

NFPA® 318

Standard for the Protection of Semiconductor Fabrication Facilities

2018



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NFPA® 318

Standard for the

Protection of Semiconductor Fabrication Facilities

2018 Edition

This edition of NFPA 318, *Standard for the Protection of Semiconductor Fabrication Facilities*, was prepared by the Technical Committee on Semiconductor and Related Facilities. It was issued by the Standards Council on August 1, 2017, with an effective date of August 21, 2017, and supersedes all previous editions.

This edition of NFPA 318 was approved as an American National Standard on August 21, 2017.

Origin and Development of NFPA 318

The Committee on Cleanrooms was formed in 1988 and held its first meeting during May of that year. The committee was organized into chapter subcommittees that separately prepared individual chapters and related appendix material for review by the full committee at meetings held October 1988, March 1989, September 1989, March 1990, September 1990, and June 1991.

The standard was submitted and adopted at the Fall Meeting in Montreal in 1991. The 1992 edition was the first edition of this standard.

The standard was revised in 1995.

The 1998 and 2000 editions were partial revisions of the standard.

The 2002 edition of this standard incorporated Article 51 of NFPA 1, *Uniform Fire Code*, and was reformatted to comply with the *Manual of Style for NFPA Technical Committee Documents*.

The 2006 edition contained a new chapter addressing quantity limits for hazardous materials following coordination of this information with *NFPA 5000, Building Construction and Safety Code*.

The 2009 edition clarified the requirements for both Type 1 and Type 2 subatmospheric gas systems. Revisions also included the removal of seismic considerations, in order to focus the scope of the document.

The 2012 edition provided additional modifications to the requirements for subatmospheric gas systems (SAGS) based on the technical committee's review of necessary safeguards for these systems. Several reference standards were updated as part of this revision.

The 2015 edition was completely reorganized in an effort to make the standard more user friendly. The term *subatmospheric gas system* was revised to *subatmospheric gas source* throughout the standard to clarify its meaning. Various categories of hazardous materials were identified, and the concept of "HPM risk assessment" was introduced. New requirements were added throughout the standard that encompassed the following subject matter: hazardous materials, liquid chemical storage and handling, gas storage and handling, production and support equipment, waste treatment, and fire protection.

For the 2018 edition, the most noteworthy changes are major revisions to the requirements for both gas-detection systems as well as smoke detection systems. Both topics were technically modified and also revised for clarity. Gas detection criteria has been revised to clarify when detection is needed and where it is required to be physically provided. The smoke detection requirements were revised to include not just minimum capabilities of detectors but also coverage areas, alert and alarm sensitivities, and maximum transport times taken from NFPA 76, which were based on research conducted by the Fire Protection Research Foundation.

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