

American National Standard

Specification and Performance of On-Site Instrumentation for Continuously Monitoring Radioactivity in Effluents

Sponsor

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Foreword

The Joint Subcommittee of American National Standards Committees N13 and N42, which was responsible for the development of this standard, was established by authority of the Chairmen of American National Standards Committees N13 and N42 to represent the interests of the respective parent committees. The Joint Subcommittee comprises 50 percent manufacturer and 50 percent user membership; thus this standard includes the additional feature of incorporating the experience of both the manufacturer and the user.

The American National Standards Committee on Radiation Protection, N13, which, together with the American National Standards Committee on Instrumentation, N42, reviewed and approved this standard, had the following membership at the time of approval:

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The American National Standards Committee on Instrumentation, N42, had the following membership at the time of approval:

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Specification and Performance of On-Site Instrumentation for Continuously Monitoring Radioactivity in Effluents

1. Introduction

The release of radioactivity from nuclear facilities to the environment generally is monitored by installed instrumentation. The objective of such instrumentation is to measure the quantity or rate, or both, of release of radionuclides in the effluent streams and to provide documentation useful for scientific and legal purposes. This standard applies to continuous monitors that measure normal releases, detect inadvertent releases, show general trends, and annunciate radiation levels that have exceeded predetermined values.

2. Scope

This standard provides recommendations for the selection of instrumentation specific to the continuous monitoring and quantification of radioactivity in effluents released to the environment. The effluent streams considered may contain radioactive gases, liquids, particulates, or dissolved solids singly or in combination. This standard specifies detection capabilities, physical and operating limits, reliability, and calibration requirements and sets forth minimum performance requirements for effluent monitoring instrumentation. Unless otherwise specified, the criteria herein refer to the total system. This standard applies only to monitoring during routine operation that includes abnormal releases. Emergency situations, where additional performance capability will be required, are a matter of separate consideration.

Also outside the scope of this standard are sample extraction and laboratory analyses, normally used for intercomparison between monitor calibrations and laboratory analyses, and other applications for continuous monitoring instrumentation such as environmental monitoring or process control. Sampling techniques are covered in ANSI N13.1-1969, Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities.