

STAFFING

1. **REASON FOR ISSUE:** To establish a Department of Veterans Affairs (VA) qualification standard for Healthcare Engineer, General Schedule (GS)-0801, series appointed under 38 U.S.C. § 7401(3), Appointments in Veterans Health Administration, and 38 U.S.C. § 7405(a)(1)(B), Temporary full-time appointments, part-time appointments, and without-compensation appointments.
2. **SUMMARY OF CONTENTS/MAJOR CHANGES:** This handbook contains mandatory procedures on staffing. This establishes the Healthcare Engineer occupation under VA's title 38 hybrid excepted service employment system in accordance with the authority established under Pub. L. 111-163, Caregivers and Veterans Omnibus Health Services Act of 2010. The VA Secretary has authority under 38 U.S.C. § 7402 to prescribe qualifications for occupations identified in or established under 38 U.S.C. § 7401(3), Appointments in Veterans Health Administration and 38 U.S.C. § 7405(a)(1)(B), Temporary full-time appointments, part-time appointments and without-compensation appointments. The new standard is effective on the date of this publication. This qualification standard will be incorporated into the electronic version of VA Handbook 5005, Staffing, that is maintained on the [Office of the Chief Human Capital Officer Website](#) and the [VA Publications Website](#).
3. **RESPONSIBLE OFFICE:** Office of the Chief Human Capital Officer (OCHCO), Recruitment and Placement Policy Service (059).
4. **RELATED DIRECTIVE:** VA Directive 5005, Staffing.
5. **RESCISSIONS:** None.

CERTIFIED BY:

**BY DIRECTION OF THE SECRETARY OF
VETERANS AFFAIRS:**

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DISTRIBUTION: Electronic only

NOTE: This transmittal page accompanied the former VA Handbook 5005, Staffing publication. It is provided for reference to the establishment of this qualification standard.

**HEALTHCARE ENGINEER
QUALIFICATION STANDARD
GS-0801
Veterans Health Administration**

- 1. COVERAGE.** The following are requirements for appointment as a Healthcare Engineer in the Veterans Health Administration (VHA). These requirements apply to all VHA general engineers employed in the General Schedule (GS) 0801 series. Healthcare Engineers provide overarching professional services focusing on engineering and/or architecture involved in all aspects of the healthcare delivery processes and systems. They ensure the appropriate infrastructure, facilities and equipment are available for the medical mission. Healthcare Engineers are a specialized subset of more broadly defined professional engineering or architect occupations with general or specialty area degrees (e.g., general engineering, mechanical engineering, electrical engineering, civil engineering, architecture, architectural engineering, etc.). Healthcare Engineers collaborate with biomedical engineers to provide seamless integration of medical technology into the patient care environment. Healthcare Engineers specify the spatial layouts, infrastructure and environmental requirements to enable medical equipment integration into the healthcare facility. Healthcare Engineers must understand functional relationships in how clinicians, patients and supplies circulate within the treatment space where the medical equipment is located. Using healthcare engineering knowledge, they plan and design custom site preparation requirements for medical equipment, including installation.

NOTE: Some Engineer and Architect specialty disciplines may be excluded when not fully performing the duties and assignments described in this standard, such as the GS-0807 Landscape Architect, the GS-0854 Computer Engineer, the GS-0858 Biomedical Engineer (currently covered under VA Handbook 5005, Part II, Appendix G38) and the GS-0890 Agricultural Engineer.

2. AUTHORITIES.

- a. [P.L. 111-163, Caregivers and Veterans Omnibus Health Services Act of 2010;](#)
- b. [38 U.S.C. § 7401, Appointments in Veterans Health Administration;](#)
- c. [38 U.S.C. § 7402, Qualifications of appointees;](#)
- d. [38 U.S.C. § 7403, Period of appointments; promotions;](#)
- e. [38 U.S.C. § 7405, Temporary full-time appointments, part-time appointments and](#)

[without-compensation appointments](#);

- f. [38 U.S.C. § 7407, Administrative provisions for section 7405 and 7406 appointments](#).

3. DEFINITIONS.

- a. **Appointing Official.** The Human Resources Officer is delegated appointing authority, to process and authenticate notifications of personnel actions and authority to effect management approved employment actions on behalf of officials, employees and facilities for which service is provided.
- b. **Approving Official.** The Veterans Integrated Service Network (VISN) Director, VHA Office of Healthcare Engineering Director or facility Director or designee, is the approving official and will determine whether to approve or disapprove the appointment of employees in the hybrid occupations.
- c. **Journey Level.** The full performance level for this qualification standard is the GS-12 grade level.
- d. **Creditable Experience.** To be creditable, the experience must have been accomplished after satisfying the basic education requirement as outlined in paragraph 3.b. of this appendix, required the use of knowledge, skills and abilities (KSAs) directly applicable to the assignment and be associated within the scope of the healthcare engineering profession.
- e. **Quality of Experience.** Qualifying experience must be at a level comparable to healthcare engineering experience at the next lower grade level of the position being filled. For all assignments above the full performance level, the higher-level duties must consist of significant scope, administrative independence, complexity and range of variety as described in this standard at the specified grade level and be performed by the incumbent at least 25% of the time.
- f. **Part-Time Experience.** Part-time experience is creditable according to its relationship to a full-time workweek. For example, an individual employed 20 hours per week, or on a half time basis, would receive one full-time work week of credit for each two weeks of service.

4. BASIC REQUIREMENTS. To qualify for appointment to this position, all applicants must possess the following:

- a. **Citizenship.** Be a citizen of the United States (U.S.). Non-citizens may be appointed when it is not possible to recruit qualified citizens in accordance with 38 U.S.C. § 7407(a).
- b. **Education.**
 - (1) **Bachelor's degree or higher in Engineering or Architecture.** To be acceptable, the curriculum must be from a school with at least one

curriculum accredited by the Accreditation Board for Engineering and Technology, Engineering Accreditation Commission (excludes engineering technology) or National Council of Architectural Registration Boards curriculum. Examples of acceptable engineering and architectural degrees include, but are not limited to: Electrical Engineering, Mechanical Engineering, Biomedical Engineering, Civil Engineering, Architecture and Architectural Engineering. Titles may vary from educational institutions and change over time;

OR

- (2) **Evidence of passing the Fundamentals of Engineering Examination with a bachelor's degree.** Evidence can be in the form of an Engineering in Training certificate issued from any State, the District of Columbia, Guam or Puerto Rico, or test results from the National Council of Examiners for Engineering and Surveying (NCEES) identifying a passing score;

OR

- (3) **Evidence of current professional registration or licensure as a Professional Engineer or Architect.** Evidence of current professional registration or licensure can be from any State, the District of Columbia, Guam or Puerto Rico.

c. **Grandfathering Provision.** All individuals employed in VHA in this occupational series or in another occupational series performing the duties as described in the qualification standard on the effective date of this qualification standard, are considered to have met all the qualification requirements for the grade held including positive education that is part of the basic requirements of the occupation. For employees who do not meet all the basic requirements of this standard, but met the qualifications applicable to the position at the time they were appointed to the position, the following provisions apply:

- (1) Employees may be reassigned, promoted up to and including the full performance (journey) level or changed to lower grade within the occupation, but may not be promoted beyond the journeyman level or placed in supervisory or managerial positions.
- (2) Employees in an occupation that requires a licensure/certification/registration only at higher grade levels must meet the licensure/certification/registration requirement before they can be promoted to those higher grade levels.
- (3) Employees who are appointed on a temporary basis prior to the effective date of the qualification standard may not have their temporary appointment extended or be reappointed, on a temporary or permanent basis until they fully meet the basic requirements of the standard.

- (4) Employees who are converted to title 38 hybrid status under this provision and subsequently leave the occupation lose protected status and must meet the full VA qualification standard requirements in effect at the time of reentry to the occupation.
 - (5) Employees initially grandfathered into this occupation, who subsequently obtain additional education and/or licensure/registration that meet all the basic requirements of this qualification standard must maintain the required credentials as a condition of employment in the occupation.
- d. **Foreign Education.** To be creditable, engineering, architecture or related education completed outside the U.S. must be submitted to a private organization that specializes in the interpretation of foreign educational credentials and such education must have been deemed at least equivalent to a Bachelor's degree as outlined in paragraph 3.b. of this appendix.
 - e. **Physical Requirements.** See VA Directive and Handbook 5019, Employee Occupational Health Service for requirements.
 - f. **English Language Proficiency.** Healthcare Engineer candidates must be proficient in spoken and written English in accordance with 38 U.S.C. § 7403(f).
5. **GRADE DETERMINATIONS.** In addition to the basic requirements outlined in paragraph 3, the following criteria must be met when determining the grade of candidates.
- a. **Healthcare Engineer, GS-07.**
 - (1) **Experience.** None beyond the basic requirements.
 - (2) **Assignment.** At the entry level, Healthcare Engineers serve in a career development position, performing under close supervision of a supervisor or qualified individual who reviews and ensures the employee meets competency requirements. At the entry level, they perform general healthcare engineering assignments to gain knowledge and experience necessary to support engineering operations, project management and compliance. Developmental assignments include, but are not limited to, assessing healthcare facility programs and making recommendations to assure compliance with relevant regulations, guidelines and standards; applying engineering and code related knowledge to support the operational engineering requirements of the healthcare system; and preparing material on current technical topics and trends for presentation to the supervisor.
 - b. **Healthcare Engineer, GS-09.**
 - (1) **Experience or Education.** Candidates at this level must meet one of the following:
 - (a) One year of experience equivalent to the next lower grade;

OR

- (b) Master of Engineering degree or Master of Architecture degree or Master of Science degree in Engineering or a related field of study as outlined in paragraph 3.b.(1);

OR

- (c) Bachelor's degree as outlined in paragraph 3.b.(1) plus two full years of progressively higher-level graduate education in a related field of study, provided the applicant's total background demonstrates the core competencies for GS-09 level assignment.

- (2) **Knowledge, Skills and Abilities (KSAs).** In addition to the experience or education above, the candidate must demonstrate the following KSAs:

- (a) Knowledge of the principles, theories, concepts and practices of the engineering profession.
- (b) Ability to interpret relevant codes, regulations, guidelines and standards to make recommendations to assure compliance with healthcare facility programs.
- (c) Ability to understand the operational professional engineering needs of clinical services in the healthcare system.
- (d) Ability to prepare material on current technical topics and trends for presentation to other technical staff and mid-level hospital management and to keep abreast of changes in engineering technology related to a healthcare facility.

- (3) **Assignment.** At the developmental level 1, Healthcare Engineers receive guidance from more experienced staff members and require frequent and direct supervision. Employees complete technical assignments in the engineering field as assigned by senior Healthcare Engineers and may be required to rotate through, and participate in, the operations of other hospital services. At the GS-9 grade level, employees function in a developmental capacity with oversight by a supervisor for more complex assignments.

c. Healthcare Engineer, GS-11.

- (1) **Experience or Education.** Candidates at this level must meet one of the following:

- (a) One year of experience equivalent to the next lower grade;

OR

- (b) Ph.D. or equivalent doctoral degree in Engineering or a related field

of engineering as outlined in paragraph 3.b.(1);

OR

- (c) Master of Engineering degree, Master of Architecture degree, Master of Science degree in Engineering or a related field of study as outlined in paragraph 3.b.(1), plus 1 full year of progressively higher-level graduate education in a related field of study, provided the applicant's total background demonstrates the knowledge, skills and abilities for GS-11 level assignment;

OR

- (d) Bachelor's degree as outlined in paragraph 3.b.(1) plus 3 full years of progressively higher-level graduate education in a related field of study, provided the applicant's total background demonstrates the knowledge, skills and abilities for GS-11 level assignment.

- (2) **Knowledge, Skills and Abilities (KSA).** In addition to the experience or education above, the candidate must demonstrate the following KSAs:

- (a) Knowledge of either mechanical, electrical, structural, civil or other engineering/architectural principles, practices and their applications in the healthcare environment.
- (b) Knowledge of basic project management principles as applied to the healthcare setting.
- (c) Ability to apply healthcare engineering related standards, codes, policies and regulations, inclusive of, state and local codes.
- (d) Ability to communicate effectively orally and in writing with internal and external customers with tact and diplomacy.
- (e) Ability to develop material for clinical or administrative staff that addresses the principles and application of engineering technology and/or theory used in healthcare.
- (f) Ability to advise staff on emerging engineering technology related to a healthcare facility, while keeping abreast of changes in such technology and utilizing the information to solve healthcare facility engineering challenges.

- (3) **Assignment.** At developmental level 2, Healthcare Engineers function on a semi-independent basis with limited oversight by senior Healthcare Engineers. They conduct audits and inspections of worksites to assure compliance, prepare reports and findings, devise solutions and implement corrective actions with limited oversight. They perform project management

related to the healthcare setting with limited oversight.

d. **Healthcare Engineer, GS-12.**

- (1) **Experience.** One year of experience equivalent to the next lower grade.
- (2) **Knowledge, Skills and Abilities (KSAs).** In addition to meeting the experience requirements for this grade level, the candidate must fully demonstrate the following KSAs:
 - (a) Knowledge of mechanical, electrical, structural, civil and other engineering/architectural principles, practices and their applications in the healthcare environment.
 - (b) Knowledge of healthcare industry standards and related regulatory agency and organization (including, but not limited to The Joint Commission (TJC), Occupational Safety and Health Administration (OSHA), National Fire Protection Agency (NFPA), etc.) regulations, requirements, guides, policies, procedures, directives, standards and general medical program requirements as they relate to healthcare engineering.
 - (c) Knowledge of construction standards, methods, practices and techniques, materials and equipment to determine compliance with engineering regulations and standards.
 - (d) Skill in researching and analyzing information, conditions, human factors and projections to make sound engineering and business recommendations and decisions to proactively identify problems and develop innovative solutions within the context of applicable rules, regulations and procedures.
 - (e) Ability to plan and execute complex, multi-faceted projects and inspections while prioritizing resources against approved scopes of work, contract documents and budgets.
 - (f) Ability to organize and lead multi-disciplinary task forces with members from different departments and divisions, as well as design and construction firms.
- (3) **Assignment.** Employees at this level serve as Healthcare Engineers at the full performance level. They work independently, under general supervision with wide latitude to exercise independent judgment. Healthcare Engineers demonstrate intimate grasp of high order healthcare engineering and capital subject matter. They serve as institutional resources for healthcare delivery processes and systems, working extensively with clinical stakeholders, acquisition staff, contractors and executive leadership by leading healthcare engineering programs, technology assessments, integration planning and

implementation of both current and emerging technologies. Healthcare Engineers support the delivery of healthcare to Veterans by contributing to the education of clinical staff, planners and leadership to ensure safe and efficient healthcare delivery. Healthcare Engineers plan, execute and document highly complex, multi-faceted healthcare facility construction projects and inspections while prioritizing resources against approved scopes of work, contract documents and budgets. They identify problems and develop innovative solutions within the context of applicable rules, regulations and procedures, as it relates to the healthcare environment.

e. **Healthcare Engineer, GS-13.**

- (1) **Experience.** One year of experience equivalent to the next lower grade.
- (2) **Knowledge, Skills and Abilities (KSAs).** In addition to meeting the experience requirements for this grade level, the candidate must fully demonstrate the following KSAs:
 - (a) Knowledge of current and evolving concepts and principles of general engineering to resolve novel or obscure problems; extend and modify techniques; develop new approaches that guide other engineers who solve a variety of technical problems; and/or apply new, innovative or experimental advanced engineering theories, developments or practices.
 - (b) Skill in construction, capital planning and multiple healthcare system portfolio management inclusive of budget development and tracking.
 - (c) Skill to collaborate with persons having diverse viewpoints, goals or objectives to achieve a common understanding of the problem and a satisfactory solution by justifying, defending, negotiating or settling controversial and far-reaching matters through active participation in conferences, meetings or presentations.
 - (d) Ability to interpret broad guidelines and exercise considerable judgment and ingenuity in interpreting and adapting existing guides, developing new and improved hypotheses, concepts or approaches to previously tested or reported and/or in developing new policies that advance the organization.
 - (e) Ability to coordinate and interact with regional facilities, national and corresponding staff for the implementation and coordination of policies and program plans to apply prioritization methodologies that align facilities' capital asset requests and develop infrastructure options that result in the efficacious use of regional level capital strategic plans.
 - (f) Ability to adapt and apply trends in healthcare delivery systems that

impact long-term capital assets (such as aging equipment and physical plants) for regionally integrated healthcare systems.

(g) Ability to consult and collaborate with all organizational levels in a national healthcare organization, outside organizations and businesses regarding both strategic and financial activities of a regional healthcare organization.

(h) Ability to implement and/or sustain a capital asset and construction program that meets healthcare facility related standards, codes, policies and regulations inclusive of state and local codes.

(3) **Assignment.** For all assignments above the journey level, the higher-level duties must consist of significant scope, complexity (difficulty), range of variety and be performed by the incumbent at least 25% of the time. At this level, employees are non-supervisory and are typically found at the Veterans Integrated Service Networks (VISN) or national program office level, however, employees may be located at the facility level with VISN or national assignments. Healthcare Engineers are the project managers for all VISN or some national level operations, accreditation, construction (major, minor and nonrecurring maintenance) and capital planning activities. At this level, Healthcare Engineers are advanced engineers overseeing engineering and project design programs for several VA Medical Centers (VAMCs) and Community Based Outpatient Clinics (CBOCs). They implement value engineering theories and principles and assure the most economical methods of construction or construction materials are utilized and achieve cost efficiency for the Federal Government. They coordinate VISN capital investment project submissions and provide guidance on investment categories, strategies, financial planning and budgeting. Healthcare Engineers evaluate and establish VISN-wide cost estimating strategy. They assist facility management when developing strategies to address the correction of space, functional and operational deficiencies and provide guidance, direction and policy interpretation on sensitive and complex issues in support of the acquisition and administration of all construction projects and capital planning.

f. **Supervisory Healthcare Engineer, GS-13.**

(1) **Experience.** One year of experience equivalent to the next lower grade.

(2) **Knowledge, Skills and Abilities (KSAs).** In addition to meeting the experience requirements for this grade level, the candidate must fully demonstrate the following KSAs:

(a) Knowledge of data analysis techniques related to managing workload, quality, performance and productivity within the area of responsibility.

- (b) Knowledge related to the management of overall department resources, (i.e., finances space, equipment, supplies, schedules and staffing) at the local level.
 - (c) Knowledge of the full range of supervisory duties, which include responsibility for assignment of work, performance evaluations, selection of staff, training and development, recommendation of awards, advancements and disciplinary actions.
 - (d) Skill in using effective communication in managing interpersonal relationships, leading and dealing with employees, team leaders, labor representatives and managers.
 - (e) Ability to balance multiple responsibilities, set priorities, delegate tasks, meet multiple deadlines, analyze organizational problems and develop and implement effective solutions that result in efficient operations.
 - (f) Ability to draft and/or recommend local policies and/or directives related to healthcare engineering management.
 - (g) Ability to recognize and assess evolving scenarios, utilizing initiative, self-direction and assigned resources to affect resolutions.
- (3) **Assignment.** For all supervisory assignments above the full performance level, the higher-level duties must consist of significant scope, complexity, difficulty, range of variety and be performed by the incumbent as a major duty at least 25% of the time. The incumbent must supervise staff for at least 25% of the time, administratively and technically at the full performance grade level or below. At this level, Supervisory Healthcare Engineers are assigned at the facility level, supervising professional engineers and other support positions at GS-13 equivalent and below. Supervisory Healthcare Engineers exercise the full range of supervisory responsibility to include development of performance standards and performance evaluations; recommendations for appointment, awards, advancements, and when appropriate, disciplinary actions; and identification of continuing training needs, etc. They provide complex professional engineering advice to peers, subordinates and/or non-professional administrators/managers. They review or direct the review of technical plans, specifications and analyses of design as submitted by subordinates. Supervisory Healthcare Engineers provide professional advice to improve such plans, specifications and analyses. They direct necessary changes and furnish assistance as required. They advise subordinate personnel on methods and procedures to be used in special studies on highly complex projects. Supervisory Healthcare Engineers oversee subordinate professionals' work. They are the technical authority, providing expert advice pertaining to the maintenance of facilities, structures or landscapes

that may involve large geographic regions. Supervisory Healthcare Engineers review subordinates' activity plans, specifications and cost estimates for technical adequacy and feasibility. They oversee maintenance standards for advanced equipment or systems technology. Supervisory Healthcare Engineers provide for the budgeting and financial management for engineering. They supervise a staff to accomplish the construction work and maintenance of the organization.

g. Supervisory Healthcare Engineer (Deputy), GS-13.

- (1) **Experience.** One year of experience equivalent to the next lower grade.
- (2) **Knowledge, Skills and Abilities (KSAs).** In addition to meeting the experience requirements for this grade level, the candidate must fully demonstrate the following KSAs:
 - (a) Knowledge of the management of overall healthcare system resources, (i.e., finances, space, equipment, supplies, schedules and staffing).
 - (b) Knowledge of mechanical, electrical, structural, civil and other engineering/architectural principles, practices and their applications as related to healthcare facilities.
 - (c) Skill in using effective communication in managing interpersonal relationships with internal and external customers, stakeholders, executive leadership, labor representatives and managers.
 - (d) Skill in balancing priorities, delegating tasks and meeting multiple competing deadlines.
 - (e) Skill in interpreting broad or general national policies and guidelines and adapting/applying them to specific compliant programs at the local healthcare system.
 - (f) Skill in recognizing and assessing evolving scenarios, utilizing initiative, self-direction and assigned resources to affect resolutions.
 - (g) Ability to analyze complex organizational problems and develop and implement effective solutions that result in efficient operations.
 - (h) Ability to anticipate, develop and implement strategies in meeting the healthcare system's short term and long-term strategic goals in a highly fluid environment.
 - (i) Ability to ensure compliance with healthcare industry standards and regulatory agency and organization (including but not limited to TJC, OSHA, NFPA, etc.), regulations, requirements, guides, policies, procedures, directives and general medical program requirements as

they relate to healthcare engineering.

- (j) Ability to interview candidates for positions, recommend appointments, advancements, or when appropriate, disciplinary actions; evaluate performance and identify continuing education and training needs.
- (3) **Assignment.** For all supervisory assignments above the full performance level, the higher-level duties must consist of significant scope, complexity, difficulty, range of variety and be performed by the incumbent as a major duty at least 25% of the time. The incumbent must supervise staff for at least 25% of the time, administratively and technically at the full performance grade level or below. This Supervisory Healthcare Engineer, GS-13, position is the deputy to the Supervisory Healthcare Engineer, GS-14, who supervises professional engineers and other support staff. They supervise the engineering service to accomplish the operations of the service. The deputy, as an assistant chief, in this position exercises the full range of supervisory responsibility to include but not limited to development of performance standards and performance evaluations, recommendations for appointment, awards, advancements, and when appropriate, disciplinary actions and identification of continuing training needs. The deputy provides a safe, reliable and precisely controlled operating environment for direct patient care. They are experts in the design, sustainment and improvement of the medical care environment, including all hospital building features, automated building management and environmental control systems, critical utility systems and medical equipment technology. They work under the authority and direction of the Supervisory Healthcare Engineer, GS-14, and may collaborate directly with executive leadership, medical staff, nursing staff and other clinical personnel regarding the design and operation of the environment for medical care. They manage the healthcare system's capital assets program and construction projects. They educate and advise clinical staff on the safe use of critical building features, utility systems and fire prevention systems as they relate to the environment of care. They educate and advise clinical staff on medical equipment technology including selection, operation, safety and security. Deputies/Assistant Chiefs ensure the healthcare system complies with a multitude of VA established or adopted standards, codes, accreditation and regulatory requirements including, but not limited to, those issued by TJC, OSHA and Environmental Protection Agency (EPA). In summary, they apply engineering concepts and methodologies to enhance the delivery of healthcare by providing a technologically advanced, safe and reliable healthcare environment. They coordinate the operational planning, organizing, directing, evaluating and management process for service line programs, which may include setting qualitative and quantitative standards. They may develop and provide the Executive Leadership Team and the clinical staff information on the methods, techniques and procedures necessary to integrate engineering, maintenance, biomedical, capital management and other engineering

programs into the mission of the medical center. They assist the Supervisory Healthcare Engineer, GS-14, with oversight of the TJC, Environment of Care Programs for Utility Systems Management, Safety, Life Safety and Medical Equipment Management for both their assigned medical center and all CBOCs.

h. Healthcare Engineer, GS-14.

- (1) **Experience.** One year of experience equivalent to the next lower grade.
- (2) **Knowledge, Skills and Abilities (KSAs).** In addition to meeting the experience requirements for this grade level, the candidate must fully demonstrate the following KSAs:
 - (a) Knowledge of current and evolving concepts and principles of general engineering to resolve novel or obscure problems; extend and modify techniques; develop new approaches that guide other engineers who solve a variety of technical problems; and/or apply new, innovative or experimental advanced engineering theories, developments or practices to problems or studies not susceptible to treatment by acceptable methods.
 - (b) Skill in construction, capital planning and multiple healthcare system portfolio management, inclusive of budget development and tracking.
 - (c) Skill in collaborating with persons having diverse viewpoints, goals or objectives to achieve a common understanding of the problem and a satisfactory solution of sometimes controversial and far-reaching matters through active participation in conferences, meetings or presentations.
 - (d) Ability to interpret broad guidelines and exercise considerable judgment and ingenuity in interpreting and adapting existing guides; in developing new and improved hypotheses, concepts or approaches not previously tested or reported; and/or in developing new policies that advance the organization.
 - (e) Ability to coordinate and interact with regional facilities, national and Department-level staff for the implementation and coordination of policies and program plans to apply prioritization methodologies that align facilities' capital asset requests and develop infrastructure options that result in the efficacious use of a regional healthcare organization capital strategic plan.
 - (f) Ability to adapt and apply trends in healthcare delivery systems that impact long-term capital assets (such as aging equipment and physical plants) for regionally integrated healthcare systems.

- (g) Ability to consult and collaborate with all organizational levels in a national healthcare organization, outside organizations and businesses regarding both strategic and financial activities of a regional healthcare organization.
- (3) **Assignment.** For all assignments above the journey level, the higher-level duties must consist of significant scope, complexity (difficulty), range of variety and be performed by the incumbent at least 25% of the time. This position serves as the national or VISN engineer for all activities related to engineering operations, compliance and/or construction and leases (major, minor, clinical specific initiative-inclusive of high-tech, high-cost medical equipment installations and nonrecurring maintenance) and capital planning to include budget approval, funding allocation and activation. Healthcare Engineers oversee project design programs for all VAMCs and CBOCs by reviewing, evaluating and coordinating planning data such as projected space requirements and strategic, operational, program and design requirements. They coordinate national or VISN capital investment submissions and provide guidance on investment categories, strategies, financial planning and budgeting. Healthcare Engineers provide technical expertise on capital asset proposals and develop guidelines and data tools in completing the application, Cost-Effectiveness Analysis, Earned Value Analysis, Alternatives Analysis and Risk Analysis.
- (a) Healthcare Engineers oversee project progress reviews and overall project performance levels to identify slippage, cost overruns and other issues, and provide direction and lead a collaborative approach with facility engineering and contracting (and when warranted, VACO-level program managers) to bring about solutions to issues impacting project performance. They manage and track funding of national or VISN approved capital programs and assist VAMC facility management in developing strategies to address the correction of space, functional and operational deficiencies to include lead for VISN-wide space and functional surveys, updates and maintenance of the Facility Conditional Assessment and other capital performance management requirements and databases. They provide guidance, direction and policy interpretation on sensitive and complex issues in support of the acquisition and administration of all construction projects and capital planning. Healthcare Engineers ensure compliance with VHA capital related policies, procedures and program design criteria.
 - (b) Healthcare Engineers provide a system of communication and training for facility-level engineering staff on a wide variety of infrastructure and compliance related issues both in terms of capital and project planning and facility operations. They review, evaluate

and provide professional oversight to VISN/VAMC Environment of Care Programs to ensure compliance with VHA Directives, accreditation standards, national codes and other regulatory requirements. They brief network and VHA leadership on Environment of Care and healthcare engineering programs and develop strategies to address gaps and opportunities for improvement. Healthcare Engineers formulate and establish policies for national or VISN-wide energy conservation initiatives relating to utility system energy operation/performance and operational and maintenance procedures with the objective of meeting VA and VISN energy conservation goals. They are required to monitor progress and report to VISN and VHA management on a recurring basis.

- (c) Healthcare Engineers ensure value engineering theories and principles are implemented to assure the most economical methods of operations and construction or construction materials are utilized and to achieve cost efficiency for the Federal Government. They evaluate and establish a national or VISN-wide cost estimating strategy. They are responsible for identifying, developing, evaluating and implementing business opportunities for VISN-wide operational efficiencies and quality enhancements.

i. Supervisory Healthcare Engineer, GS-14.

- (1) **Experience.** One year of experience equivalent to the next lower grade.
- (2) **Knowledge, Skills and Abilities (KSAs).** In addition to meeting the experience requirements for this grade level, the candidate must fully demonstrate the following KSAs:
 - (a) Knowledge of mechanical, electrical, structural, civil and other engineering/architectural principles, practices and their applications as related to healthcare facilities.
 - (b) Knowledge related to the management of overall healthcare system resources, (i.e., finances, space, equipment, supplies, schedules and staffing).
 - (c) Skill in using effective communication in managing interpersonal relationships with internal and external customers, stakeholders, executive leadership, labor representatives and managers.
 - (d) Skill in balancing multiple responsibilities, setting priorities, delegating tasks and projects, meeting multiple deadlines, analyzing complex organizational problems and developing and implementing effective solutions that result in efficient operations.

- (e) Skill in applying considerable independent judgment to interpret broad or general national policies and guidelines and adapt/apply them to specific compliant programs at the local healthcare system.
 - (f) Skill in recognizing and assessing evolving scenarios, utilizing initiative, and self-directing and assigning resources to affect resolutions.
 - (g) Skill in complying with national internal and outside regulatory agency and organization (including, but not limited to TJC, OSHA, NFPA, etc.) regulations, requirements, guides, policies, procedures, directives, standards and general medical program requirements as they relate to healthcare engineering.
 - (h) Ability to anticipate, develop and implement strategies in meeting the healthcare system's short-term and long-term strategic goals in a highly fluid environment.
 - (i) Ability to interview candidates for positions, recommend appointments, advancements, or when appropriate, disciplinary actions; evaluate performance and identify continuing education and training needs.
- (3) **Assignment.** For all supervisory assignments above the full performance level, the higher-level duties must consist of significant scope, complexity, difficulty, range of variety and be performed by the incumbent as a major duty at least 25% of the time. The incumbent must supervise staff for at least 25% of the time, administratively and technically at the full performance grade level or below. This Supervisory Healthcare Engineer, GS-14 position is the Chief Engineer. Chief Engineers supervise engineering service, including subordinate the Supervisory Healthcare Engineer(s) at the GS-13 level, to ensure compliance with VA, TJC and a variety of other prevailing codes and standards. In addition to Chief Engineers' integral role in providing capability and capacity for the primary medical mission, they ensure the availability of facilities for complex medical research and participate in community partnerships and supports Department of Defense contingency planning. Chief Engineers supervise the engineering staff to accomplish the operations of the service. As Chief Engineers, they exercise the full range of supervisory responsibility to include but not limited to development of performance standards and performance evaluations; recommendations for appointment, awards, advancements, and when appropriate, disciplinary actions and identification of continuing training needs.
- (a) Chief Engineers provide for a safe, reliable and precisely controlled operating environment for direct patient care. Chief Engineers serve

as experts in the design, sustainment and improvement of the medical care environment, including all hospital building features, automated building management and environmental control systems, critical utility systems and medical equipment technology. They collaborate directly with executive leadership, medical staff, nursing staff and other clinical personnel regarding the design and operation of the environment for medical care. They manage capital asset programs and construction projects.

- (b) Chief Engineers educate and advise clinical staff on the safe use of critical building features, utility systems and fire prevention systems as they relate to the environment of care. They educate and advise clinical staff on medical equipment technology including selection, operation, safety and security. They ensure the healthcare system complies with a multitude of accreditation and regulatory requirements including, but not limited to, those issued by TJC, OSHA and EPA.
- (c) Chief Engineers apply engineering concepts and methodologies to enhance the delivery of healthcare by providing a technologically advanced, safe and reliable healthcare environment. They are responsible for the planning, organizing, directing, evaluating and management process for service line programs, which include setting qualitative and quantitative standards. They develop and provide the Executive Leadership Team and the clinical staff information on the methods, techniques and procedures necessary to integrate the engineering, maintenance, biomedical, capital management and other engineering programs into the mission of the medical center. They oversee the TJC, Environment of Care Programs for Utility Systems Management, Safety, Life Safety and Medical Equipment Management for both the assigned medical center and all CBOCs.

j. **Healthcare Engineer (National Program Coordinator), GS-15.**

- (1) **Experience.** One year of experience equivalent to the next lower grade.
- (2) **Knowledge, Skills and Abilities (KSAs).** In addition to meeting the experience requirements for this grade level, the candidate must fully demonstrate the following KSAs:
 - (a) Knowledge related to the management of healthcare system resources, (i.e., finances, space, equipment, supplies, schedules and staffing) across a national portfolio of interrelated healthcare facilities that vary in size and complexity.

- (b) Knowledge of mechanical, electrical, structural, civil and other engineering/architectural principles, practices and their applications as related to healthcare facilities.
 - (c) Knowledge of a range of specialized areas in general engineering sufficient to originate concepts and effect new developments applicable to emerging functions of a national magnitude and with long-term purposes.
 - (d) Skill in using effective communication in managing interpersonal relationships with internal and external customers, stakeholders, executive leadership, labor representatives and managers.
 - (e) Ability to balance multiple responsibilities, set priorities, delegate tasks and projects, meet multiple deadlines, analyze complex organizational problems and develop and implement effective solutions that result in efficient operations across a national healthcare system.
 - (f) Ability to anticipate, develop and implement strategies in meeting national healthcare system's short term and long-term strategic goals in a highly fluid environment.
 - (g) Ability to develop national policy and adapt/apply across the national healthcare system.
 - (h) Ability to recognize and assess evolving scenarios, utilizing initiative, self-direction and assigned resources to affect resolutions.
- (3) **Assignment.** For all assignments above the full performance level, the higher-level duties must consist of significant scope, complexity (difficulty) and range of variety and be performed by the incumbent at least 25% of the time. The Healthcare Engineers (National Program Coordinators), GS-15, serve as a National Program Coordinator, Program Director or Senior Program Manager within the VHA Healthcare Environment and Facilities Program (HEFP) Office. These Healthcare Engineers (National Program Coordinators) have programmatic responsibility (oversight, review, budget, planning, policy, guidance, compliance, etc.) over all facility healthcare engineering programs nationally. Healthcare Engineers (National Program Coordinators) are recognized authorities in the analysis of national or regional program related issues and are delegated program level authority on overall project priorities and authority to plan, schedule and manage major projects/studies. Results of work are considered authoritative and are normally accepted without change. They use judgment and ingenuity and exercise broad latitude to determine intent of guidelines; and develop policy/guidance and formulate interpretations which take the form of policy statements and guidance.

- (a) Healthcare Engineers (National Program Coordinators) generate new concepts and methodologies; plan and direct financial or budgeting systems for broad, emerging or similarly critical large-scale department/agency-wide programs of national or international scope where no precedents exist; and establish education/training in concepts and theories of the occupation gained only through completion of a specified curriculum at a recognized college or university (positive education requirement).
- (b) Healthcare Engineers (National Program Coordinators) plan, organize and carry through to completion analytical studies involving or supporting key agency healthcare programs. Studies are of such breadth they require input and assistance from other analysts and subject matter expert specialists in the field appropriate to the subject of study. Programs of study may be cross-functional and strongly influence multiple national healthcare programs within VA and/or other federal agencies, standards organizations and national code authorities.
- (c) Healthcare Engineers (National Program Coordinators) manage VHA's Healthcare Engineering program or its significant segment of the broad scoped national program, which supports and directly affects the multi-billion-dollar operation and investments of the administration's healthcare and non-healthcare facilities. Decisions and actions made by Healthcare Engineers (National Program Coordinators) influence and guide industry policies and practices. They serve as policy and technical experts not only within VHA and VA but also educate and advise other governmental agencies (OGAs), industry, professional societies and other national organizations in enhancing the accomplishment of VHA and community healthcare missions. They counsel and advise senior and executive leadership on policies, healthcare facility operations, emerging/available technologies, programmatic impacts (initiatives, regulatory and statutory) and management of human capital (professional engineering and trades and crafts).
- (d) Healthcare Engineers (National Program Coordinators) are a recognized authority in the analysis of national or regional program related issues and are delegated program level authority on overall project priorities and authority to plan, schedule and manage major projects/studies.

- (e) They review and concur on congressional, media and general business correspondence from facilities, VISNs, other Program Offices (within VHA and VA), Office of the Under Secretary for Health and the Office of the Secretary addressing healthcare facility policies, operations or associated capital investments.
- (f) Healthcare Engineers (National Program Coordinators) direct comprehensive policy and technical (code, regulations and standards) compliance reviews and investigations of field facilities by subordinate or other national program staff. They lead site reviews and investigations in instances of technical complexity, extreme sensitivity or national interest. They evaluate operational effectiveness and efficiencies.
- (g) Healthcare Engineers (National Program Coordinators) oversee workload analyses and determine national, regional and VISN program support needs to ensure current and future mission directives and work product expectations are met. They establish contract scopes and contract budgets. They designate contract managers and review subordinate staff developed work requirements and performance assessment criteria. In many cases contracts are complex, multi-million dollar, provide a broad range of work products and services and are of national scope. They direct contractor work assignments on non-delegated contracts and review subordinates on management of delegated contracts VA, VHA, OGAs and other corporate boards, councils and committees.
- (h) Healthcare Engineers (National Program Coordinators) are key healthcare engineering and associated technology integrations representatives within VHA and VA. They chair or provide management oversight to VHA national committees and task groups (e.g., Healthcare Engineering Oversight Committee on Physical Security and Resiliency, VHA Facility Design and Oversight Committee, etc.). They appoint members, representatives of VHA headquarters and field operations to select committees and task groups. They authorize national level distribution and implementation of committee developed guides, standards or recommendations. They serve as VHA representatives on various interagency, OGA, national code, corporate and industry based national organizations (e.g., Federal Facilities Council, Whole Building Design Council, American Society of Healthcare Engineering, National Institute of Building Sciences, Facility Guidelines Institute, etc.).

k. **Supervisory Healthcare Engineer, GS-15.**

- (1) **Experience.** One year of experience equivalent to the next lower grade.
- (2) **Knowledge, Skills and Abilities (KSAs).** In addition to meeting the experience requirements for this grade level, the candidate must fully demonstrate the following KSAs:
 - (a) Knowledge related to the management of healthcare system resources, (i.e., finances, space, equipment, supplies, schedules and staffing) across a national portfolio of interrelated healthcare facilities that vary in size and complexity.
 - (b) Knowledge of mechanical, electrical, structural, civil and other engineering/architectural principles, practices and their applications as related to healthcare facilities.
 - (c) Knowledge of a range of specialized areas in general engineering sufficient to originate concepts and effect new developments applicable to emerging functions of a national magnitude and with long-term purposes.
 - (d) Skill in using effective communication in managing interpersonal relationships with internal and external customers, stakeholders, executive leadership, labor representatives and managers.
 - (e) Ability to effectively supervise a wide variety of subordinates to include interview candidates for positions; recommend appointments, advancements, or when appropriate, disciplinary actions; evaluate performance and identify continuing education and training needs.
 - (f) Ability to balance multiple responsibilities, set priorities, delegate tasks and projects, meet multiple deadlines, analyze complex organizational problems and develop and implement effective solutions that result in efficient operations across a national healthcare organization.
 - (g) Ability to anticipate, develop and implement strategies in meeting a national healthcare system's short term and long-term strategic goals in a highly fluid environment.
 - (h) Ability to develop national policy and adapt/apply across a national healthcare system.
 - (i) Ability to recognize and assess evolving scenarios, utilizing initiative, self-direction and assigned resources to affect resolutions.

- (3) **Assignment.** For all supervisory assignments above the full performance level, the higher-level duties must consist of significant scope, complexity, difficulty, range of variety and be performed by the incumbent as a major duty at least 25% of the time. The incumbent must supervise staff for at least 25% of the time, administratively and technically at the full performance grade level or below. This position serves as a Program Director or Senior Program Manager within the VHA HEFP Office or as the Engineering and Capital Program Manager at the regional/VISN level. These Supervisory Healthcare Engineers have full programmatic responsibility (staffing management, budget, planning, policy, guidance, compliance, etc.) over all facility healthcare engineering programs nationally, regionally or within their VISN.
- (a) Supervisory Healthcare Engineers manage VHA's Healthcare Engineering program or its significant segment of the broad scoped national program, which supports and directly affects the multi-billion-dollar operation and investments of the administration's healthcare and non-healthcare facilities. Decisions and actions made by them influence and guide industry policies and practices. They serve as a policy and technical expert not only within VHA and VA but also educate and advise OGAs, industry, professional societies and other national organizations in enhancing the accomplishment of VHA and community healthcare missions. They counsel and advise senior and executive leadership on policies, healthcare facility operations, emerging/available technologies, programmatic impacts (initiatives, regulatory and statutory) and management of human capital (professional engineering and trades and crafts).
 - (b) Supervisory Healthcare Engineers provide authoritative technical interpretations of policies, regulations, codes and standards. They formulate operational and multi-year strategic budgets and staffing requirements. They establish technical competency requirements and oversee national level educational program initiatives which include commercial-off-the shelf course assessments, custom course development and negotiation of intra-departmental agreements. They serve as technical and administrative policy subject matter experts and as instructors/educators.
 - (c) They review and concur on congressional, media and general business correspondence from facilities, VISNs, other Program Offices (within VHA and VA), Office of the Under Secretary for Health and the Office of the Secretary addressing healthcare facility policies, operations or associated capital investments.

- (d) Supervisory Healthcare Engineers direct comprehensive policy and technical (code, regulations and standards) compliance reviews and investigations of field facilities by subordinate or other national program staff. They lead site reviews and investigations in instances of technical complexity, extreme sensitivity or national interest. They evaluate operational effectiveness and efficiencies.
- (e) They oversee workload analyses and determine national program support needs to assure current and future mission directives and work product expectations are met. They establish contract scopes, contract budgets, designate contract managers and review subordinate staff developed work requirements and performance assessment criteria. In many cases contracts are complex, multi-million dollar, provide a broad range of work products and services and are of national scope. The incumbent directs contractor work assignments on non-delegated contracts and reviews subordinates on management of delegated contracts for VA, VHA, OGAs and other corporate boards, councils and committees.
- (f) Supervisory Healthcare Engineers are key healthcare engineering and associated technology integrations representatives within VHA and VA. They chair or provide management oversight to VHA national committees and task groups (e.g., Healthcare Engineering Oversight Committee on Physical Security and Resiliency, VHA Facility Design and Oversight Committee, etc.). They appoint members, representatives of VHA headquarters and field operations to select committees and task groups. They authorize national level distribution and implementation of committee developed guides, standards or recommendations. They serve as VHA representatives on various interagency, OGA, national code, corporate and industry based national organizations (e.g., Federal Facilities Council, Whole Building Design Council, American Society of Healthcare Engineering, National Institute of Building Sciences, Facility Guidelines Institute, etc.).
- (g) Supervisory Healthcare Engineers exercise the full range of supervisory and personnel management authorities and responsibilities in planning, directing and assessing work of subordinate staff comprised of advanced engineers, staff engineers and administrative support staff. They establish performance standards and evaluate overall performance of employees. They define competency requirements, identify developmental and training needs and take necessary actions to assure subordinate personnel maintain and enhance technical expertise. They formulate budget and staffing requirements in managing organizational changes and

ensuring multi-year and long-range national mission directives and program goals/objectives are met.

6. DEVIATIONS.

- a. An approving official may, under unusual circumstances, approve reasonable deviations to the grade determination requirements for an employee whose composite record of accomplishments, performance and qualifications, as well as current assignment, warrants such action based on demonstrated competence to meet the requirements of the proposed grade and/or assignment.
- b. The placement of individuals in grade levels or assignments not described in this standard must be approved by the Under Secretary for Health in VHA Central Office prior to placement in the position.
- c. Under no circumstances will the educational or credential requirement be waived for those occupations with a positive education requirement or when specific credentials are identified as necessary to meet minimum requirements, unless an exception is annotated in the qualification standard.

RESPONSIBLE OFFICE: Human Resources and Administration/Operations, Security and Preparedness (HRA/OSP) (006), Office of the Chief Human Capital Officer (OCHCO) (05), Recruitment and Placement Policy Service (059)