oven, or burn human or animal remains in a crematory, except using the following air pollution control equipment:~~

301.1 Incinerators: Combustion of all types of combustible refuse in an incinerator ~~Incinerators shall consist of a~~ be performed in a multiple-chamber incinerator that shall operate ~~operates~~ at least at a minimum temperature of 1600°F in the secondary chamber or afterburner, with a residence time of

at least 1 second in the secondary chamber or afterburner during the period of combustion in order to ~~destruct~~ destroy the combustion products.

- 301.2 Burn-Off Ovens:** ~~Metal salvage operations or removal of materials utilizing a burn-off oven~~ Burn-off ovens shall consist of shall employ an oven with at least two chambers. The secondary compartment or afterburner shall operate at a minimum temperature of at least 1400°F with a residence time of at least 1/2 second during the period of combustion in order to destruct the combustion products.
- 301.3 Crematories:** ~~A crematory~~ Crematories shall consist of an incinerator comprised of ~~with~~ at least two chambers; and that complies with the following conditions: ~~For an existing crematory the secondary compartment or afterburner shall operate at a minimum temperature of at least 1400°F with a residence time of at least 1 second during the period of combustion in order to destruct the combustion products. For a new crematory, the secondary compartment or afterburner shall operate at a minimum temperature of at least 1600°F with a residence time of at least 1 second during the period of combustion in order to destruct the combustion products. The burner in the primary chamber shall not be ignited until the secondary chamber combustion zone temperature is equal to or greater than 800°F for existing crematories and 1000°F for new crematories.~~
- a.** For an existing crematory the burner in the primary chamber shall not be ignited until the secondary chamber combustion zone temperature is equal to or greater than 800°F. The secondary compartment or afterburner shall operate at a minimum temperature of at least 1400°F with a residence time of at least 1 second during the period of combustion in order to destruct the combustion products.
- b.** For a new crematory, the burner in the primary chamber shall not be ignited until the secondary chamber combustion zone temperature is equal to or greater than 1000°F. The secondary compartment or afterburner shall operate at a minimum temperature of at least 1600°F with a residence time of at least 1 second during the period of combustion in order to destruct the combustion products.
- 301.4c. Alternate Operating Conditions:** If the manufacturer's optimum design specifications for the minimum temperature or residence time of a secondary chamber or afterburner at existing crematories are different ~~than~~ from the temperatures or residence times set forth in ~~Sections 301.1, 301.2 or 301.3~~ Section 301.3 (a) of this rule, the manufacturer's specifications may be used instead, providing that the owner or operator demonstrates compliance ~~according to~~ with the test methods listed in ~~Section 504~~ 507 of this rule.
- 301.5d. Additional Operating Conditions for Cremating Large Bodies:** Alternate operating temperatures and special procedures may be required for ~~the cremating~~ cremation of large bodies (over 300 lbs.) that are different ~~than~~ from the temperatures or residence times in the afterburner set forth in ~~Sections 301.1, 301.2 or~~ Section 301.3 of this rule. These alternate times and temperatures may be ~~used~~, followed when cremating large bodies, provided ~~providing~~ that the owner or operator demonstrates compliance with the test methods listed in ~~Section 504~~ 507 of this rule.

- 302 **EMISSIONS STANDARD – OPACITY:** ~~Notwithstanding the provisions of Regulation III, Rule 300 (Visible Emissions), no person~~ An owner or operator shall not cause, suffer, or allow or permit the emissions into the atmosphere from any incinerator, burn-off oven, or crematory, for an aggregate of more than 30 seconds in any 60 minutes, for any air contaminant that exceeds 20 percent opacity (Section 507.3 of this rule).
- 303 **EMISSIONS STANDARD- PARTICULATES:** ~~No person~~ An owner or operator shall not cause, suffer, allow, or permit the emission into the atmosphere from any incinerator, burn-off oven, crematory, particulate matter which exceeds 0.080 grain per cubic foot of dry flue gas at standard conditions adjusted to 7 percent oxygen (O₂) in the exhaust gases and calculated as if no auxiliary fuel had been used. particulate matter emissions into the atmosphere from any incinerator, burn-off oven, or crematory, which exceed 0.080 grain per cubic foot of dry flue gas at standard conditions adjusted to 7% oxygen (O₂) in the exhaust gases and calculated as if no auxiliary fuel had been used.
- 304 **NIGHT BURNING NIGHTTIME COMBUSTION:** ~~If an~~ An owner or operator who chooses to perform burning at conduct combustion operations shall comply with the following conditions shall be met:
- 304.1 Incinerator, Crematory, or Burn-Off Oven Other than a Parts Reclamation Unit:**
No owner or operator of an incinerator, burn-off oven or crematory shall conduct burning after sundown and before sunrise unless a A Continuous Opacity Monitoring System (COMS) is operating shall be operated at all times during night burning nighttime combustion operations and shall comply with the following conditions:
- 304.2 **a.** The COMS shall be calibrated and maintained in accordance with EPA Performance Specification # 1, described in Section 507.2 of this rule and shall be calibrated at least once per day if night burning is conducted. The COMS shall be located downstream from all particulate control equipment, where condensed water is not present, free of interference from ambient light (applicable only if transmissometer is responsive to ambient light) and accessible in order to permit routine maintenance in accordance with EPA Performance Specification #1 the test method described in Section 507.2 of this rule.
- 304.3 **b.** No night burning shall be conducted until the owner or operator insures that a properly trained operator is present at all times. A properly trained COMS operator shall be present at all times during nighttime combustion operations. The operator shall be trained in the proper operation and maintenance of the COMS as well as the shutdown procedures of the incinerator, crematory or burn-off oven incinerator, burn-off oven, or crematory. Therefore if the COMS registers opacity readings that are above higher than the opacity limitations in Section 302 of this rule, then the operator has the authority and capability to shut down the operation.
- 304.2 Parts Reclamation Unit:** An owner or operator of a parts reclamation unit who chooses to conduct nighttime combustion operations without the installation and operation of a COMS shall:
- a.** Not cause, allow or permit any visible emissions during combustion during the nighttime; and
- b.** Conduct visible emissions observations in compliance with the test method described in Section 507.4 of this rule at least once per hour during each nighttime combustion cycle; and

- c. Operate and maintain the parts reclamation unit in accordance with the manufacturer's operations and maintenance manual or other similar written materials supplied by the manufacturer or distributor of the unit to ensure the unit remains in proper operating condition.
- d. Operate exclusively with parts reclamation units with an inside stack diameter less than 10 inches.

305 REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT OPERATION AND MAINTENANCE (O&M) PLAN REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT AND APPROVED EMISSION CONTROL SYSTEM (ECS): ~~Any person incinerating or otherwise processing particulate emissions pursuant~~ An owner or operator subject to this rule operating an ECS shall provide, properly install and maintain in calibration, in good working order and in operation the air pollution control equipment required by this rule. This includes the following:

- 305.1 Provide and maintain devices that indicate temperatures, pressures, rates of flow, or other operating conditions necessary to determine if the air pollution control equipment is functioning properly and is properly maintained.
- 305.2 Records shall be kept pursuant ~~Keep records according~~ to Section 501 of this rule that demonstrate that the air pollution control equipment meets the overall control standards required in Section 300 of this rule.
- 305.3 Submit an Operation and Maintenance (O&M) Plan if ~~If~~ the air pollution control equipment consists of additional equipment other than an afterburner, such as a baghouse or venturi scrubber then an Operation and Maintenance (O&M) Plan shall be submitted for approval to the Control Officer for each additional control system according to the following O&M Plan requirements for an Emission Control System (ECS):
 - a. An owner or operator subject to this rule shall provide and maintain readily available on-site at all times (an) O&M Plan(s) for any ECS and any ECS monitoring devices that are used under this rule or an air pollution control permit.
 - b. An owner or operator subject to this rule shall submit to the Control Officer for review an O&M Plan(s) for any (ECS) including an ECS monitoring device that is required by this rule or required under an air pollution control permit.
 - c. An owner or operator subject to this rule operating an ECS shall install, maintain and accurately calibrate monitoring devices listed in the O&M Plan(s) including, but not limited to, monitoring devices that measure pressure differentials and other operating conditions necessary to determine if control devices are functioning properly.
 - d. An owner or operator who is required to have an O&M Plan for any ECS including any ECS monitoring devices must fully comply with all elements of an O&M Plan(s) including, but not limited to, every action, schedule, and condition identified in each O&M Plan.
 - e. An O&M Plan for any ECS including any ECS monitoring devices shall include all of the following information:
 - (1) ECS equipment manufacturer;

- (2) ECS equipment model;
 - (3) ECS equipment identification number or identifier that owner or operator subject to this rule assigns to such ECS equipment when the manufacturer's equipment identification number is unknown and;
 - (4) Any other information required by Section 501 of this rule.
- f. The owner or operator subject to this rule, who receives a written notice from the Control Officer that an O&M Plan for any ECS including any ECS monitoring devices is deficient or inadequate, must make written revisions to the O&M Plan. The revised O&M Plan must be submitted to the Control Officer within five working days of receipt of the Control Officer's written notice. Such time period can be extended by the Control Officer, upon written request and for good cause. During the time that such owner or operator subject to this rule is preparing revisions to the O&M Plan, such owner or operator shall still comply with all requirement of this rule.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS (NOT APPLICABLE)

401 ~~COMPLIANCE SCHEDULE: An owner or operator subject to this rule shall must meet all applicable provisions of this rule by September 22, 2005. In addition:~~

~~401.1 An owner or operator subject to this rule shall must inform the Control Officer of the intention to use any additional equipment to control emissions other than an afterburner by March 22, 2005.~~

~~401.2 An owner or operator who plans to burn at night shall ensure that the COMS is installed properly according to design specifications, calibrated, and operated for a conditioning period of at least 168 hours minimum and an operational test period of 168 hours before night burning is performed.~~

SECTION 500 – MONITORING AND RECORDS

501 **RECORDKEEPING:** Recordkeeping requirements shall include the following types of information: An owner or operator subject to this rule shall maintain the records listed below and shall retain these records for five years. These records shall be kept on-site in written or electronic format, in a complete and consistent manner. Written or electronic copies shall be made available to the Control Officer upon request. An owner or operator shall keep the following daily records:

501.1 Times of operation;

501.2 Chamber temperatures: Chamber temperatures shall include operating temperatures for the secondary chamber as well as secondary chamber temperature at the time of the ignition of the primary chamber.

501.3 Weight of the materials incinerated shall be determined as follows:

501.1 **a. Incinerators:** Total weight charged;

~~Daily records of the type of material to be incinerated, total weight charged, chamber temperatures (secondary chamber temperature at the time of the ignition of the primary chamber and the secondary chamber operating temperature) and dates and times of the day that the incinerator is operating.~~

501.2 ~~Burn-Off Ovens: Daily records of the type of material to be burned, chamber temperatures (secondary chamber temperature at the time of the ignition of the primary chamber and the~~

~~secondary compartment operating temperature) and dates and times of the day that the burn-off oven is operating.~~

501.3 **b. Crematories:**

(1) Human Crematories: Account for the numbers of bodies cremated; or

(2) Animal Crematories: Account for either the number and type of remains charged or the weight of the animal(s) charged; or

(3) Large Bodies: If a human or animal crematory combusts a large body (over 300 lbs.), the approximate weight of the body and any alternative operating conditions shall be recorded.

~~Daily records of the number of bodies cremated, chamber temperatures (secondary chamber temperature at the time of the ignition of the primary chamber and the secondary compartment operating temperature) and dates and times of the day that the crematory is operating. The owner or operator of an animal crematory shall account for either the weight of the animal charged or the number and type of remains charged. In addition, if a human or animal crematory burns a large body (over 300 lbs.), the approximate weight of the body and the operating conditions shall be noted.~~

502 **OPACITY OBSERVATIONS:** An owner or operator shall keep records of opacity observations used to measure visible emissions from activities regulated by this rule. The records shall be compiled, maintained, and retained for each day or night that any activity capable of generating emissions is conducted. These written records shall include the following information:

502.1 Date, time, and location of all opacity observations; and

502.2 Results of all opacity observations; and

502.3 Corrective action(s) taken, if any.

501.4 **503** ~~**NIGHT BURNING**~~ **NIGHTTIME COMBUSTION:** If Night burning is conducted the owner or operator shall: An owner or operator conducting nighttime combustion operations shall comply with the following requirements:

503.1 **Nighttime Combustion with a COMS:**

a. Maintain a continuous record of opacity readings generated by the COMS. Records shall include all times that the meter is running properly. Records shall also indicate when the instrument is inoperative or has been adjusted or repaired.

b. ~~The~~ Record the date and time identifying each period during which the COMS was inoperative, except for zero and span checks, and the nature of system repair or adjustment shall be reported. The Control Officer may ~~require~~ request proof of COMS performance whenever system repairs or adjustments, other than routine maintenance, have been made.

c. ~~A~~ Maintain a file of all data collected by the COMS ~~or~~ and as necessary ~~to~~ convert monitoring data to the units of the applicable standard as described for compliance with Section 507.3 of this rule.

503.2 **Nighttime Combustion without a COMS – Parts Reclamation Unit:** Maintain records of the visible emissions observations taken at night during each combustion cycle for each parts

reclamation unit as required by Section 507.4 of this rule. These records shall include the following:

- a. Date, time, and location of all visible emission observations; and
- b. Results of all visible emission observations; and
- c. Corrective action(s) taken, if any.

504 **PREVENTATIVE MAINTENANCE LOG:** Maintain a log of equipment preventive maintenance activities performed on all equipment or ECS subject to this rule.

~~504.~~**505** **ALTERNATE OPERATING CONDITIONS:** An owner or operator shall keep records of any alternate operating conditions including temperatures and residence times, as ~~stated in~~ required by Sections 301.4 301.3(c) and 301.5 301.3(d) of this rule; if used.

506 **PERFORMANCE TEST RESULTS:** An owner or operator shall maintain records of all exhaust stack performance tests. Such written records shall include the following information:

506.1 Date, start and end times, and location of all performance tests;

506.2 Results of all tests; and

506.3 Corrective action(s) taken, if necessary.

~~502.~~**507** **COMPLIANCE DETERMINATION – TEST METHODS:** When more than one test method is permitted for a ~~determination, of determining~~ an exceedance of the limits established in this rule, ~~then any exceedance~~ determined by using any one of the following applicable test methods shall ~~constitutes~~ constitute a violation of this rule.

~~502.1~~ **507.1** ~~For determining~~ Determination of total particulate matter, EPA Methods 1 through 5, or the EPA alternatives equivalent methods listed in Sections 507.3 and 507.4 of this rule approved by the Control Officer, shall be used. Both carbon dioxide and oxygen measurements shall be obtained simultaneously with each Method 5 run.

~~502.2~~ **507.2** Determination of visible emissions compliance shall be made by a certified emissions observer or by a continuous emission monitor which is maintained and calibrated in accordance with EPA Performance Specification #1 (40 CFR, Part 60, Appendix B). The observer shall be qualified as an expert visible emissions evaluator and so certified by the Arizona Department of Environmental Quality or by any other agency that is acceptable to the Control Officer.

507.3 Opacity shall be determined by observations of visible emissions conducted in accordance with EPA Reference Method 9 as modified by EPA Reference Method 203 B.

507.4 The presence or absence of visible emissions shall be detected using EPA Reference Method 22.

508 **TEST METHODS INCORPORATED BY REFERENCE:** The EPA test methods as they exist in the Code of Federal Regulations (CFR) are incorporated by reference in Appendix G of the Maricopa County Air Pollution Control Rules and Regulations.