ASME QHO-1–2004
(Revision of ASME QHO-1–1994)

STANDARD FOR THE QUALIFICATION AND CERTIFICATION OF HAZARDOUS WASTE INCINERATOR OPERATORS

An American National Standard



The American Society of Mechanical Engineers

Copyright ASME International
Provided by IHS under license with ASME
No reproduction or networking permitted without license from IHS

Not for Resale

Copyright ASME International
Provided by IHS under license with ASME
No reproduction or networking permitted without license from IHS
Not for Resale

The American Society of Mechanical Engineers

AN AMERICAN NATIONAL STANDARD

STANDARD FOR THE QUALIFICATION AND CERTIFICATION OF HAZARDOUS WASTE INCINERATOR OPERATORS

ASME QHO-1–2004
(Revision of ASME of QHO-1–1994)

Copyright ASME International
Provided by IHS under license with ASME
No reproduction or networking permitted without license from IHS
Not for Resale

Date of Issuance: March 10, 2004

This Standard will be revised when the Society approves the issuance of a new edition. There will be no addenda issued to this edition.

ASME issues written replies to inquiries concerning interpretations of technical aspects of this Standard. Interpretations are published on the ASME Web site under the Committee Pages at http://www.asme.org/codes/ as they are issued.

ASME is the registered trademark of The American Society of Mechanical Engineers.

This code or standard was developed under procedures accredited as meeting the criteria for American National Standards. The Standards Committee that approved the code or standard was balanced to assure that individuals from competent and concerned interests have had an opportunity to participate. The proposed code or standard was made available for public review and comment that provides an opportunity for additional public input from industry, academia, regulatory agencies, and the public-at-large.

ASME does not "approve," "rate," or "endorse" any item, construction, proprietary device, or activity.

ASME does not take any position with respect to the validity of any patent rights asserted in connection with any items mentioned in this document, and does not undertake to insure anyone utilizing a standard against liability for infringement of any applicable letters patent, nor assume any such liability. Users of a code or standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, is entirely their own responsibility.

Participation by federal agency representative(s) or person(s) affiliated with industry is not to be interpreted as government or industry endorsement of this code or standard.

ASME accepts responsibility for only those interpretations of this document issued in accordance with the established ASME procedures and policies, which precludes the issuance of interpretations by individuals.

No part of this document may be reproduced in any form,
in an electronic retrieval system or otherwise,
without the prior written permission of the publisher.

The American Society of Mechanical Engineers
Three Park Avenue, New York, NY 10016-5990

Copyright © 2004 by
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS
All rights reserved
Printed in U.S.A.

--`,,`--`,,`,`,,`---

Copyright ASME International
Provided by IHS under license with ASME
No reproduction or networking permitted without license from IHS

Not for Resale

CONTENTS

Foreword iv
Committee Roster vi
Summary of Changes vii

1 Introduction 1

2 Duties and Qualifications 1

3 Training 2

4 Testing Requirements and Procedures 5

5 Certification Process 6

Nonmandatory Appendix
A Applying for Certification 8

Copyright ASME International
Provided by IHS under license with ASME
No reproduction or networking permitted without license from IHS
Not for Resale

FOREWORD

The American Society of Mechanical Engineers (ASME), in recognition of the needs and benefits associated with standard qualifications for hazardous waste incinerator operators, established the Committee on the Qualification of Hazardous Waste Incinerator Operators (QHO). The purpose of the QHO Committee was to propose such a standard for operators. The QHO Committee will continue to review and update the Standard on an ongoing basis.

This is a voluntary standard that sets forth the qualifications for operators at a hazardous waste incineration facility. Individuals in these positions are expected to be at the facility and perform the duties described in this Standard. Education, experience, training, and testing requirements in order to certify qualifications for these positions are also set forth by this Standard.

The Standard establishes the criteria and process by which ASME will certify the qualifications of hazardous waste incinerator operators. The certification process consists of provisional certification and then operator certification for operator positions described by the Standard. To obtain a provisional certificate, the operator must demonstrate that the qualifications for education and experience have been met and must pass an examination on the basics of hazardous waste handling and combustion. The provisional certificate is valid for five years and is intended for use in any jurisdiction for any hazardous waste incineration technology.

The operator certificate is issued to operators who hold provisional certification and have demonstrated satisfactory knowledge of, and competence in, the specific technology in use at their facility of employment. The certificate is renewable every five years with demonstrations that the certificate holder has remained current with changes in the facility's technology and the requirements of the operating permit.

ASME Codes and Standards are developed and maintained with the intent to represent the consensus of concerned interests. As such, users of this Standard may interact with the Committee by attending committee meetings, requesting interpretations, and proposing revisions.

Attending Committee Meetings. The QHO Committee regularly holds meetings, all of which are open to the public. Persons wishing to attend any meeting or apply to become a member of the Committee should contact the Secretary of the QHO Committee.

Proposing Revisions. Revisions will be made periodically to the Standard to incorporate changes that appear necessary or desirable, as demonstrated by the experience gained from the application of the requirements. Approved revisions will be published periodically. The Committee welcomes proposals for revisions to this Standard. Such proposals should be as specific as possible, citing:

(a) the paragraph number(s)

(b) the proposed wording

(c) a detailed description of the reasons for the proposal

Requesting Interpretations. On request, the Committee will render an interpretation of any requirement of the Standard. Interpretations can only be rendered in response to a written request sent to the Secretary of the QHO Committee.

The request for interpretation should be clear and unambiguous. It is further recommended that the inquirer submit his request utilizing the following format.

(a) Subject. Cite the applicable paragraph number(s) and provide a concise description.

(b) Edition. Cite the applicable edition and addenda of the standard for which the interpretation is being requested.

(c) Question. Phrase the question as a request for an interpretation of a specific requirement suitable for general understanding and use, not as a request for approval of a proprietary design or situation.

Requests that are not in this format will be rewritten in this format by the Committee prior to being answered, which may inadvertently change the intent of the original request.

ASME procedures provide for reconsideration of any interpretation when or if additional information that might affect an interpretation is available. Further, persons aggrieved by an interpretation may appeal to the cognizant ASME committee or subcommittee.

Copyright ASME International
Provided by IHS under license with ASME
No reproduction or networking permitted without license from IHS
Not for Resale

Correspondence should be addressed to: Secretary, QHO Committee, The American Society of Mechanical Engineers, Three Park Avenue, New York, NY 10016.

This Standard, which was approved by the QHO Committee and by ASME, was approved by ANSI and designated an American National Standard on January 20, 2004.

This Standard is a revision of QHO-1–1994 and 1996 Addenda.

Copyright ASME International
Provided by IHS under license with ASME
No reproduction or networking permitted without license from IHS
Not for Resale

COMMITTEE ON THE QUALIFICATION OF HAZARDOUS WASTE INCINERATOR OPERATORS

(The following is the roster of the Committee at the time of approval of this Standard.)

OFFICERS

R. E. Bastian, *Chair*
A. Feldman, *Vice Chair*
M. C. Tromba, *Secretary*

COMMITTEE PERSONNEL

R. E. Bastian, Focus Environmental
D. Blair, Eli Lilly and Co.
D. L. Corwin, Therm-a-cor Consulting
A. Feldman, JJDS Environmental
A. Freeland, General Physics
B. P. Gallagher, Eastman Kodak
S. N. Garg, U.S. Environmental Protection Agency
R. Jackson, Von Roll America
C. C. Lee, U.S. Environmental Protection Agency
E. J. Martin, Consultant
M. C. Tromba, The American Society of Mechanical Engineers

Copyright ASME International
Provided by IHS under license with ASME
No reproduction or networking permitted without license from IHS
Not for Resale

ASME QHO-1-2004
SUMMARY OF CHANGES

Following approval by the ASME QHO Committee, and after public review, ASME QHO-1-2004 was approved by the American National Standards Institute on January 20, 2004.

ASME QHO-1-2004 includes editorial changes, revisions, and corrections introduced in ASME QHO-1-1994, as well as the following changes identified by a margin note, **(04)**.

Page	*Location*	*Change*
1	1.1.2	Subparagraph (e) revised
	1.1.3	Last paragraph added
	1.2	Definition for *hazardous waste* revised
2	Table 2.2.1	Revised
3, 5	3.2.1	Subparagraph (a)(2)(e) revised
	3.2.2	Subparagraph (c), last paragraph revised
	3.2.3	Subparagraph (h) revised
	3.3	Subparagraph (n) added
7	5.2.3	Revised in its entirety
	5.3	Second paragraph added

Copyright ASME International
Provided by IHS under license with ASME
No reproduction or networking permitted without license from IHS
Not for Resale

Copyright ASME International
Provided by IHS under license with ASME
No reproduction or networking permitted without license from IHS
Not for Resale

STANDARD FOR THE QUALIFICATION AND CERTIFICATION OF HAZARDOUS WASTE INCINERATOR OPERATORS

1 INTRODUCTION

1.1 Scope and Purpose

1.1.1 Scope. This Standard covers the qualification and certification of operators of a hazardous waste incinerator.

(04) **1.1.2 Exclusions.** This Standard does not cover facilities exclusively processing the following:

(a) municipal solid waste

(b) pathological waste

(c) wastewater treatment plant sludge not classified as hazardous waste

(d) nuclear waste

(e) solid waste not classified as hazardous waste

(04) **1.1.3 Purpose.** This Standard provides requirements to be used in certifying operators of hazardous waste incineration facilities. These requirements recognize the knowledge, training, and experience in the physical operation of a facility needed to comply with the facility's operating permits, and related environmental, health, and safety regulations.

This Standard does not cover the certification or validation of plant operating procedures, operating practices, or facility performance, nor does it certify that a facility is operating in compliance with permit requirements.

Hazardous waste incineration facility includes those combustors regulated by EPA under 40 CFR Parts 264 and 265 Subpart O and 40 CFR part 63 Subpart EEE excluding Light Weight Aggregate Kilns (LWAK) and Cement Kilns.

(04) 1.2 Definitions

hazardous waste: a subset of solid waste and defined as any material that is hazardous under 40 CFR Part 261.

hazardous waste incinerator: A controlled flamed combustion device that thermally treats hazardous waste.

2 DUTIES AND QUALIFICATIONS

2.1 Introduction

Hazardous waste incineration facility employees perform a wide range of duties based on skill and function. These duties relate to incinerator operation, e.g., preparation of waste feed stream, the feeding of wastes, the handling of residues, and the operation of air pollution control equipment. The individuals involved typically perform the duties of control room and field operators. This Standard is intended for the certification of individuals directly involved with hazardous waste incinerator operation. People supervising these operators may be certified depending on their level of direct involvement.

Certification is not intended for pure maintenance mechanics or for those persons solely involved in the transportation of waste to and from the incinerator.

This Section describes the duties and qualifications of those individuals to be certified.

2.2 Duties

2.2.1 Control Room Operator. Control room operators are normally classified as chief operators, control room operators, senior operators, instrument panel operators, or a similar title. The control room operator monitors and adjusts the operations of the incinerator system. Monitoring and adjusting are done manually or by means of individual loop controllers and indicators, computer control systems, or a combination of devices. The control room operator must understand how each control loop functions and the impact that changes in set points to controllers have in changing incinerator-operating conditions. The control room operator must understand how different waste feed streams affect the operation of the incinerator components and the unit as a whole. In addition, the control room operator will normally have the responsibility to communicate with supervisory and incoming personnel regarding the status of operations. Examples of specific duties and associated understandings are shown in Table 2.2.1.

2.2.2 Field Operator. The field operator normally has responsibility for waste handling and receiving, field equipment operation, and residue handling. Field operator's duties are defined as follows.

(a) Waste Receiving and Handling. The field operator needs knowledge and understanding of the types of waste streams being handled. The operator must follow established procedures to assure that only those wastes approved for incineration are fed to the incinerator. The field operator needs to understand thoroughly the impact of waste feed rate (e.g., mass, metal, halogen, and heat content) on the incinerator process. The field

Copyright ASME International
Provided by IHS under license with ASME
No reproduction or networking permitted without license from IHS
Not for Resale

(04)

Table 2.2.1 Duties of Control Room Operators

Monitors and Adjusts	Understands
Combustion and air pollution control equipment	Unit operation preformed by each component Adjustments to operational conditions Startup and shutdown procedures
Results of process analyzers which analyze key process stream compositions	Causes of fluctuations Adjustments to operational conditions
Alarms	Causes of alarms Adjustments to restore operations
Waste feed shutdown	All safety, operational, and environmental process interlocks
Regulatory parameters	Conditions of permit (or interim status requirements) to assure continuous operation within limits Conditions of permit (or interim status requirements) to assure the proper startup and shutdown of the unit Data acquisition and record-keeping requirements

operator needs knowledge and understanding of personal safety requirements, including the use of prescribed personal protective equipment. A full understanding of all implications of removing waste from a container in terms of material stability as it relates to either directly feeding the material to the incinerator or removing the material from the container for storage or mixing is required.

(b) Field Equipment Operation. The field operator needs knowledge and understanding of equipment location including instrumentation, equipment operation, and equipment control, for the purpose of operating the equipment from the field where required and assisting in the identification of problems. The field operator needs an understanding of air pollution control equipment and effluent treatment systems operations, and the impact of incineration operations on these systems.

(c) Residue Handling. The field operator needs to understand the mechanics of the ash removal system, including ash receiving containers.

2.2.3 Supervision. Direct supervisors of the control room operator or field operator may be classified as first line supervisors, operating engineers, unit shift supervisors, forepersons, etc. These individuals are responsible for management of those operators directly involved with the unit operations and charging of wastes to the incineration unit.

2.3 Qualifications for Certification

This paragraph establishes the qualifications which shall be met by operators at a hazardous waste incineration facility for the purpose of receiving provisional certification or operator certification under this Standard.

2.3.1 Provisional Certification. The qualifications for provisional certification for a hazardous waste incinerator operator are as follows:

(a) completion of a high school education or equivalent

(b) completion of training in the body of knowledge specified in para. 3.2

(c) passing the general examination as specified in para. 4.2

2.3.2 Operator Certification. The qualifications for operator certification for a hazardous waste incinerator operator are as follows:

(a) holding a valid provisional certificate

(b) completion of training in the body of knowledge specified in para. 3.3

(c) completion of six months experience as an operator at a hazardous waste incinerator

(d) passing a site-specific examination as specified in para. 4.3 of this Standard

2.3.3 Transfer of Operator Certification. The holder of a current operator certification for a hazardous waste incineration facility may transfer provisional certification to another facility, and may be certified at the new facility by meeting the requirements of para. 2.3.2(d).

3 TRAINING

3.1 Introduction

This Section describes training requirements for provisional and operator certification. Training involves a combination of classroom and in-plant instruction, and encompasses both fundamental theory and equipment process operation. Training may be provided by any individual, organization, or academic institution.

3.2 Training for Provisional Certification

Training requirements for provisional certification focus on the need of the employee to understand the

Copyright ASME International
Provided by IHS under license with ASME
No reproduction or networking permitted without license from IHS
Not for Resale

safe handling of hazardous substances, combustion fundamentals, basic plant operations, processes, and equipment.

(04) **3.2.1 Basic Hazardous Waste Facility Training.** Requirements for basic hazardous waste facility training are as follows.

(a) Hazard Communication (OSHA- SARA Employee Right to Know)

(1) Introduction to handling hazardous wastes covering the following topics specific to the facility or unit:

(a) overall view of plant operations, including a brief understanding of what is being incinerated and why

(b) personal safety and housekeeping procedures, including operations responsibility towards maintenance personnel

(c) basic sampling procedures including proper personal protective equipment

(d) overview of maintenance of equipment and processing equipment

(2) Introduction covering "The Employee Right to Know Act." The operator must be able to recognize and understand the use of labels, the material safety data sheets, and also the following:

(a) identification of waste

(b) hazardous waste constituents

(c) physical and chemical characteristics, and physical hazards

(d) procedures for safe handling and control measures

(e) hazardous waste management practices

(b) OSHA Required HAZWOPER Training

(c) Safety

(1) an overview of all safety procedures and practices specific to the facility

(2) the use and choice of personal protective equipment

(3) overview of all emergency equipment, including evacuation procedures, fire protection equipment, safety shower and eye wash locations and their use, and location and use of all communication equipment such as phones, radios, etc.

(4) description of the safety program utilized at the facility

(5) contingency/evacuation plan

(04) **3.2.2 Basic Hazardous Waste Incineration Training.** Requirements for basic hazardous waste incineration training are as follows.

(a) *Science.* A program to provide background information on the science of the industry.

(1) Fundamentals of chemistry, which include composition of matter, compounds, and mixtures; chemical reactions; material balancing; solution and concentration; and basic organic chemistry and nomenclature;

(2) Principles of combustion, which include balancing combustion equations and calculating excess air requirements.

(b) *Basic Plant Operations.* A program to acquaint the individual with the operation of and a demonstrated competency with

(1) equipment, such as valves, pumps, pipe, pipe fittings and flanges, vessels, equipment safety devices, and incineration and pollution control equipment

(2) fluid flow (hydraulics), heat transfer, and an understanding of the 3 T's (time, temperature, and turbulence) of incineration

(3) pressure/vacuum and temperature relationships

(c) *Instrumentation.* A program to acquaint the individual with the basic principles and operation of digital and analog dials, gages, and devices for recording and control of incineration and waste handling parameters. The training must include the relationships between control and monitoring.

The completion of all of the above courses and training (paras. 3.2.1 and 3.2.2) is intended to fulfill the RCRA requirements (40 C.F.R. 264.16 and 40 C.F.R. 265.16), as well as OSHA requirements [29 C.F.R. 1910.120(e),(g),(i)-(l), and (p)] for TSD facilities.

3.2.3 Hazardous Waste Incinerator Process and Equipment Training. (04) This level of training focuses on the theory, operation, and regulation of basic incinerator processes and equipment that are common in industry. Upon completion of the curriculum outlined in this paragraph, an individual should possess sufficient knowledge to pass the general examination. The following outline is given as a guide. The examination topics include, but are not limited to

(a) Incinerator Feed Mechanism

(1) liquid injection nozzles

(a) theory of operation

(1) media (air, steam, etc.) and effects on atomization

(2) nonatomizing

(3) air-fuel ratio control

(b) safety requirements

(c) potential hazards

(1) compatibility of wastes

(2) plugging

(3) flashback

(2) packaged waste feed systems

(a) identification of wastes

(b) safety requirements

(1) spill handling

(2) sampling

(3) mechanical equipment

(4) protective equipment

(c) limitations of waste feed systems

Copyright ASME International
Provided by IHS under license with ASME
No reproduction or networking permitted without license from IHS
Not for Resale

(1) physical (weight, size of containers, Btu content, etc.)
(2) permit limits (Btu content, feed rate, metals content, air emissions, and others)
(d) potential hazards
(1) sealed drums
(2) liquids
(3) high Btu content wastes
(4) explosives
(e) feed system inspections (equipment checks)
(3) Solid Waste (rubbish, dirt, sludge, etc.) Feed Systems
(a) identification of wastes
(b) safety requirements
(1) spill handling
(2) sampling
(3) mechanical equipment
(5) protective equipment
(c) limitations
(1) physical (VOCs, size, Btu content)
(2) permit limitations (air emissions, metals, feed rate)
(d) potential hazards
(1) fire
(2) dust and other explosions
(3) toxic fumes
(e) equipment
(4) vapor feed systems
(b) Special Considerations for Liquid Wastes
(1) storage and blending
(a) identification of liquid wastes
(b) safety precautions
(1) protective equipment
(2) grounding
(3) sampling
(c) transfer operations in the storage facility
(1) equipment inspections (hoses, seals, tank levels, valving)
(2) compatibility considerations for mixing
(d) troubleshooting
(1) equipment leak detection
(2) tank leak detection
(2) direct incineration
(a) safety precautions
(1) protective equipment
(2) grounding
(3) sampling
(b) special handling
(c) transfer operations in the incinerator
(1) hoses
(2) pump seals
(3) valving
(4) liquid flow measurement
(d) troubleshooting
(c) Special Consideration for Vapor Feeding Systems
(1) sources and identification
(2) pressure measurements and relief devices
(3) reactivity
(4) inerting
(5) detonation arrestors
(6) line temperature and tracing
(7) direct incineration
(a) safety precautions
(1) protective equipment
(2) grounding
(3) sampling
(b) special handling
(c) transfer operations to the incinerator
(1) *Portable tankage and cylinders.* Hoses, seals, valving, and flow indiction and measurement
(2) *Tank vents.* Operation and alternative venting or scrubbing during incinerator outage
(d) Special Considerations for Solid, Semisolid, Sludge, and Soil Wastes
(1) storage
(a) identification of solid wastes
(b) safety precautions
(1) protective equipment
(2) grounding
(3) obtaining a representative sample
(c) transfer operations
(1) equipment inspections (conveyors, vacuum, and pressure systems)
(2) compatibility
(d) troubleshooting
(1) equipment leak detection
(2) tank leak detection
(2) direct incineration
(a) safety precautions
(1) protective equipment
(2) grounding
(3) sampling
(b) maintaining a consistent feed—quantity and quality
(c) transfer operations to the incinerator
(d) troubleshooting
(e) Mechanical Equipment
(1) types of combustion chambers
(a) rotary kiln
(1) rotation and/or movement
(2) lubrication
(3) seals
(4) slagging versus nonslagging operation
(b) multiple hearth
(c) fluidized bed
(d) moving hearth
(e) fixed hearth
(f) liquids incinerator
(2) ash handling
(a) conveyors

Copyright ASME International
Provided by IHS under license with ASME
No reproduction or networking permitted without license from IHS Not for Resale

(b) safety requirements
(3) fans and pumps
(a) lubrication
(b) checks
(c) inspections
(4) refractory
(a) limitations
(b) waste/chemical attack
(c) impingement
(d) hot spots
(f) Air Pollution Control Equipment
(1) theory of operation
(a) gas conditioning
(1) quench
(2) spray dryer/partial quench
(3) heat exchanger
(b) dry gas cleaning
(1) fabric filter
(2) dry electrostatic precipitator
(c) wet gas cleaning
(1) impact scrubber
(2) packed bed
(3) demister
(4) electrically enhanced (ionized wet scrubber, wet electrostatic precipitator)
(2) air pollution control system considerations (combination of devices to achieve specific objectives)
(g) Incinerator Operation and Control
(1) start-up and shutdown procedures
(2) process control
(3) emergency shutdowns (emergency vent)
(4) troubleshooting (cause and effect)
(5) interlocking systems
(6) control devices, parameters measured, accuracy and precision
(7) maintenance, preventive, regular, responsive to needs
(8) written reports on operations
(9) hazardous wastes loading under various conditions of operation
(10) incinerator operations with relationship to the air pollution control devices (APCD) and systems
(11) operating the APCD and systems
(12) operating for consistent permit compliance
(04) (h) Regulatory Requirements—RCRA Part B Permit and Interim Status Requirements, and the Hazardous Waste MACT Incineration Requirements RCRA
(1) RCRA
(a) inspections
(b) waste feed cutoff systems
(1) description of systems
(2) documentation of interlock activations
(3) documentation of testing
(c) data collection and record keeping
(d) training
(e) preparedness and prevention
(f) contingency plan
(g) waste analysis plan
(2) HW MACT
(1) standards for hazardous waste incinerators
(2) hazardous waste residence time
(3) startup, shutdown, and malfunction plans
(4) automatic waste feed cutoffs (AWFCO)
(5) AWFCO requirements when burning hazardous waste during startup and shutdown
(6) ESV operating plans
(7) operator training and certification
(8) operation and maintenance plans
(9) monitoring requirements
(10) notification requirements
(11) recordkeeping and reporting requirements
(3) Other Permit Requirements
(a) requirements of construction permits relating to operations
(b) air quality permit requirements—relationship to operations
(c) state and local requirements when more stringent than RCRA
(d) special site location requirements

3.3 Training for Certified Hazardous Waste Incinerator Operator (04)

An individual must possess sufficient knowledge of the operational, preventive maintenance, safety procedures, and practices of the facility to pass a site-specific oral examination.

The subject matter shall cover, but not be limited to
(a) materials handling operations
(b) incinerator operations
(c) boiler operations
(d) ash handling and disposal operations
(e) air pollution control operations
(f) troubleshooting
(g) site-specific permit conditions
(h) control room operations
(i) waste compositions
(j) labeling requirements
(k) continuous emissions monitors
(l) start-up and shutdown procedures
(m) applicable federal, state, and local environmental regulations as applied to the site-specific incinerator
(n) upsets and malfunctions

4 TESTING REQUIREMENTS AND PROCEDURES

4.1 Introduction

This Section describes the two-step examination procedure.

Copyright ASME International
Provided by IHS under license with ASME
No reproduction or networking permitted without license from IHS
Not for Resale

4.2 General Examination for Provisional Hazardous Waste Incinerator Operator

The general examination shall be made up of not less than 100 nor more than 150 questions. The examination shall be structured as a closed book, multiple choice, written examination in the areas defined in para. 3.2 and summarized below

(a) 5% of the questions on hazard communication and safety (para. 3.2.1)

(b) 20% of the questions on basic science, plant operations, and instrumentation (para. 3.2.2)

(c) 15% of the questions on incinerator feed mechanisms for liquid, solid, and vapor feed systems

(d) 15% of the questions on liquids, solid, and vapor handling, including storage, blending and direct incineration

(e) 10% of the questions on mechanical equipment associated with incineration, including combustion chambers for various types of incinerators, ash handling, fans, pumps, and refractory

(f) 10% of the questions on air pollution control equipment, including the theory of operation of various types of equipment

(g) 15% of the questions on operation and control of incinerators and related and associated equipment, including start-up and shutdown, emergency shutdowns, troubleshooting, and process control

(h) 10% of the questions on regulatory requirements, including permit requirements and record keeping, training, preparedness, prevention, and contingency plans

The general examination questions shall be based on the provisional training requirements contained in para. 3.2. A candidate must achieve at least a 70% grade overall.

Examinations shall be scheduled at a frequency and at locations necessitated by the number and addresses of applications received.

An applicant may retake this examination as frequently as it is offered.

4.3 Site-Specific Examination for Operator Certification

4.3.1 Oral Examination. The site-specific examination shall be an oral examination administered at the incinerator site, and shall be based on a knowledge of the operational, preventive maintenance, regulatory requirements, and safety procedures and practices of the facility.

4.3.2 Subject Matter. The subject matter of the site-specific examination for hazardous waste incinerator operator shall be based on the requirements for basic and detailed knowledge of the subject matter in para. 3.3.

4.3.3 Grading of Examination. The grading of the site-specific examination shall be as follows.

(a) The site-specific examination shall be graded and a written record made by each member of a board of examiners.

(b) Oral questions and answers shall be recorded.

(c) The board of examiners shall evaluate candidates for operator certification using the following criteria:

(1) technical knowledge

(2) ability to solve operational problems

(3) understanding of integrated plant operations

(d) A candidate's answers shall be graded on a pass/fail basis according to ASME guidelines.

(e) Certification is granted if all members of the board of examiners pass the candidate. If two of the three members approve the candidate, action on certification will be referred to an ASME appeals panel for resolution.

A candidate may retake this examination only after documentation of an additional six months of experience as an operator at a hazardous waste incinerator.

4.3.4 Board of Examiners. The board of examiners shall consist of three members, consisting of representatives from ASME, the hazardous waste industry, the operator's facility, and/or the regulatory agency or jurisdictional authority applicable to the facility. The members shall elect their own chair.

All members of the board of examiners shall comply with the ASME requirements on proprietary and confidential information. Members of the board of examiners shall communicate before the administration of the site-specific examination in order to discuss the nature and extent of the examination and the participation of each member.

5 CERTIFICATION PROCESS

5.1 Introduction

This Section covers procedures for obtaining certification.

5.2 Provisional Certification

Provisional certification indicates that the holder has demonstrated general knowledge of hazardous waste incineration. Provisional certificates are not facility specific. Provisional certificates expire five years after issuance unless renewed as specified in para. 5.2.3.

5.2.1 Application Process. Each applicant for provisional certification shall complete a written application. The application form shall request sufficient information to allow for verification of the applicant's education and experience in accordance with the requirements of para. 2.3.1. The application shall include a brief history of any previously held provisional certificates.

5.2.2 Provisional Certificate Issuance. Each candidate who passes the general examination shall be issued a provisional certificate. Each provisional certificate shall contain the following minimum information:

Copyright ASME International
Provided by IHS under license with ASME
No reproduction or networking permitted without license from IHS
Not for Resale

(a) identification as a provisional certificate
(b) certified individual's full name
(c) photograph of certified individual
(d) effective date
(e) expiration date

Each certificate shall contain a sequential number to assure traceability and accuracy, and shall be signed by a duly authorized ASME designee.

Each certificate shall be registered and available in an ASME publication, which is updated periodically.

(04) **5.2.3 Provisional Certificate Renewal.** Provisional certification shall be renewed subject to the following requirements.

(a) Employment. A provisional certification shall be renewed upon demonstration of satisfactory employment in the management and operation of a hazardous waste incineration facility for at least three of the last five years.

(b) With Operator Certification. Upon achieving or renewing operator certification, provisional certification shall be automatically renewed and the expiration dates adjusted to coincide.

(04) 5.3 Operator Certification

Operator certification indicates that the holder has demonstrated sufficient detailed knowledge to operate a hazardous waste incineration facility properly as described in this Standard. The certificate is not transportable and applies only to the facility listed. The certificate expires 5 years after its issue date unless renewed.

The certification provided according to this Standard meets the requirements of the Hazardous Waste Combustor MACT Rule [40 C.F.R. 63.1206(c)(6)(iii)(B)].

5.3.1 Application Process. Each applicant for operator certification shall complete a written application, which allows for verification that the applicant's education and experience meet the requirements of this Standard. Applications shall include a brief history of all previously held operator certificates.

5.3.2 Operator Certificate Issuance. Each candidate who passes an operator certification examination will be issued an operator certificate. Each certificate will contain the following minimum information:

(a) identification as an operator certificate
(b) certified individual's full name
(c) photograph of certified individual
(d) name and location of the facility contemplated
(e) effective date
(f) expiration date

Each certificate shall contain a sequential number to assure traceability and accuracy, and shall be signed by a duly authorized ASME designee.

Each certificate shall be registered in an ASME publication, which is updated periodically.

5.3.3 Operator Certificate Renewal. Renewal of operator certification may be by retest or through a written submission. A renewal submission must satisfy ASME that the certificate holder has maintained knowledge of the indicated facility and has acquired detailed knowledge of any facility component and permit changes occurring during the previous five years.

The operator shall demonstrate at least eighteen months of the last three years of satisfactory employment at the hazardous waste incineration facility. The certified operator shall demonstrate knowledge of operations required to comply with operating permit requirements currently applicable to the incineration facility for which the certificate would be valid, as well as adequate knowledge of operations related to any significant operational or design modifications currently in use in the hazardous waste incineration facility.

Procedures for renewal by written submission are available from ASME.

5.3.4 Changes to Facility. A change in the name or ownership of a facility shall not invalidate the operator certificate. If such a change in ownership involves changes in equipment or operating procedures, certificate holders shall demonstrate detailed knowledge of these changes at the time of the next certificate renewal.

5.4 Revocation of Certification

ASME may revoke provisional or operator certification for reasons of falsifying or providing inaccurate information in the certification process.

5.5 Appeals

Appeals regarding provisional or operator certification shall be conducted in accordance with ASME's appeal policies and procedures.

Copyright ASME International
Provided by IHS under license with ASME
No reproduction or networking permitted without license from IHS
Not for Resale

NONMANDATORY APPENDIX A
APPLYING FOR CERTIFICATION

Application forms for provisional certification and operator certification can be obtained from:

QHO Examinations
ASME
Three Park Avenue
New York, NY 10016

The following will be required to be furnished with the application for provisional certification:

(a) nonrefundable administrative filing fee

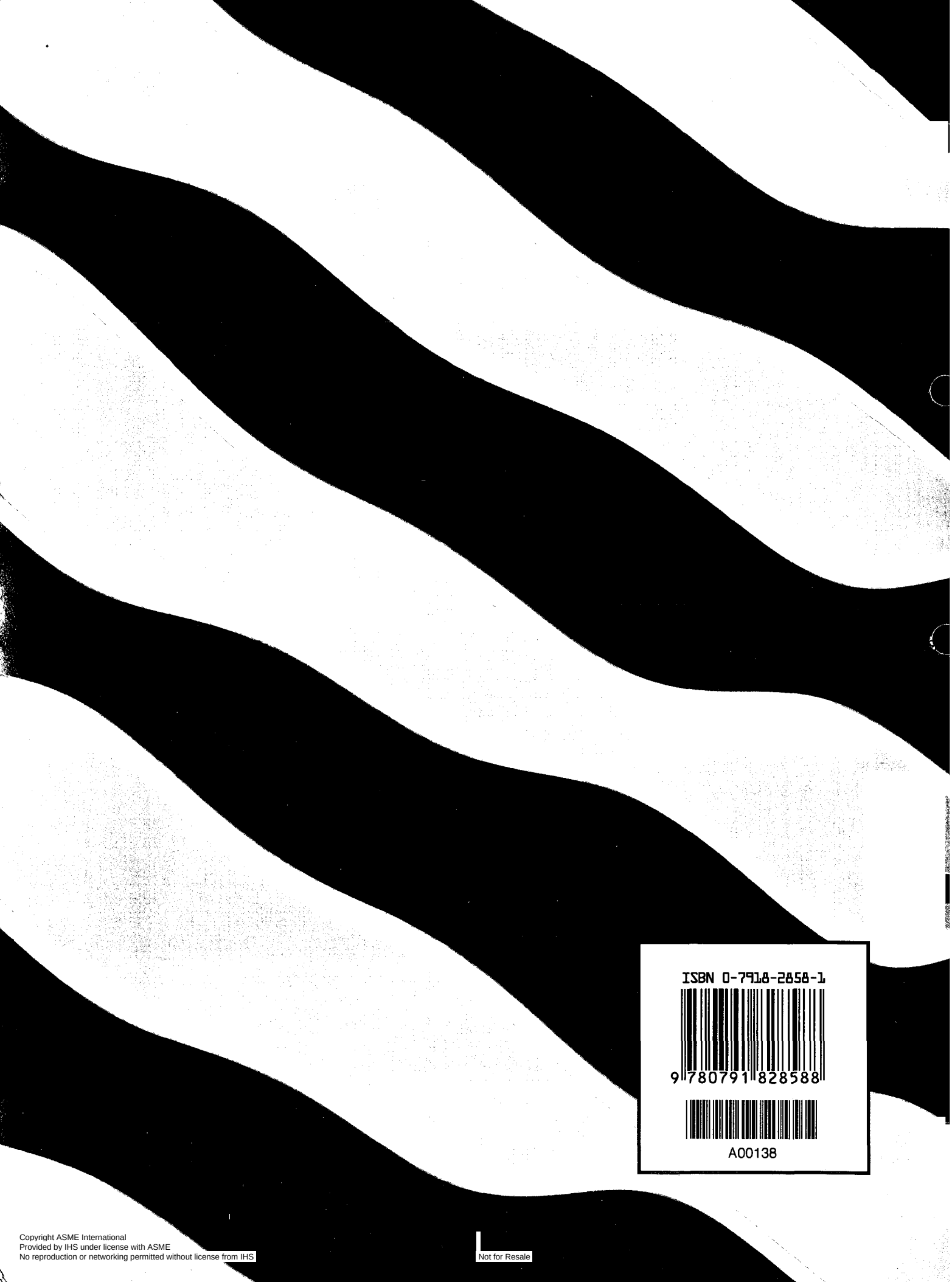
(b) examination and registration fees, which may be refundable

(c) two face-view photographs of the applicant taken within the last six months and measuring 2 in. (51 mm) square

ASME will notify the applicant upon acceptance of the completed application. Dates and locations for the examination will be provided. Applications which are not accepted will be returned to the applicant advising of the deficiency or requesting additional information.

Copyright ASME International
Provided by IHS under license with ASME
No reproduction or networking permitted without license from IHS
Not for Resale

Copyright ASME International
Provided by IHS under license with ASME
No reproduction or networking permitted without license from IHS
Not for Resale



ISBN 0-7918-2858-1

9 780791 828588

A00138

Copyright ASME International
Provided by IHS under license with ASME
No reproduction or networking permitted without license from IHS

Not for Resale