

City and County of San Francisco
Carol Isen
Human Resources Director



Department of Human Resources
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**NOTICE OF FINAL ACTION TAKEN BY THE
HUMAN RESOURCES DIRECTOR**

Date: October 15, 2021

Re: **Notice of Proposed Classification Actions – Final Notice No. 08 FY 2021/2022
(copy attached).**

In the absence of requests to meet addressed to the Human Resources Director, the classification actions contained in the above referenced notice became effective October 15, 2021.

Carol Isen
Human Resources Director

by: 

Steve Ponder
Classification and Compensation Director
Human Resources

cc: All Employee Organizations
All Departmental Personnel Officers
DHR – Class and Comp Unit
DHR – Client Services Unit
DHR – Employee Relations Unit
DHR – Recruitment and Assessment Unit
DHR – Client Services Operations
Carol Isen, DHR
Sandra Eng, CSC
Sue Hwang, SFERS
Theresa Kao, Controller/ Budget Division
E-File

**CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF HUMAN RESOURCES**

Title: 5217

Job Code: Senior Fire Protection Engineer

DEFINITION

Under general administrative direction, the 5217 Senior Fire Protection Engineer (FPE) provides technical and professional supervision; guidance and mentoring the activities of 5215 Fire Protection Engineers (FPE) and the 5201 Junior Engineer (electrical, civil, or mechanical) that work for the Bureau of Fire Prevention (BFP) of the San Francisco Fire Department (SFFD). The Senior FPE performs highly technical and administrative functions in connection with the design, construction, operation and maintenance of fire protection projects and systems; Professionally and technically oversees the SFFD's 5215 and 5201 engineers in the review of designs, drawings, specifications, applicable codes, and cost valuations for a variety of engineering, architectural and architectural design, and construction projects.

DISTINGUISHING FEATURES

5217 Senior FPE is distinguished from class 5215 FPE by its higher-level management and policy making responsibility on technical matters. The focus is on highly technical and professional functions in connection with the engineering, design, construction, operation and maintenance of projects and Fire Protection systems.

The 5217 Senior FPE will provide all needed technical consistency, training and guidance based on experience to support the 5215 FPEs professionally to handle complex projects, engineering evaluation, complicated local equivalencies, local SFFD code developments (San Francisco Fire Code and SFFD Administrative Bulletins) and providing code-based trainings to Bureau of Fire Prevention staff.

SUPERVISION EXERCISED

Supervises professional and sub-professional engineers This senior level classification may manage the personnel of an entire engineering unit or work group.

EXAMPLES OF IMPORTANT AND ESSENTIAL DUTIES

According to Civil Service Commission Rule 109, the duties specified below are representative of the range of duties assigned to this job code/class and are not intended to be an inclusive list.

1. Consults with design professionals, SFFD's 5215 FPEs, Department of Building Inspection engineering staff, plan review staff, and public officials, to resolve differences among professional personnel on construction design.
2. Trains, monitors, and evaluates subordinate Engineering staff to ensure that work methods are effective.
3. Establishes and implements departmental policies, procedures, and administrative directives in accordance with applicable laws, ordinances, codes, standards, rules, regulations, and legislative policies and procedures by interpreting, explaining, monitoring, and evaluating the functional activities of the organization.
4. Represents the SFFD on technical and professional matters and consults with members of the public (contractors, architects, engineers, building managers, and owners, etc.) and other government agencies regarding fire code, standard, and ordinance issues; gives lectures and

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arranges life-safety demonstrations; and represents the Fire Department on fire code and technical issues as necessary and in connection with specific department issues.

5. Writes, and/or reviews and approves technical engineering letters, reports, memos, recommendations, routine correspondence, and other documents.

6. Performs and supervises review of fire protection plans and systems, equivalency proposals, permit applications, subdivision and parcel maps, etc., to ensure compliance with applicable codes, ordinances, and standards; reviews site permits, architectural, mechanical, electrical, and plumbing plans and specifications for code compliance; ensures that fire code provisions are included where hazardous processes and/or dangerous chemicals or radioactive materials are involved; and submits recommendations to the Fire Marshal for approval or disapproval of plans or specifications.

7. Advises and provides training to Fire Department personnel regarding applicable codes, technical engineering aspects of fire prevention work, plan review, and technical research; prepares technical documents as appropriate; and assists the Chief, Division of Fire Prevention and Investigation (Fire Marshal) in the training of Fire Department Personnel.

8. Oversees inspections and acceptance tests for fire protection systems; and participates in inspections of buildings and other structures periodically during the course of construction to ensure compliance with approved fire protection plans and testing procedures, as directed.

9. Reviews codes, ordinances, and fire protection standards from other jurisdictions for possible local applications; assists in the development of new codes and ordinances; assists in the revision of codes, ordinances, standards, and Fire Department Administrative Bulletins; and reviews new products, listings, materials, fire protection systems and equipment for use in local fire prevention applications.

10. Provides professional, technical guidance and assistance to the department in the design, testing, and potential of proposed new fire-fighting apparatus and equipment as well as fire-retardant materials.

11. Reviews investigations of fires and determinations regarding possible structural, mechanical, alarm, fire extinguishing, or other safety system failures; prepares reports as required.

12. Evaluates performance-based analysis to determine whether proposed fire protection systems are acceptable with regard to the intent of codes, standards, and ordinances; evaluates conditions as necessary to ensure that a proposed performance-based design is acceptable; communicates acceptability of performance-based designs to Fire Department officials; and performs and analyzes results of hydraulic water flow tests.

KNOWLEDGE, SKILLS, AND ABILITIES

Knowledge of: technical supervision and guidance; coaching, training, and professional development; fire protection engineering methods and practices; installed fire extinguishing/alarm and other fire protection systems; safety practices to be followed in structures where hazardous solids, liquids, or gases are to be manufactured, used or stored; Emergency Responders Radio Coverage Systems (ERRCS), applicable codes and plan review; alternative fire suppression systems; diesel generators, fire pumps, and associated fuel oil systems; Occupant

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Evacuation Elevators (OEE) with Occupant Evacuation Operation (OEO) design features and applicable codes; firefighting equipment, its uses, capabilities, and limitations; the California Building Code as it relates to fire protection and life safety; National Fire Protection Association Codes and Standards; the California Fire Code; the Health and Safety Code and Title 19 as each relates to fire protection; effective methods of training; correct grammar, spelling, and syntax to write coherent reports and correspondence; computer modeling and engineering analyses to evaluate proposed performance-based designs; the principles of hydraulics related to water supply delivery; computer software such as Microsoft Word, Microsoft Excel, Microsoft Access, PowerPoint, etc.; statistics regarding testing and performance of fire protection and life safety systems; structural fire protection; the nature and characteristics of fire and related hazards; how fires originate, develop, and spread; fire prevention practices; different types of elevator systems; manual and automatic fire detection systems; fire protection systems and practices; the effects of fire and fire effluents on buildings, fire prevention and detection systems, and human behavior; the practical difficulties faced in implementing the provisions of codes, standards, and regulations; the hazards and risks associated with fire; the methods and practices of performance-based analysis; engineering standards, calculation methods, and other forms of scientific information appropriate for performance-based application and methodology; the sources, methodologies, and data used in fire-modeling analysis and performance-based design; the extent of acceptance in the professional community of system/ performance evaluations; the correct documentation of methods of mathematical modeling; and statistics regarding performance-based design.

Ability or Skill to: Plan, schedule, guide, motivate, train, monitor and evaluate the work of professional and technical personnel; apply sound engineering, theory to practical design problems; oversee complex projects, studies and processes; ensure adherence to established policies and procedures; train and develop 5215 FPEs in professional and technical areas and procedural changes; oversee evaluations of engineering, sprinkler systems, fire pumps, smoke control systems, fire alarm systems, Fire Service Access Elevators, building perimeter seals, architectural, mechanical, electrical, and plumbing plans, designs, and specifications to ensure compliance with applicable codes, ordinances, and standards; evaluate construction materials to ensure compliance with applicable codes, ordinances, and standards; oversee evaluations of smoke control analysis reports to ensure compliance with applicable codes, ordinances, and standards; perform and oversee hydraulic water flow test and analyze the results of the test; work effectively with engineering and fire protection professionals; evaluate local equivalencies (alternate means and methods to meet code requirements); analyze building evacuation, fire resistive construction, and new products; provide guidance and authority to subordinates when deciding on complicated or novel design equivalencies or in stressful situations; communicate effectively with peers, subordinates, supervisors, and members of the public from different cultures and backgrounds; make public presentations regarding fire protection, inspection, and investigation; write and review technical reports, memos, and letters using correct grammar, spelling, and syntax; analyze and creatively resolve conflicts between code and operational and economic concerns; be tactful in dealings with higher authorities regardless of whether the authority is technically or organizationally higher; interpret federal, state, and local codes, ordinances, and standards pertaining to fire protection; work efficiently with minimal supervision to complete assigned tasks expeditiously; establish and maintain effective working relationships with other governmental agencies; understand and articulate the goals and objectives of the Department regarding building construction and

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alteration; identify fire hazards and risks in order to take corrective action; identify regulatory compliance issues; perform and communicate with Department personnel regarding the acceptability of performance-based analyses; verify the implementation of performance-based designs via construction documents and field observations; evaluate conditions necessary to ensure that a performance-based design will function effectively over the life of the building; correctly document methods of mathematical modeling, and recognize the limitations of modeling and calculation, and to understand resulting implications; determine whether various methods of performance-based design are based on sound scientific principles; determine whether proposed applications are within the scope and limitations of the supporting information, including the range of applicability for which documented validation exists; evaluate the performance criteria that will be used to judge trial designs; and evaluate fire design scenarios; and assess whether a particular design meets the a priori performance criteria.

MINIMUM QUALIFICATIONS

These minimum qualifications establish the education, training, experience, special skills and/or license(s) which are required for employment in the classification. Please note, additional qualifications (i.e., special conditions) may apply to a particular position and will be stated on the exam/job announcement.

Education:

Possession of a baccalaureate degree in fire protection, mechanical, electrical, chemical, or civil engineering, or a related engineering field, from an accredited college or university.

Experience:

Seven (7) years of professional experience in fire protection analysis including building design, specification writing, construction inspection, and plan review (including reading and interpreting architectural plans, computer fire modeling, and review of fire protection and life safety systems such as sprinkler and fire pump systems, smoke removal systems, fire resistive construction, means of egress, etc.) Five (5) of the years must be while licensed as a California Fire Protection Engineer, performing duties equivalent to a 5215 FPE.

License and Certification:

A valid California Driver License

Possession of a valid Fire Protection Engineer license issued by the California Board of Registration for Professional Engineers

Substitution:

A valid registration as a Fire Protection Engineer from another state (which is transferable to the State of California) may substitute for the required Fire Protection Engineer license.

SUPPLEMENTAL INFORMATION

PROMOTIVE LINES

From 5215 Fire Protection Engineer

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ORIGINATION DATE: 10/15/2021

AMENDED DATE:

REASON FOR AMENDMENT: *To accurately reflect the current tasks, knowledge, skills & abilities, and minimum qualifications.*

BUSINESS UNIT(S): COMMN