



ASME International

**ASME COMMITTEE**  
**ON**  
**NUCLEAR AIR**  
**AND**  
**GAS TREATMENT**  
**CONAGT**



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The ASME Committee on Nuclear Air and Gas Treatment is responsible for the generation and maintenance of codes and standards that address Nuclear Air and Gas Treatment;

- **ASME - AG-1** - Code on Nuclear Air and Gas Treatment
- **ASME N509** - Nuclear Power Plant Air Cleaning Units and Components
- **ASME N510** - Testing of Nuclear Air Treatment Systems
- **ASME N511** - In-service Testing of Nuclear Air Treatment Systems



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## ASME - AG-1

### Code on Nuclear Air and Gas Treatment

- 2003 Edition.
- Includes **Section HA – Housings**.
- ASME AG-1 Code provides the requirements for the design, fabrication, inspection, and testing of air cleaning and conditioning components and appurtenances used in engineered safety systems in nuclear facilities.



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## **ASME - AG-1**

### **Code on Nuclear Air and Gas Treatment**

- Written for nuclear power and nuclear fuel cycle facilities, the design requirements may be referenced for other types of facilities where high reliability and performance are required.



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## ASME - AG-1

Code Sections of AG-1 Code under development:

- **Metal Media Filters**
- **Special Round and Ducted HEPA Filters**
- **Other Adsorbers**
- **Low efficiency Filters**
- **Process Gas Treatment**



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## **ASME N509**

### **Nuclear Power Plant Air Cleaning Units and Components**

- 2002 Edition Issued
- Component requirements ASME AG-1



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## **ASME N509**

### **Nuclear Power Plant Air Cleaning Units and Components**

**This standard covers the requirements for the design, construction, qualification and acceptance testing of air cleaning units and components that make up Engineered Safety Feature (ESF) and other high efficiency air and gas treatment systems used in nuclear power plants.**



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## ASME N510

### Testing of Nuclear Air Treatment Systems

- 1998 Edition
- Reaffirmed 1995
- Revision Approved
- Expected to be published 2004





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## ASME N510

### Testing of Nuclear Air Treatment Systems

**The standard provides the guidance to field test high efficiency air treatment systems built to ASME Standard N509 requirements.**

**Tests covered include visual inspection, leak tests, structural capability, airflow capacity and distribution, air-aerosols mixing uniformity, in-place leak test of HEPA filters, in-place leak test of Adsorbers, duct damper by-pass, system by-pass, air-heater performance, and laboratory testing of adsorbents.**



## ASME N511

### **In-Service Testing of Nuclear Air Treatment System**

- *expected to be published in 2004*
- The standard provides the requirements for in-service testing of nuclear safety-related air treatment, heating, ventilating, and air conditioning systems in nuclear facilities. This standard provides the means to verify that the nuclear air treatment, heating, ventilating, and air conditioning systems continue to perform their intended function. In-service testing is conducted to monitor the performance of the equipment and system(s) to provide assurance that they continue to function within their specified design basis limits. The tests enable the user to establish system performance trends by comparing the results to Acceptance Test Reference Values and to previous in-service test results.



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# **ASME AG-1 CODE**

## **ORGANIZATION**

### **DIVISION I**

**General Requirements**

### **DIVISION II**

**Ventilation Air Cleaning & Ventilation Air Conditioning**

### **DIVISION III**

**Pressure Gas Treatment**

### **DIVISION IV**

**Testing Procedures**



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# **DIVISION I**

## **GENERAL REQUIREMENTS**

**Provides single location for articles common to all code sections**

**Section AA contains nine articles:**

- **AA-1000**      **Introduction**
- **AA-2000**      **References Documents**
- **AA-3000**      **Materials**
- **AA-4000**      **Structural Design**
- **AA-5000**      **Inspection & Testing**



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# **DIVISION I**

## **GENERAL REQUIREMENTS, cont.**

- **AA-6000**      **Fabrication, Joining, Welding, Brazing, Protective Coating, and Installation**
- **AA-7000**      **Packaging, Shipping, Receiving, Storage & Handling**
- **AA-8000**      **Quality Assurance**
- **AA-9000**      **Nameplates & Stamping**



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**DIVISION II**

**VENTILATION AIR CLEANING**

**&**

**VENTILATION AIR CONDITIONING**

- **Section BA**                      **Fans & Blowers**
- **Section DA**                      **Dampers & Louvers**
- **Section SA**                      **Ductwork**
- **Section HA**                      **Housings**
- **Section RA**                      **Refrigeration Equipment**
- **Section CA**                      **Conditioning Equipment**



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## **DIVISION II**

### **VENT. AIR CLEANING & A/C, cont.**

- **Section FA**                      **Moisture Separators**
- **Section FB**                      **Prefilters**
- **Section FC**                      **HEPA Filters**
- **Section FD**                      **Type II Adsorbers**
- **Section FE**                      **Type III Adsorbers**



## **DIVISION II**

### **VENT. AIR CLEANING & A/C, cont.**

- **Section FF**                      **Adsorbent Media**
- **Section FG**                      **Frames**
- **Section FH**                      **Other Adsorbers**
- **Section FI**                      **Metal Media Filters**
- **Section FJ**                      **Low Efficiency Filters**
- **Section FK**                      **Special Round & Duct Connected  
HEPA Filters**
- **Section IA**                      **Instrumentation & Control**





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## **DIVISION II**

# **VENTILATION AIR CONDITIONING**

- **Section BA**                      **Fans & Blowers**
- **Section DA**                      **Dampers & Louvers**
- **Section SA**                      **Ductwork**
- **Section HA**                      **Housings**
- **Section RA**                      **Refrigeration Equipment**
- **Section CA**                      **Conditioning Equipment**



## **DIVISION III**

### **PRESSURE GAS TREATMENT**

- **Section GA**                      **Pressure Vessels, Piping, Heat Exchangers, and Valves**
- **Section GB**                      **Noble Gas Hold Up Equipment**
- **Section GC**                      **Compressors**
- **Section GD**                      **Other Radionuclide Equipment**
- **Section GE**                      **Hydrogen Recombiners**
- **Section GF**                      **Gas Sampling**



## ASME CODE AG-1

### INTERNATIONAL UTILIZATION

- Promotes international exchange of information on research related to nuclear codes and standards.
- Creates synergy; avoids duplication of effort and leverages resources among international organizations conducting research related to nuclear codes and standards.
- Expands International participation in research related to upgrading nuclear codes and standards.
- Contributes to achieving International consensus on nuclear codes and standards

