Position Classification Flysheet for Safety Engineering Series, GS-0803

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SERIES DEFINITION

This series includes positions that require the performance of professional engineering work to eliminate or control hazardous conditions resulting from human error, equipment and machine operations which may lead to injury to persons and damage to property. The work requires the application of: (a) advanced mathematical techniques; (b) professional engineering principles, methods, and techniques; (c) safety related elements of the physical sciences, ergonomics, psychology and physiology; and (d) safety principles, standards, practices, and analytical techniques.

This standard cancels and supersedes the standard for the Safety Engineering Series; GS-0803, issued in June 1971.

SERIES COVERAGE

Within the Federal service, professional safety engineering work is performed in a wide variety of environments such as health research, energy generation, construction, industrial and manufacturing operations, recreation, and transportation, etc.

The safety engineer is concerned with the identification, analysis and control of occupational hazards requiring the application of professional engineering knowledge, skill, and abilities. Typically, safety engineers are involved in the following kinds of activities:

- Advise on structural safety requirements based on failure mode analysis of such factors as fatigue, stability, stress, concentration and creep;

- Develop and apply methods for the safe installation of storage and piping systems for compressed gases;

- Design protective equipment or safety devices for machines and redesign machines and plant equipment to eliminate occupational hazards;

- Review proposed occupational safety policies, guidelines and standards to determine their consistency with accepted engineering principles and practices and recommend technical changes as needed.

The safety engineer applies knowledge of psychological and physiological factors to design safety features and controls, compensating for the possibility of human errors in the operation of machinery and equipment.

DISTINCTION BETWEEN THE SAFETY AND OCCUPATIONAL HEALTH MANAGEMENT SERIES, GS-0018, AND SAFETY ENGINEERING SERIES, GS-0803

Positions in the two series differ primarily in the kind of engineering knowledges required. Safety and occupational health managers and specialists apply a practical knowledge of engineering and scientific principles and methods to identify, evaluate and control occupational hazards such as those encountered on a construction site, in an industrial plant, or at a port facility.

Professional safety engineering work requires application of knowledge of higher mathematics, physics, chemistry, and engineering theories, methods, and techniques such as can be acquired through education equivalent to that represented by the completion of a full four-year curriculum leading to a bachelor's degree in engineering. (See Engineering and Architecture Group, GS-0800.)

Safety engineering positions are characterized by duties requiring the development of standards which set tolerances, stress ratios strength of materials and other related engineering requirements. Safety engineers evaluate proposed designs, methods, and procedures for technical conformance with engineering criteria. Examples of work include reviewing design specifications for construction of hospital structures, designing machine guards for industrial equipment, and evaluating plans and specifications for installation or modification of a heating or ventilation system.

EXCLUSIONS

Excluded from this series are positions that involve primarily:

1. Administrative and managerial work concerned with occupational safety programs, regulations and standards that does not require application of professional knowledge of the principles, methods, and techniques of engineering. Such positions are classified in the Safety and Occupational Health Management Series, GS-0018.

2. Professional and scientific work involving the identification and evaluation of conditions affecting the health and efficiency of employees or the citizens of adjacent communities, the formulation and recommendation of measures to eliminate or control occupational health hazards, and the promotion of occupational health programs for instructing and motivating managers and employees in the prevention as well as correction of potential health hazards. These positions are classified in the Industrial Hygiene Series, GS-0690.

3. Professional and scientific work concerned with the protection of humans and the surrounding environment from undesired exposure to ionizing radiation and that requires

application of professional knowledge and competence in health physics. These positions are classified in the Health Physics Series, GS-1306.

4. Specialized safety work for which specific occupations have been established. Such positions are classified in the appropriate subject matter series, e. g.,

   Fire Protection and Prevention Series, GS-0081;
   Consumer Safety Series, GS-0696;
   Air Safety Investigating Series, GS-1815;
   Mine Safety and Health Series, GS-1822;
   Aviation Safety Series, GS-1825;
   Consumer Safety Inspection Series, GS-1862;
   Railroad Safety Series, GS-2121;
   Highway Safety Series, GS-2125.

TITLES

Safety Engineer is the authorized title for all positions in this series. Positions which meet or exceed the criteria of the General Schedule Supervisory Guide for evaluation as a supervisor are titled Supervisory Safety Engineer.

GRADE EVALUATION

Safety engineering work requires application of professional knowledge from many engineering fields to eliminate or control hazardous conditions which may lead to injuries or damage to property. Professional safety engineering duties should be evaluated by reference to classification standards for the appropriate engineering series or the grade evaluation guides for various engineering functions such as research, equipment development, or test and evaluation. The General Grade-Evaluation Guide for Nonsupervisory Professional Engineering Positions may be used when the function and type of work performed is not adequately covered by other grade-evaluation guides or standards for other professional engineering series.