U.S. DEPARTMENT of COMMERCE Office of the Secretary
Office of Human Resources Management

Geodesist 14

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NOTE: THE SENTENCE IN PART I DESCRIBING THE PURPOSE OF THE POSITION AND PARTS II AND III IN THEIR ENTIRETY ARE PERMANENT PARTS OF THE LIBRARY AND MAY NOT BE CHANGED OR EDITED IN ANY WAY.

I. INTRODUCTION

Serves as an expert Geodesist, senior technical advisor. Provides expert analyses and techniques development, and/or maintenance of client relationship programs. Conceives, plans, and conducts geodetic work, often in unexplored areas where there is little or no theory to guide experimentations; new techniques/ approaches need to be devised.

II. MAJOR DUTIES AND RESPONSIBILITIES

Participates in the management of the organization as a key technical advisor, involving continuous interfacing with all levels of management.

Responsible for specification, verification, testing, and implementation of computer software development, and adjustments procedures. This includes preparing specifications, user requirements, input formats, and output requirements for software needs.

Restores, evaluates, corrects, and interprets historical geodetic data that are at risk of being lost.

Analyzes the results of applied research and puts the information into operational form. Typical examples include requirement to investigate effects of horizontal crustal motion, incorporation of GPS for vertical ellipsoidal elevations, adjustment techniques, the GPS satellite system and the spatial reference system.

Provides consultation and technical advice to operational and staff elements. Participates in the review of program planning, and makes recommendations on evaluation and development projects relative to revisions, deletions, or additions to programs. Provides advice and guidance in the preparation of specifications for evaluation or development of contracts. Plans, directs, organizes, and conducts technical evaluation and/or development projects. These projects are unique and specialized. Contributes to the preparation of short- and long-range technical development programs.

Maintains contact with federal, state, and local users of geodetic data and analyzes potential requirements to assure the needs of users are as fully met as practicable. Reviews technical work of national and international bodies dealing with data management and information technologies, activities and standards. As required, schedules meetings, workshops, and briefings with user surveying, mapping, and scientific organizations, both national and international, to educate and advise users on the use of geodetic data.

III. FACTORS

1 - Knowledge Required by the Position. Expert knowledge of the theories, principles, and practices in theoretical geodesy and the ability to apply this knowledge to the solution of major problems which are constantly arising as new satellite technology progresses and geodetic practices enter new and more complex areas.

Serves as a technical authority, applying new developments in the field and experienced judgment to solve the novel and obscure problems not covered by accepted methods and extending approaches and precedents to critical problems.

Must have a working knowledge of computer technology as it applies to geodesy to effectively apply mathematical techniques regarding large blocks of data. This involves the control languages of many computers, the data filing systems of direct-access devices, as well as the master data base storage media, and the programming languages applicable to mathematical geodesy.

Must be able to communicate on a professional level with other members of the surveying and geodetic community to effectively represent the organization at local, national, and international meetings to explain geodesy and to take an active part in scientific and mapping organizations.

2 - Supervisory Controls. Supervisor provides administrative direction in terms of the broadly defined missions and functions. Instructions on individual assignments are usually limited to the selection of projects to be undertaken. Technical direction is provided by the senior researchers that have developed the models to be made operational. Employee acts independently to plan, design, and carry out programs, projects, studies, and other work, and has independent responsibility for investigative activities. Assignments are broad in nature and only the overall view of problems is provided. In most instances incumbent will suggest the assignment thought to be most important at that time. In executing assignment, employee does not require technical supervision. Decisions, recommendations, and findings are considered technically authoritative and are reviewed only with respect to their effect of the overall program.

3 - Guidelines. Guidelines are primarily pertinent legislation and broadly stated agency regulations and policies, objectives, mission statements, technical manuals, and related publications. Because much of the work is in new and unexplored areas or deals with unique problems, the guidelines often have very limited applicability to the work performed. The employee uses judgment and ingenuity in deviating from traditional methods, adapts existing methods, and develops new approaches as required. In addition, as a recognized technical authority, begins analyses primarily on the basis of own experience and from research being currently accomplished by national and international peers in the general fields covered. There are no agency guidelines for these tasks. Actively cooperates with people in other agencies and establishments, but typically work involves new methods and ideas which are essential for the beneficial application of results to geodesy and geophysics. Develops and documents new guidelines, and is solely responsible for the technical adequacy of the results. In many instances, defines and documents new methodology and functions, exercising expert technical judgment and innovation.

4 - Complexity. The work involves development of new methods and techniques to solve obscure and novel problems including interpreting and converting mathematical models into operational form. The work frequently involves difficult or unusual negotiations and coordination concerning technical, administrative, or other aspects such as compromises between a theoretically ideal but costly, method and a more computationally smooth method, costing less. Other complicating factors include selecting the approach and methods, interpreting collateral data, and making deductions from intricate, inconclusive, or variable data.

5 - Scope and Effect. The technical expertise of the employee will have a large impact on the use of geodetic data by the user community and on the progress towards the definition and maintenance of reference systems. The technical expertise provided by the employee will also greatly impact the entire scientific community by affecting future geodetic datums. The employee provides expert advice and assistance to scientists and officials both within and outside the agency on a wide range of geodetic matters. The purpose of the work is to isolate and define unknown conditions, resolve critical problems, or develop new approaches and guides for geodesists. Work affects the work of scientific experts, high officials, and the development of major segments of agency programs.

6 - Personal Contacts. Principal contacts are with scientists and officials in the agency's headquarters, regional offices, other federal agencies, and scientists outside the agency, worldwide. In addition, close contact is maintained with surveying and mapping user groups in the federal, state, and private sectors to ensure their needs are properly considered. Contacts are not established on a routine basis.

7 - Purpose of Contacts. Contacts are to share and expand geodetic ideas; to join in communication to solve common problems; to broaden knowledge in field; to communicate the new techniques in geodesy and computer application and expand knowledge in the fields of geodesy and adjustment theory achieved through applied research. Contacts involve negotiation and persuasion to obtain the adoption of technical points and methods that might be in conflict with current practices or with those of the users of the agency products. Typical contacts are with persons with widely differing viewpoints/goals who must be persuaded to accept the agency's point of view or suitable compromises/alternatives.

8 - Physical Demands. Work is primarily sedentary. There may be some walking, standing, bending; carrying light items (e.g. papers, small books). A valid driver's license may be required to drive an automobile in the performance of duties.

9 - Work Environment. Work is performed in a typical office setting. The work area is adequately lighted, heated, and ventilated.

IV. UNIQUE POSITION REQUIREMENTS

This position is exempt from coverage under the Fair Labor Standards Act.

(Last Updated:)
