

**NOTICE OF PROPOSED CLASSIFICATION ACTIONS BY
THE HUMAN RESOURCES DIRECTOR**

The following actions are being posted in accordance with Civil Service Rule 109. In the absence of a protest addressed to the Human Resources Director, the proposed changes will become final seven (7) calendar days from the posting date.

Posting No: 46
Fiscal Year: 2016/2017
Posted Date: 04/21/2017
Reposted Date: 08/24/2017

AMEND THE FOLLOWING JOB SPECIFICATION(S):
(Job specification(s) attached.)

Item #	Job Code	Title
1	5215	Fire Protection Engineer

Protests on an item should be addressed to the Human Resources Director and can be submitted by mail to the City and County of San Francisco, Department of Human Resources, 1 South Van Ness Ave, 4th Floor, San Francisco, CA 94103 or by email to DHR.ClassificationActionPostings@sfgov.org. All protests must be received in writing no later than close of business seven (7) calendar days from the posting date, and must include the posting and item number(s), the basis on which the protest is submitted and identify the affected parties.

For additional information regarding this proposed classification action, please contact Stephen Fu, Management Assistant, at (415) 701-5680 or by email at Stephen.Fu@sfgov.org.

Copies of this notice may be obtained from the Department of Human Resources or from the website at: <http://sfdhr.org/index.aspx?page=109>. Copies of Civil Service Rule 109 may be obtained from the Department of Human Resources, the office of the Civil Service Commission at 25 Van Ness Ave, Suite 720, San Francisco, CA 94102 or from the website at: <http://www.sfgov3.org/index.aspx?page=328>.

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
Micki Callahan, DHR
Michael Brown, CSC
Sandra Eng, CSC
Christopher Colandene, SFERS
Theresa Kao, Controller/ Budget Division
E-File

CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF HUMAN RESOURCES

Title: Fire Protection Engineer
Job Code: 5215

DEFINITION

Under general direction, performs challenging and responsible professional engineering review and inspection work in the specialized field of fire prevention and safety; and advises fire inspection personnel engaged in fire prevention work; ~~and performs related duties as required.~~

DISTINGUISHING FEATURES

~~A Fire Protection Engineer performs specialized and technical duties in fire protection and safety. Positions in this class require thorough knowledge in the principles and practices of engineering, fire protection and fire safety standards. This class **5215 Fire Protection Engineer** is distinguished from classes in the building inspector series **6331 Building Inspector, 6333 Senior Building Inspector, 6334 Chief Building Inspector, 6281 Fire Safety Inspector II, and class H4 Inspector, Fire Department Bureau of Fire Protection and Public Safety** in that the latter former is a licensed professional engineer lacks the specialized knowledge in fire protection and safety standards and procedures, and the possesses the expertise to inspect and test fire protection and suppression systems. It is distinguished from ~~class H4 Inspector, Bureau of Fire Protection and Public Safety~~ in that the latter lacks the technical background necessary to perform the full spectrum of Fire Protection Engineer duties.~~

SUPERVISION EXERCISED

None.

MAJOR, 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. Reviews fire protection plans and systems, equivalency proposals, permit applications, subdivision and parcel maps, etc., to ensure compliance with applicable codes, ordinances, and standards building and other construction plans and specifications for adequate and appropriate life safety systems and equipment; reviews site permits, architectural, mechanical, electrical, and plumbing plans and specifications for code compliance; ensures that fire safety 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.
2. Advises and pProvides training technical assistance and guidance to Fire Department personnel regarding applicable codes, technical engineering aspects of fire prevention work, plan review, and technical research engaged in fire prevention work; prepares technical documents as appropriate; and assists the Chief, Division of Fire Prevention and Investigation (Fire Marshal) in the training of Fire Department Personnel. ~~and~~

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~~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.~~

3. Inspects and witnesses 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.

~~3. Assists the Chief, Division of Fire Prevention and Investigation (Fire Marshal) in the training of Fire Department Personnel in the technical, engineering aspects of fire prevention/inspection work; prepares instructional materials for use by inspectors throughout the department; gives lectures and arranges life-safety demonstration.~~

4. Interacts 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 arranges life-safety demonstrations; and represents the Fire Department on fire code and technical issues as necessary.

~~45. Reviews codes, ordinances, and fire protection standards from other jurisdictions for possible local applications; assists in the development of new or revised codes and ordinances; **assists in the revision of codes, ordinances, standards, and Fire Department Administrative Bulletins;** and drafts recommendations for the establishment of improved fire protection policies and practices, **and reviews new products, listings, materials, fire protection systems and equipment for use in local fire prevention applications.**~~

~~6. 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.~~

~~57. Investigates sites of fires and makes determinations regarding possible structural, mechanical, alarm, fire extinguishing, or other safety system failures; prepares reports as required.~~

~~6. 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.~~

~~7. Makes recommendations to the Fire Marshal regarding requests for permits for hazardous~~

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~~chemical processes and installations.~~

8. Conducts ~~Evaluates~~ performance-based analysis or reviews performance-based design 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.**

9. May act for the Senior Mechanical Engineer in his/her absence.

IMPORTANT AND ESSENTIAL KNOWLEDGES, SKILLS, AND ABILITIES

Knowledge of: fire protection engineering methods and practices; installed fire extinguishing alarm and other fire protection related safety systems; safety practices to be followed in structures where hazardous solids, liquids, or gases are to be manufactured, used or stored; firefighting equipment, its uses, capabilities, and limitations; the ~~Uniform~~ 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 whether 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 systems and practices; different types of elevator systems; manual and automatic fire detection systems; fire control protection and suppression systems and practices; the effects of fire and fire effluents on buildings, fire prevention and detection systems, and ~~people~~ 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

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mathematical modeling; and statistics regarding performance-based design.

Ability and Skill to: ~~check and evaluate engineering, **sprinkler, architectural, mechanical, electrical, and plumbing** plans, and designs, **and specifications** to ensure compliance with applicable codes, ordinances, and standards; check and evaluate engineering specifications to ensure compliance with applicable codes, ordinances, and standards; **evaluate construction materials to ensure compliance with applicable codes, ordinances, and standards;** evaluate smoke removal **control** analysis reports to ensure compliance with applicable codes, ordinances, and standards; ~~evaluate sprinkler plans and calculations to ensure compliance with applicable codes, ordinances, and standards; evaluate architectural plans to ensure compliance with applicable codes, ordinances, and standards;~~ perform hydraulic water flow test and analyze the results of the test; work effectively with engineering and fire protection professionals; make critical decisions in stressful situations; communicate effectively with peers, supervisors, and members of the public from different cultures and backgrounds; make public presentations regarding fire protection, inspection, and investigation; write 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 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;** ~~and correctly document methods of mathematical modeling~~ **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.**~~

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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 ~~from an accredited college or university~~ in fire protection, ~~civil~~, mechanical, electrical, chemical, or civil engineering, or a related engineering field, ~~from an accredited college or university.~~

Experience:

Six (6) years of ~~verifiable~~ 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.)

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 degree in fire protection engineering from an accredited college or university, as documented by copy of college transcripts, may be substituted for one (1) year of the required professional experience.

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

ORIGINATION DATE: 10/15/1973

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DEPARTMENT OF HUMAN RESOURCES**

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AMENDED DATE: 11/05/1979; 04/25/01; **08/XX/17**

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

BUSINESS UNIT(S): COMMN