U.S. Office of Personnel Management
Office of Merit Systems Oversight and Effectiveness
Classification Appeals and FLSA Programs

San Francisco Oversight Division
120 Howard Street, Room 760
San Francisco, CA 94105-0001

Classification Appeal Decision
Under section 5112 of title 5, United States Code

Appellant:	[The appellant]
Agency classification:	General Engineer GS-801-13
Organization:	[Appellant's organization/location] Department of Energy
OPM decision:	GS-801-13 (Title at agency discretion)
OPM decision number:	C-0801-13-03

Carlos A. Torrico
Classification Appeals Officer

November 25, 2002
Date

As provided in section 511.612 of title 5, Code of Federal Regulations, this decision constitutes a certificate that is mandatory and binding on all administrative, certifying, payroll, disbursing, and accounting officials of the government. The agency is responsible for reviewing its classification decisions for identical, similar, or related positions to ensure consistency with this decision. There is no right of further appeal. This decision is subject to discretionary review only under conditions and time limits specified in the *Introduction to the Position Classification Standards*, appendix 4, section G (address provided in appendix 4, section H).

Decision sent to:

[Appellant's address]

Ms. Dianne Cochrin, Director
Headquarters Employment Services
U.S. Department of Energy
1000 Independence Avenue
Washington, DC 20585

Introduction

On April 12, 2002, the San Francisco Oversight Division, Office of Personnel Management (OPM), accepted a classification appeal from [the appellant]. On June 14, 2002, the Division received the agency's complete administrative report concerning the appeal. The appellant's position is currently classified as General Engineer, GS-801-13, but he believes it should be graded at the GS-14 level. He works in the [appellant's organization/location], Department of Energy (DOE). We have accepted and decided this appeal under section 5112 of title 5, United States Code (U.S.C.).

This decision is based on a review of all information submitted by the appellant and his agency. In addition, an Oversight Division representative conducted separate telephone interviews with the appellant, his supervisor, a former project manager, and various agency contractors.

General issues

In a letter dated March 11, 2002, the appellant informed us that he had filed a number of complaints related to his employment with the agency including complaints about his position description and desk audits. These complaints do not affect the acceptance or adjudication of the classification appeal. In adjudicating this appeal, our only concern is to make our own independent decision on the proper classification of his position. By law, we must make that decision solely by comparing his current duties and responsibilities to OPM standards and guidelines (5 U.S.C. 5106, 5107, and 5112).

The appellant indicates that the experience he has brought to his position has enhanced the nature of the work and thus his grade level. While it is the position which is classified, the relationship of the employee to the position can be recognized when the performance of the incumbent broadens the nature or scope and effect of the work being performed. Since we are considering the current duties and responsibilities of the position, any changes to the work have been considered in the following evaluation of the appellant’s duties and responsibilities.

Background information

The [appellant's organization] develops and manages a system for disposing of all spent nuclear fuel (SNF) from commercial nuclear reactors and high-level radioactive waste (HLW) resulting from atomic energy defense activities. The [appellant's project office] is the primary activity of the [appellant's organization]. The timeline for the entire [project] is over 100 years. For more than 20 years, DOE studied [project location] to determine if a potential underground geologic repository there can isolate nuclear waste in a manner sufficient to protect the health and safety of current and future generations and the environment. On July 9, 2002, Congress approved [the project location] as the site for the Nation’s first geologic repository for SNF and HLW. DOE will submit a license application to the Nuclear Regulatory Commission (NRC) in 2004 to obtain authorization to build a repository. The NRC will grant authorization for construction only if it concludes from its investigations (2004-2007) that the proposed repository meets all safety and functional requirements specified in applicable Federal regulations.

If the DOE receives the construction authorization, DOE will build (2008-2015) the necessary facilities for receiving initial shipments of waste. After construction has begun, the DOE would update its license application to receive and possess SNF and HLW. If the NRC determines that the repository complies with all Federal regulations, it would issue the license to allow emplacement of waste in the repository.

Following a period of about 30 years of emplacement and monitoring, DOE would apply for a license amendment to close the repository. If the NRC determines that all requirements related to closure can be met, DOE would close the repository in 2119, but maintain oversight responsibility.

The [appellant's unit], where the appellant works, manages and oversees all planning and control systems and activities that support [the project] managers to oversee schedules, costs, and resources. [Appellant's unit] supports the DOE's directive to centralize and standardize functions, including the data management of business operations and financial reporting. The [appellant's unit] staff are experts in planning, scheduling, cost estimating, budget monitoring, data analysis, and reporting. They help other [project] organizations plan and track progress. They analyze costs, anticipate and control changes to budgets and plans, and prepare timely reports for decision-making. The [appellant's unit] uses teams to work with managers. On the teams, schedulers, analysts, cost engineers, and administrators manage the information databases. [Appellant's unit] staff act as consultants, helping to interpret data and prepare reports. [Appellant's unit] has four functional areas: Integrated Planning and Baseline Maintenance, Scheduling and Cost Engineering, Performance Analysis and Reporting, and Systems Development and Maintenance. The appellant serves on the Scheduling and Cost Engineering team as the technical lead for the Total System Life Cycle Cost (TSLCC).

Position information

The official position description (PD) [number] was certified as accurate by the appellant's supervisor on June 12, 2002. The appellant certified his PD, but he does not believe that the description of his Capital Asset Plan (CAP) duties is accurate.

A PD should include enough information so that proper classification can be made when the description is supplemented by other information. The description of the appellant's capital asset duties are written briefly and clearly as recommended in OPM's guidance found in the *Introduction to the Position Classification Standards* and *The Classifier's Handbook*. We find that the official PD supplemented with more specific information obtained through interviews with the appellant, his supervisor, contractors, and the former CAP project manager and from applicable Web sites is adequate for classification purposes.

The appellant states that he spends about 98 percent of his time on two major duties: the TSLCC and the CAP.

The TSLCC analysis provides a cost estimate for financial planning, information to policy makers for use in determining costs, and a system cost estimate as one of the inputs for assessing the adequacy of fees being paid by waste generating sources for commercial SNF disposal. The

latter is required by the Nuclear Waste Policy Act of 1982 which directed that the management and disposal of SNF be funded through a fee on the commercial generation of nuclear power.

As the [appellant's unit] technical lead for the Monitored Geologic Repository (MGR) TSLCC, the appellant coordinates, manages, and oversees activities associated with the MGR TSLCC including preparation and review of TSLCC Basis of Estimates; long-range schedule development and integration through closure and decommissioning; and Independent Cost Estimates (ICE). He speaks for the Director, [appellant's unit] regarding activities pertaining to the MGR TSLCC with senior [project office] project personnel, senior DOE headquarters personnel, and [project] participants, including Management and Operating Contractor (M&O) personnel. He is responsible for integrating DOE and contractor efforts required to compile MGR TSLCC estimates.

The PD states that the appellant plans, directs, and coordinates the planning, scheduling, and costing of capital asset and support elements to be constructed once authorization is granted by NRC. This covers design, ongoing scientific and performance assessment efforts, construction, operating, and decommissioning. It also involves integration with numerous DOE customers and scientific and engineering disciplines as well as a variety of contractors, National Laboratories, and government agencies.

The Secretary of Energy assigned a headquarters level project manager to develop a CAP for the YMP in 2002. The CAP is a requirement of Office of Management and Budget's (OMB) Circular A-11. The CAP served to document the overall plan for accomplishing the [project] phases scheduled for the period from about 2004 to 2015. The CAP is a comprehensive document encompassing the budget, long-range planning, scheduling, cost and schedule performance measurement, engineering design, procurement, and management of the project. The CAP also serves as the framework for budget requests from 2004 to 2015. The appellant served as the coordinator in [city] working with the project staff, the contractors, and the CAP project manager who was based in Washington, DC.

The [project] will cost about $2 billion. To distribute the costs over several years, the [project] needed to be divided into *useful segments*, which OMB defines as the economically and programmatically separate components of a capital project. A major stumbling block in the accomplishment of the CAP was convincing all parties, i.e., [appellant's organization] project personnel, the contractors, and OMB, to agree to a definition of *useful segments* as it applied to the [project]. The [project] was commonly viewed as a complete entity that was only useful as an integrated whole, e.g., the underground repository is not useful without the surface facilities. However, for purposes of the CAP and future budget requests, a *segregable units of work* definition was agreed upon. The appellant had an important role in the development of the CAP, particularly in setting up the series of briefings in [city] to persuade OMB to accept the definition and in the data gathering and report writing stages. However, the information we gathered reflects that arriving at the definition was a joint effort involving several people including the project manager, a consultant formerly with OMB, and other [appellant's organization] [city] project personnel as well as the appellant.

The interviews with the appellant, his supervisor, the former CAP project manager at headquarters, and contractors and position information provided by both the agency and the appellant furnish additional details about the appellant's duties and responsibilities and the manner in which they are carried out.

Series, title, guide, and standard determination

Based on professional engineering knowledge, the appellant's position integrates cost estimating and scheduling to develop the TSLCC and CAP for the [project]. The position also requires knowledge of program analysis, budget, and contract administration. However, the professional engineering knowledge is paramount. Since the appellant's position does not match any specific series directly, we have selected the General Engineering Series, GS-801, which covers positions that advise on, administer, or perform research or other professional and scientific work that is not specifically classifiable in any other engineering series, but that involves the application of a knowledge of such engineering fundamentals as engineering methods of construction and processing; or positions involving professional work in several branches of engineering. Neither the appellant nor the agency disagree.

There are no official titles prescribed for positions assigned to the GS-801 series. Therefore, the agency may title the position following the guidance in Section III.H.2 in the *Introduction to the Position Classification Standards*.

There is no standard that directly covers the appellant's duties and responsibilities. We have selected the following position classification standards for cross-comparison based on comparable work processes, functions, and subject matter of the work performed, professional engineering qualifications requirements, and the high level and difficulty of the work performed. We also selected evaluation criteria in both narrative and Factor Evaluation System (FES) styles. The following classification guide and standards are selected: General Grade-Evaluation Guide for Nonsupervisory Professional Engineering Positions, GS-800, and the standards for Civil Engineering Series, GS-810, and Nuclear Engineering Series, GS-840. The GS-800 guide is used to classify positions in series for which there are no specific grade-level standards, e.g., GS-801 positions. Part II of the GS-810 standard covers the design and planning stage of an engineering project. The GS-840 standard provides relevant evaluation criteria written in the FES format. Our application of the guide and standards follows.

Grade determination

Evaluation using the GS-800 guide

The grade evaluation criteria consist of two classification factors: Nature of assignment and Level of responsibility. The GS-800 guide does not directly address the type of work performed by the appellant, but his work shares characteristics with some of the assignments and functions described in the guide.

The appellant's position is responsible for providing engineering support to the [project] managers primarily in the form of the TSLCC and CAP.

Nature of assignment

Following are three types of assignments typical of the GS-13 level.

- GS-13 engineers serve as technical experts on the limitations of proven concepts and practices of a broad and complex subject-matter field or functional area. By comparison, GS-12 engineers are especially versatile and innovative in adapting, modifying, or making compromises with proven concepts and practices. As experts, GS-13 engineers are frequently called upon to take short-cuts or to make compromises that are considered risky or extreme within the context of standard guides, precedents, methods and techniques. The unusual demands of the assignment are frequently due to the extraordinary urgency, public interest, or economic restraints associated with the assignment, thus creating a need for critical judgments in making substantial compromises to satisfy overall requirements. Assignments require the ability to anticipate and to take positive action on problems which, if not identified in their early stages, would likely lead to serious consequences, e.g., problems involving public safety, key relationships, resource limitations, or performance reliability.

- GS-13 engineers plan and conduct advanced work in areas in which large blocks of data are controversial or unknown. Assignments typically are of such breadth that they require planning and developing several phases, each involving the development or origination of some completely new features. Other assignments may be much narrower, but are of such intensity that available theory is not applicable and relevant experimental data are nonexistent. In such cases GS-13 engineers pursue and correlate several lines of investigation within the narrow area of assignment. By comparison, at GS-12, although data may be inadequate or controversial, it does exist.

- GS-13 engineers perform staff advisory, consulting, and reviewing services to an organization performing a variety of assignments of GS-12 difficulty. Some positions are in the central engineering office of an agency or bureau with responsibilities for reviewing and coordinating all field work in a narrow program area and proposing additional work in the light of the needs of the agency or bureau.

At the GS-14 level –

- Engineers conceive, plan, and conduct work in unexplored areas where there is little or no theory to guide experimentation, progress is devious, new techniques and approaches need to be devised, and future lines of fruitful experimentation are difficult to determine. Based on their qualifications and recognition as an authority in their fields, GS-14 engineers break through the frontier areas and come up with new knowledge of fundamental significance which will influence the procedures and ideas of others. They develop and design new theoretical treatments, instrumentation, equipment, and procedures for testing and solving the problems. They are recognized as authoritative sources of information internally and by other agencies on scientific and technical problems, latest development and trends, and other matters relating to their area of specialization and related areas. Because assignments are lacking in specificity, GS-14 engineers develop and modify the objectives in the course of

planning and conducting their work. They have technical responsibility for continuation or abandonment of the work subject to approval of the supervisor or higher levels.

The agency evaluated the appellant's work at the GS-13 level. The appellant indicates that he has a mastery of the full range of concepts, principles, and practices applicable to TSLCC and CAP. With regard to the CAP, he states that he develops new processes and strategies from these theories to facilitate the new level of accountability, integrating traditional project management with state-of-the-art project control processes, while interacting with traditional DOE policies and standards of operation.

The appellant's work has characteristics of the first two types of assignments typical of the GS-13 level. The appellant knows the limitations of existing and state-of-the-art theories, concepts, principles, and practices of cost estimating, project control, contracting, budget, project management, scheduling, and finance as they relate to the [project's] TSLCC and/or CAP. Knowing those limitations, the appellant, like the GS-13 engineer, conducts risk analyses and makes recommendations or proposes alternatives to address public interest and economic restraints. The record reflects that the appellant's work is also similar to the GS-13 level work where large blocks of data are unknown as the TSLCC involves several phases that must be considered and integrated for a first-of-its-kind project with a timeline of over a hundred years.

While the appellant is performing difficult and innovative work, it does not fully meet the GS-14 level. The [project] is a first-of-its-kind facility, so to a certain degree the development of the TSLCC and CAP is in an unexplored area. However, the appellant is applying existing theories and concepts to the TSLCC and CAP. In contrast, the GS-14 engineer works in unexplored areas where there is *little or no theory*, which requires him to come up with *new knowledge* of fundamental significance, *new theoretical* treatments, and procedures for testing and solving problems. For instance, while [appellant's organization] and its contractor may not have developed a CAP for the [project] before, CAP's have been developed for other systems and projects by DOE. The appellant cited the application of the Cost/Schedule Control Systems Criteria (C/SCSC) doctrine as an example of higher graded work; however, the Department of Defense (DOD) first employed C/SCSC in 1967. In 1996, DOD revised its C/SCSC guidance and renamed the tool Earned Value Management Systems, which integrates the project scope of work with schedule and cost elements for optimum project planning and control. Applying existing systems, even though they have limitations and must be customized to fit a project, does not reach the GS-14 grade level.

Level of responsibility

Following are descriptions of responsibility which correspond to the types of assignments described above at the GS-13 level.

- At the GS-13 level, supervisors assign work in terms of broad, general objectives. Plans and proposals are reviewed for feasibility in relation to management requirements and policies, rather than technical adequacy. Because of the nature of assignments, GS-13 engineers are delegated extraordinary responsibility for decision making on both technical and nontechnical matters. They not only plan and coordinate the various phases of work, but also

establish priorities, and determine what portion of available resources to devote to each phase. Frequently, they act as official spokesman for their activity, or the Government's interest, as an authority in resolving problems of a critical or controversial nature. They negotiate agreements with agencies and contractors where there are conflicting interests and opinions among organizations, or among individuals who are themselves expert in the field or area of work. GS-13 engineers are responsible for recognizing the impact of decisions on agency programs in the specialty field or functional area. Subsequent to discussion with the supervisor, GS-13 engineers recommend the course of action on complex features involving vital problems of public acceptance, safety, or security. Otherwise, discussions are usually restricted to those matters relating to policy or budget, or to the need for fundamental changes in objectives.

- At the GS-13 level, supervisors assign work in terms of broad, general objectives. Questions of setting boundaries or limits to assignments are mutually discussed. Supervisors ordinarily provide no technical assistance to GS-13 engineers in the analysis of problems and development of plans. They review completed work only to ensure adequate achievement of objectives and compliance with agency and/or local policies. Supervisors and others accept the technical bases for GS-13 engineers' recommendations for extension, modification, or adoption of new lines of attack or inquiry. Technical findings and solutions to problems have direct and widespread effect on subsequent development or revision of design and operational criteria. Guidelines are so inapplicable that GS-13 engineers exercise marked originality in developing hypotheses, approaches, and concepts not previously tested or reported in the literature of the field. GS-13 engineers maintain liaison and correspondence with scientists and engineers in other organizations who are expert consultants on trends and innovations in their specialties or related fields.

- GS-13 engineers receive little or no technical guidance within the specialty area. Supervisors and others accept authoritative determinations not in conflict with policies and basic standards. Supervisors of GS-13 engineers usually recognize and accept their proposals for new or additional work as those of an authority in the specialty area. GS-13 engineers have contact with engineers in field offices. Their contacts involve negotiation and persuasion in obtaining the adoption of technical points and methods that are in conflict with the desires and opinions of other engineers.

Following are two types of responsibility found in typical GS-14 level assignments.

- Engineers conceive of and – after a discussion with the supervisor of the feasibility and value of such work in comparison to other possible areas of work – initiate assignments. They develop and modify the objectives and boundaries of assignments subject only to administrative control on such matters as funds, personnel available, and procurement of equipment. By comparison, supervisors assign projects to GS-13 engineers in terms of general objectives and review completed work for achievement of these objectives. GS-14 engineers personally conceive of work they are going to perform and develop and modify the objectives of such work. Supervisors review completed work for their own information in keeping abreast of developments in the field. GS-14 engineers justify the feasibility and

desirability of new work proposed by them to top agency or bureau officials who are ultimately responsible for the content of the agency or bureau programs.

- GS-14 positions operate under administrative supervision only. Guidance from higher levels is restricted to matters of broad policy, program objectives, and budget limitations. Decisions, commitments, and conclusions ordinarily have considerable influence on the development of the agency program and the establishment of standards and guides for extensive engineering activities. As representatives of their agency, GS-14 engineers reach these kinds of agreements with groups from other agencies or organizations. Recommendations and decisions are almost universally accepted as technically sound even though final approval may depend upon formal action by others.

The appellant indicates that his supervisor provides broadly defined requirements and that he independently plans, designs, and implements all functions associated with the TSLCC and CAP. The appellant's supervisor indicates that he holds weekly staff meetings so that he is apprised of the status of projects, that he reviews the draft reports prepared by the contractors after the appellant to ensure the reports meet objectives and provides advice to the appellant for improving the product. The appellant worked under the overall guidance of the [appellant's organization] CAP project manager. The CAP project manager had daily phone or e-mail contact with the appellant particularly between March and July for the OMB briefings, development of data, and while the report was written.

The appellant works with a great deal of independence and authority and we found that his level of responsibility shared many characteristics with the GS-13 level where engineers work within broad general objectives, receive little or no technical guidance, resolve problems of a critical or controversial nature, negotiate agreements with agencies and contractors where there are conflicting interests and opinions and where the engineers' work is reviewed for achievement of objectives.

The appellant's level of responsibility does not meet the GS-14 level criteria. While he independently plans and implements work, it is not in relation to GS-14 level assignments as discussed in the evaluation of the first factor. The appellant is also given specific assignments, i.e., the TSLCC and CAP. In contrast, GS-14 engineers conceive of, and after discussion with the supervisor on the feasibility and value of such work in comparison to other possible areas of work, initiate assignments.

Both factors are evaluated at the GS-13 level; therefore, by cross-reference to the GS-800 guide, the appellant's work is evaluated at the GS-13 level.

Evaluation using the GS-810 standard

Part II – Planning and Design of the GS-810 standard is written in a narrative style and the evaluation criteria consider the inherent complexity of planning and design problems assigned and the level of judgment and authority exercised.

At the GS-13 level –

- The engineer functions as the technically responsible specialist (in a subject matter or functional area or on a type of facility) in an organization in which work in his/her field constitutes a major activity and presents problems of significant depth and complexity. The engineer is called on for opinions and advice on any matter within or touching on his/her field. The engineer develops procedures and standards for carrying out his/her specialty in the organization and represents the organization with authority on technical engineering matters within the specialty.

- The engineer at this level individually performs advanced work relating to difficult or critical problems, and often leads the efforts of a team carrying out broad project assignments with emphasis in the area of specialization. Such projects normally involve planning or design of facilities, structures, or systems characterized by some of the following conditions: a broad range of elements, subsystems, or components to meet a variety of operational requirements; unusually difficult site conditions and limitations, or major aspects of environmental conditions that cannot be adequately determined from actual measurement or observation; novel problems relating to efficiency and safety requirements; and controversial economic and public policy issues. The engineer specialist must apply perception and analysis in depth of the variety of interrelated and conflicting conditions present in such projects; experienced judgment in selecting optimum planning and design approaches from a technical, economic, and public need standpoint; and outstanding skill in representing the activity in connection with the assigned project, to present and explain controlling policies, objectives, and needs to cooperating or concerned authorities, agencies, and groups.

- The GS-13 engineer performs work within the framework of program and general technical guidelines established by higher organizational authority. Because the engineer is the specialist in his area, the technical aspects of the work (identification and analysis of controlling factors or problems, selection of design criteria and approaches to problem solution) are performed independently and reviewed primarily to determine that objectives are being properly realized.

At the GS-14 level –

- The engineer at this level functions as an authoritative source of theoretical expertise and practical "know-how" throughout the employing agency, (e.g., a Bureau or national organization) in a function or program, subject-matter area, or a category of facilities. His/her specialty encompasses projects or programs of major significance, for which controlling theory and practices are in great measure undefined, or in which the operating requirements or engineering methods and practices are in a state of development or are affected extensively by advances in technology. The GS-14 engineer is expected to devise new theoretical approaches for developing criteria and solving problems, to develop standard engineering methods and procedures covering agency operations in his/her specialty, and to give technical review to such operations carried out in diverse locations and circumstances.

- Within broadly stated agency objectives and budget limitations, the GS-14 engineer is virtually free to define and develop the technical scope and aims of the assignments and to

identify and select fruitful areas within his/her specialty for study or investigation by himself/herself or others in the agency.

- The engineer consults with supervisors and coworkers, to ascertain what program developments or projected activities have a bearing on his/her work and to receive guidance for planning and carrying out assigned responsibilities.

- The engineer at this level often serves as a member of intra-agency panels or boards, furnishing expert advice and representation in his/her specialized field.

- The following are examples of the kinds of assignments performed individually by engineers at the GS-14 grade level:

    (1) Is an expert in coastal and estuary protection works, where the constantly, and sometimes greatly, changing physical environment presents many variables and unknowns in planning and design criteria and critical problems with respect to costs and economics. The GS-14 engineer serves as a roving consultant and advisor to the field activities of an agency where such facilities are being designed and constructed. Initiates investigations and studies to develop design criteria, and to find solutions to critical problems in design, construction, or operation; carries out such studies personally, or guides field or contract personnel specializing in various facets of the problems in setting up investigation, evaluation, and testing projects.

    (2) Serves as an authoritative source within the agency on theory and procedures for making stress analyses of concrete structures that depend on stress rather than weight for stability (e.g., high gravity dams, arch dams, Ambursen type dams, and cantilever retaining walls). Plans and carries out investigations, personally or through others, to improve or develop new procedures for the trial load method of analysis, to adapt broad principles of the theory of elasticity to specific problems of analysis to determine effects of temperature changes and seismic forces on stresses and stability, and to apply mathematical processes of analysis through automatic data processing. Furnishes expert testimony at hearings on matters pertaining to safety and stability of structures such as those listed above. Represents the agency in conferences with Federal, State, and other government agencies, and utilities firms, for exchange of information and advice on matters within his/her specialty.

The appellant's work shares many characteristics with the GS-13 level.

- Similar to the GS-13 engineer, the appellant is the technically responsible specialist as he is the overall engineering advisor and technical consultant for the TSLCC and CAP for the [project] organization. The appellant individually performs consultative and problem-solving work as well as leads teams relating to difficult and critical problems that have a significant impact on the accomplishment of the [project]. Within the [project] organization, he is called on for his opinion and advice and he represents the [project] with authority within his specialty.

- The [project] involves planning, design, construction, operation, and closure of a geologic repository located several thousand feet below the surface to store a total of 70,000 metric tons of SNF and HLW which will be emplaced over several years. Comparable to the GS-13 projects, the [project] is characterized by first-of-its-kind structures and systems with a broad range of elements, subsystems, and components to meet operational requirements; unusually difficult site and environmental conditions; novel problems relating to efficiency and safety; and controversial environmental, societal, and political issues. These complex features require the appellant, like the GS-13 engineer, to use expert analytical skills to integrate a myriad of public, economic, and technical considerations into the TSLCC and CAP. The appellant's contacts are also comparable to the GS-13 level as the appellant represents the [appellant's unit] and [project] with high-ranking officials, engineers, scientists, technical experts, and all levels of management within the contractor organization, and with Federal, State, and local government agencies to negotiate, justify, and resolve important and controversial project management matters.

- Comparable to the GS-13 level, the appellant's supervisor provides administrative direction and makes assignments in terms of broadly defined responsibilities; the appellant exercises considerable judgment, ingenuity, and creativity in extending practices and approaches to the management of all related technical activities in support of [project] goals; and the appellant's work is considered technically authoritative and is reviewed, if at all, for fulfillment of program objectives and the effect of advice and influence on the overall [project].

- The CAP was an important document in obtaining funding for the [project]. In that sense it was similar to the fourth example of a GS-13 level assignment where the engineer, using an extensive knowledge of engineering methods, practices, equipment, and materials, develops comparative engineering cost analyses and estimates that serve as the basis for (a) selection of design standards and construction systems for a nationwide hospital construction program, (b) Congressional appropriations for approved projects, and (c) negotiation of settlements on construction contract changes.

The appellant's position does not demonstrate the characteristics typical of the GS-14 level.

- He does not serve DOE in the role of authoritative source of theoretical expertise in TSLCC and CAP throughout DOE. At the time of our interview, he had received one call for information from an agency person who was undertaking a similar assignment.

- The appellant does not devise new theoretical approaches for developing criteria and solving problems. As discussed in the evaluation of the appellant's position by comparison to the GS-800 guide, the appellant recognizes the limitations of existing theories and concepts and customizes them to fit the situation.

- The appellant is not virtually free to select what he considers to be fruitful areas in his specialty for study or investigation by himself or others in the agency.

- He has not served on interagency panels or boards as described at the GS-14 level. Both contacts and service on interagency panels in the engineer's specialty area would be more frequent.

The appellant's work is evaluated at the GS-13 level by reference to the GS-810 standard.

Evaluation using the GS-840 standard

The GS-840 standard is in the FES format of nine point-rated factors. Each factor is divided into levels that cover ranges of progressively more difficult duties and responsibilities. However, each factor-level description describes only the minimum level needed to meet the factor-level. If a position fails to fully meet the minimum level, the next lower level that is fully met is assigned. After evaluating all factors, the assigned points are totaled and the grade is determined by reference to a conversion table.

Factor 1, Knowledge required by the position

This factor measures the nature and extent of information or facts which the engineer must understand to do acceptable work (e.g., steps, procedures, practices, rules, policies, theories, principles, and concepts) and the nature and extent of skills necessary to apply this knowledge. The knowledge and skills of a nuclear engineer involve reactor theory and the fundamental engineering principles used in dealing with the radioactive environment. To be used as a basis for selecting a level under this factor, a knowledge must be required and applied.

- Level 1-8 requires the mastery of one or more specialty fields to the extent that the engineer is capable of applying experimental theories, new developments, and experienced judgment to solve the more difficult problems not susceptible to treatment by accepted methods and the skill sufficient to extend and modify existing techniques and develop new approaches for use by other engineering specialists in solving a variety of engineering problems.

- Level 1-9 requires the mastery of one or more specialty fields and recognized skill in generating new hypotheses, developing new concepts, and planning and evaluating long-range programs and projects; or skill sufficient to function as a nationally recognized consultant and expert in the field of nuclear engineering. Following are two illustrations:

  Knowledge and skill sufficient to serve as a recognized expert consultant to a department or agency having responsibility for (1) the resolution of nuclear energy policy problems or projects that are of unusual size or complexity and (2) evaluating, advising on, and reporting on technological problems such as short- and long-term management of nuclear wastes; availability, cost, and assurance of nuclear fuel supplies; nuclear plant safety and reliability; policies regarding commercialization and industrial base development; formulation and planning nuclear engineering and technological investigations and their extension to state-of-the-art reactor design and construction techniques of either fission or fusion design. The engineer at this level contributes new designs or techniques which are of material significance in the solution of problems that are national or worldwide in magnitude.

> Knowledge and skill sufficient to serve as a recognized technical expert in resolving controversial or novel problems of unusual size or complexity, involving projects such as establishing original design concepts; planning or directing a first-of-a-kind operation; and/or implementing state-of-the-art technology as they affect the nation's ability to safely and expeditiously deploy nuclear-powered submarines in support of national defense, national objectives, and international commitments or as they do not compromise the safety or health of the nation.

The level of knowledge required of the appellant's position is comparable to Level 1-8. We could not assign Level 1-9 as we found no indication that the appellant's work required a mastery of a specialty field to the extent needed at Level 1-9. The appellant's position supports planning and evaluating the long-range [project], but his position modifies and extends existing cost estimating, project management, and other concepts and systems in developing the MGR TSLCC and the CAP for a first-of-its-kind nuclear waste underground repository. Such work compares to Level 1-8. We found no evidence that the appellant's position was responsible for generating new hypotheses or developing new concepts.

This factor is evaluated at Level 1-8 and 1550 points are assigned.

Factor 2, Supervisory controls

This factor covers the nature and extent of direct or indirect controls exercised by the supervisor, the engineer's responsibility, and the review of completed work.

- At Level 2-4, the supervisor sets the overall objectives and resources available. The engineer and supervisor, in consultation, review the critical issues, new concepts, and policy matters and develop the deadlines, projects, and work to be done.

  The engineer, having developed expertise in the specialty area, is responsible for planning and carrying out the assignment, resolving most of the conflicts which arise, coordinating the work with others as necessary, and interpreting policy on own initiative in terms of established objectives. In some assignments, the engineer also determines the approach to be taken and the methodology to be used. The engineer keeps the supervisor informed of progress, potentially controversial matters, or far-reaching implications.

  Completed work is reviewed only from an overall standpoint in terms of feasibility, compatibility with other work, or effectiveness in meeting requirements or expected results.

- At Level 2-5, the supervisor provides essentially administrative direction with assignments given in terms of broadly defined missions or functions.

  The engineer has responsibility for planning, designing, and carrying out programs, projects, studies, or other work independently.

Results of the work are considered as technically authoritative and are normally accepted without significant change. If the work is reviewed, the review typically is concentrated on such matters as fulfillment of program objectives, effect of advice and influence on the overall program, or contributions to the advancement of technology. Recommendations for new projects and alteration of objectives are usually evaluated for such considerations as availability of funds and other resources, broad program goals, or national priorities.

The appellant's supervisor set the overall objectives for the appellant, e.g., the development of the TSLCC and CAP, which is comparable to Level 2-4. This does not reach Level 2-5 where the engineer receives assignments in terms of broadly defined missions or functions. The appellant's responsibility is comparable to Level 2-4 as the appellant plans and carries out his assignments independently based on his expertise, resolves problems, interprets policy as it applies to the assignment, coordinates the work, and provides status reports to his supervisor. The appellant does not carry out programs or projects with the virtual independence associated with Level 2-5. Unlike Level 2-5 where the work receives little or no review, the appellant's TSLCC and CAP work is reviewed from an overall standpoint in terms of its effectiveness in meeting the requirements of the assignment as described at Level 2-4.

This factor is evaluated at Level 2-4 and 450 points are assigned.

Factor 3, Guidelines

This factor covers the nature of guidelines for performing the work and the judgment needed to apply the guidelines or develop new guides.

- At Level 3-4, guidelines are often inadequate in dealing with the more complex or unusual problems encountered in the assignment. The engineer is required to use resourcefulness, initiative, and judgment based on experience to deviate from or extend traditional engineering methods and practices in developing solutions to problems where precedents are not applicable. This level also includes responsibility for the development of material to supplement and explain agency headquarters' guidelines.

- At Level 3-5, working chiefly under broad and general policy statements, regulations, and laws, the engineer exercises considerable judgment and ingenuity in interpreting and adapting guides that exist and in developing new and improved hypotheses, approaches, or concepts not previously tested or reported in the literature of the field. Available guides are generally very limited or lacking due to the novel characteristics of some projects. Frequently, the engineer is recognized as a technical authority in the specialty area and has responsibility for the development of policies as well as nationwide standards, procedures, and instructions to guide operating personnel.

The appellant clearly meets Level 3-4 as he uses considerable judgment, ingenuity, and creativity in interpreting and extending DOE policies and cost estimating and project management concepts and systems to resolve problems where precedents are not applicable to the TSLCC and CAP. However, the appellant was not required to develop new hypotheses, approaches, or concepts that had not been previously tested or reported as described at Level 3-5.

This factor is evaluated at Level 3-4 and 450 points are assigned.

Factor 4, Complexity

"Complexity" covers the nature and variety of tasks, steps, processes, methods, or activities in the work performed and the degree to which the engineer must vary the work, discern inter-relationships and deviations, or develop new techniques, criteria, or information. The basic unit of measuring this factor is the "complex feature." A complex feature is an individual engineering problem, broadly defined, which requires (1) modification or adaptation of, or compromise with standard guides, precedents, methods, or techniques or (2) special considerations of planning, scheduling, and coordination.

- Level 4-5 assignments are of such breadth, diversity, and intensity that they involve many, varied complex features. The work requires that engineers be especially versatile and innovative in adapting, modifying, or making compromises with standard guides and methods or originating new techniques or criteria. Individual assignments typically contain a combination of complex features, generally seven or more, which involve serious or difficult-to-resolve conflicts between engineering and management requirements.

- Level 4-6 assignments (a) concentrate on the limitations of proven concepts and practices of a broad and complex subject-matter field or functional area where issues and factors to be considered are largely undefined and require extensive probing and analysis to determine the nature and scope of the problems; *and* (b) are characterized by unusual demands that are frequently due to extraordinary emergency, public interest, or economic restraints which require the engineer to solve critical problems when timely and effective decisions are necessary to balance performance and deadline requirements against costs and other resource concerns. As a technical expert, the engineer is sometimes called upon to determine whether a desired end item is feasible in relation to its current distance beyond the state-of-the-art in a related engineering field, such as mechanical, electrical, thermal, chemical, or hydraulic.

  Analysis, as envisioned at this level, is carried to the point where either a solution is delivered on various problems or alternative further projects (pursued concurrently or sequentially with the support of others within or outside the organization) are initiated to alter standard concepts or theories, objectives, and/or previously formulated requirements and criteria.

The [project] is an extremely complex engineering project; however, the coordination and development of the TSLCC and CAP required the appellant to recognize the limitations of applicable systems and approaches and to adapt, modify, and extend or otherwise customize them comparable to Level 4-5. His work in developing the [project] TSLCC and CAP did not, however, require concentration on the limitations of proven concepts and practices of a broad subject-matter field where issues and factors are largely undefined as described at the next higher level, Level 4-6.

This factor is evaluated at Level 4-5 and 325 points are assigned.

Factor 5, Scope and effect

This factor covers the relationship between the nature of the work, i.e., the purpose, breadth, and depth of the assignment, and the effect of work products or services both within and outside the organization.

- At Level 5-4, the purpose of the work is to provide expertise as a specialist in a particular specialty field by furnishing advisory, planning, or reviewing services on specific problems, projects, programs, and functions. The work may include the development of criteria, procedures, or instructions for major agency activities. Work products impact on a wide range of the agency's engineering program.

- At Level 5-5, the purpose of the work is to resolve critical problems or to develop new approaches or methods for use by other engineering specialists. Often serving as consultant or project coordinator, the engineer provides expert advice and guidance to officials, managers, and other engineers within or outside the agency, covering a broad range of engineering activities. Results of the efforts affect the work of other engineering experts both within and outside the agency or the development of major aspects of agency engineering programs.

Similar to Level 5-4, the purpose of the appellant's position is to provide technical expertise in coordinating the development of the [project] TSLCC and CAP. The TSLCC and CAP have had an important impact on the success of the [project] equivalent to Level 5-4. The purpose and effect of the appellant's work does not match Level 5-5 as he is not required to resolve critical problems or to develop new methods for use by other engineering specialists on a broad range of engineering activities that affect engineering experts outside the agency or the development of major aspects of DOE's engineering programs.

This factor is evaluated at Level 5-4 and 225 points are credited.

Factor 6, Personal contacts

This factor includes contacts which are made in person or by telephone or radio conversation with persons not in the supervisory chain. Levels described under this factor are based on what is required to make the initial contact, the difficulty of communicating with those contacted, and the setting in which the contact takes place, e.g., the degree to which the employee and those contacted recognize their relative roles and authorities. Above the lowest level, points should be credited under this factor only for contacts which are essential for successful performance of the work and which have a demonstrable impact on the difficulty and responsibility of the work performed.

The relationship of Factors 6 and 7 presumes that the same contacts will be evaluated for both factors. Therefore, the personal contacts which serve as the basis for the level selected for Factor 7 are the basis for selecting a level for Factor 6.

- At Level 6-3, personal contacts include a variety of officials, managers, professionals, or executives of other agencies and outside organizations. Typical of these contacts are manufacturers' representatives, private architect-engineer firms, specialists at contractor plants, and engineers and architects from other Federal agencies, State and local government officials, local or regional members of the media and public action groups.

- At Level 6-4, personal contacts are with high ranking officials from outside the agency, including key officials and top engineering and scientific personnel of other agencies, State and local governments, private industry, public action groups, nationally recognized representatives of the media, and may involve contacts with leading members of foreign governments. The engineer may participate, as technical expert, in committees and seminars of national or international importance regarding nuclear programs or complex and varied features typical of new advanced nuclear components, equipment, devices, or systems utilized in nuclear facilities.

The appellant's regular and recurring personal contacts include officials, managers, professionals, and executives within [appellant's organization], DOE, and the contractors. He gave a briefing to OMB examiners. These contacts are comparable to Level 6-3. The appellant's position does not require regular and recurring contacts with high ranking officials from outside the agency including top engineering and scientific personnel of other agencies, State and local governments, private industry, public action groups, nationally recognized representatives of the media, etc., as described at Level 6-4.

This factor is evaluated at Level 6-3 and 60 points are credited.

Factor 7, Purpose of contacts

Purpose of personal contacts range from factual exchange of information to situations involving significant or controversial issues and differing viewpoints, goals, or objectives. The personal contacts which serve for the level selected for this factor must be the same as the contacts which are the basis for the level selected for Factor 6.

- At Level 7-3, the purpose of contacts is to influence or persuade other engineers to adopt technical points and methods about which there are conflicts, to negotiate agreements with agencies and contractors where there are conflicting interests and opinions among organizations or among individuals who are also experts in the field, or to justify the feasibility and desirability of work proposals to top agency officials.

- At Level 7-4, the purpose of contacts is to justify, defend, negotiate, or settle highly significant or controversial engineering matters. Engineers often represent their agencies in professional conferences, meetings, hearings, or on committees involving technical problems or to plan extensive and long-range engineering programs which culminate in the resolution of critical problems, revision of current approaches and concepts and/or achieve goals and objectives. Contacts are to obtain diverse viewpoints, goals, and internal priorities which require the engineer to achieve a common understanding of the problem(s) and ensure program requirements are met.

The purpose of the appellants' regular and recurring contacts most closely matches Level 7-3. The appellant negotiates agreements with the contractors who are also experts in the cost estimating field on the methods and data needed for accomplishing the TSLCC and CAP. The appellant is not required to represent DOE in conferences, hearings, or on committees involving highly significant or controversial engineering matters as described at Level 7-4.

This factor is evaluated at Level 7-3 and 120 points are assigned.

Factor 8, Physical demands

This factor covers the requirements and physical demands placed on the engineer by the work assignment. This includes physical characteristics and abilities (e.g., specific agility and dexterity requirements) and physical exertion involved in the work, e.g., climbing, lifting, pushing, balancing, stooping, kneeling, crawling, or reaching. To some extent, the frequency or intensity of physical exertion is also considered, e.g., a job requiring prolonged standing involves more physical exertion than a job requiring intermittent standing.

- At Level 8-1, the work is principally sedentary, although there may be some walking or bending involved in activities such as inspections of installed equipment or construction of field site visits.

- At Level 8-2, the work involves construction or field inspections, investigations, or surveys in which the work requires regular and recurring standing for long periods and walking, stooping, bending, and climbing on construction projects or at naval shipyard facilities.

Comparable to Level 8-1, eighty to ninety percent of the appellant's work is performed in an office with occasional walking, climbing, and bending at the project site. The work does not require regular and recurring standing for long periods and walking, etc., as described at Level 8-2. This factor is evaluated at Level 8-1 and 5 points are assigned.

Factor 9, Work environment

The "Work Environment" factor considers the risks and discomforts in the engineer's physical surroundings or the nature of the work assigned and the safety regulations required. Although the use of safety precautions can practically eliminate a certain danger or discomfort, such situations typically place additional demands upon the engineer in carrying out safety regulations and techniques.

- At Level 9-1, work is usually performed in an office setting, although there may be occasional exposure to industrial hazards in a variety of nuclear facilities including contractor's plants or buildings under construction.

- At Level 9-2, there is regular and recurring exposure to moderate discomforts and unpleasantness occasioned by utilizing protective clothing in high temperatures. Work is performed in close proximity to disassembled heavy equipment, parts, and other large metal

components which in some instances are machine-hoisted overhead and offer hazardous conditions.

As eighty to ninety percent of the appellant's work is performed in an office, with only occasional exposure to the project site, this factor is evaluated at Level 9-1. The appellant is not subject to regular and recurring exposure to the moderate discomfort described at Level 9-2. This factor is evaluated at Level 9-1 and 5 points are assigned.

Summary of FES factors

The chart below reflects our evaluation by application of the nine factors in the GS-840 standard:

Factor	*Level*	*Points*
1. Knowledge required by the position	1-8	1550
2. Supervisory controls	2-4	450
3. Guidelines	3-4	450
4. Complexity	4-5	325
5. Scope and effect	5-4	225
6. Personal contacts	6-3	60
7. Purpose of contacts	7-3	120
8. Physical demands	8-1	5
9. Work environment	9-1	5
Total		3190

A total of 3190 points have been assigned to the appellant's position by cross-comparison to the GS-840 standard. This falls within the GS-13 grade level range (3155-3600) by reference to the grade conversion table in the GS-840 standard.

Summary

The appellant's position has been evaluated at the GS-13 level by cross-reference to the General Grade-Evaluation Guide for Nonsupervisory Professional Engineering Positions, GS-800, and the standards for Civil Engineering Series, GS-810, and Nuclear Engineering Series GS-840.

Decision

The appellant's position is properly classified to the General Engineering Series GS-801 at the GS-13 grade level. Selection of an appropriate title is at the discretion of the agency.