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## Research Hydrologist 13

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### GS-1315-13

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

This position is located in

Incumbent is the sole researcher or scientific coordinator of a team of scientists performing research into various aspects of the hydrologic cycle, with the objective of improving the physical understanding and predictability of the cycle components that affect runoff and streamflow.

#### II. MAJOR DUTIES AND RESPONSIBILITIES

The incumbent is assigned to work on technical aspects of the National Weather Service River Forecast System (NWSRFS). This includes support of (1) the Enhanced Calibration System (generates historical time series of hydrometeorological data); (2) the expanded use of probabilities of occurrence in hydrologic forecasts [including the Extended Streamflow Prediction (ESP) System]; and (3) the Operational Forecast System (generates real-time river and flood forecasts using batch and interactive programs). The implementation of enhanced procedures in the RFC Forecast Systems will result in more frequent forecasts, processed with increased data sampling density, to provide greater accuracy and longer forecast lead times and expanded information on the extent and timing of flooding.

Assignments will require the incumbent to perform the following specific types of research studies and activities:

- (1) Serve as team or project leader to develop and/or implement new procedures for incorporation into NWSRFS, including improved calibration techniques and models. Such leadership will include the (a) focusing of resources on this area of work to see that deadlines are met, and (b) evaluation of field tests at risk reduction sites to see that deficiencies (if any) and field suggestions are appropriately considered for integration into the operational software.
- (2) Convert known technology so that it can be used in NWSRFS.
- (3) Maintain and enhance existing NWSRFS software so that it better meets field requirements.
- (4) Develop software for NWSRFS to make it easier for field offices to evaluate results and /or prepare forecasts.
- (5) May be called upon to serve as a focal point for selected RFCs for technical guidance in the use of the NWSRFS. Will also be called upon to provide direct technical assistance by telephone or through personal visits for the implementation and support of NWSRFS at field operations.
- (6) Prepare NWSRFS users' manual documentation, technical reports, and papers. Present results at seminars and conferences.
- (7) Provide technical support to other Laboratory employees in his/her area of expertise. Also, act as a Federal Project Officer when work to be performed under contract involves his/her area of expertise.
- (8) Represent to other parts of NWS, NOAA, and the Department of Commerce (through briefings and demonstrations) the improvements in the hydrologic forecasting service that are being put in place as a result of

the Advanced Weather Interactive Processing System.

(9) Keep abreast of developments in his/her own area of expertise.

(10) Perform other duties as necessary to support the NOAA research mission.

### III. FACTOR LEVELS

Factor 1 - Research Situation/assignment Degree C, 6 pts.

Incumbent works with a highly focused core of individuals who will develop and maintain software for the River Forecast Centers (RFC), or Weather Forecast Offices (WFO). This work will support hydrologic data collection; analysis associated with the WSR-88D weather radars and other data sources; formulation of runoff and river routing models; basin calibration techniques; and the presentation of these models and procedures in a manner which assists the forecaster in making critical forecast decisions. Support provided includes training, operational support, and software maintenance.

Projects carried out or led by the incumbent are established to develop the hydrologic components of enhancements under the NWS modernization. The work of the incumbent is expected to result in faster and more accurate forecasts of river flows. It should also result in publishable contributions in validation of scientific theories.

Factor 2 - Supervision Received Degree C, 6 pts.

The research conducted by the incumbent is subject to broad technical review by the supervisor, who provides broad goals and perspectives on research problems. However, the incumbent is responsible for developing the research plans for the specialty area(s), adjusting them to meet new developments; meeting with problems as they arise; and analyzing and interpreting results. The supervisor is kept current on project status through discussion and progress reports.

Factor 3 - Guidelines and Originality Degree C, 6 pts.

Significant gaps or contradictory findings exist in relevant literature in the field of hydrology. Incumbent applies a high degree of originality in defining problems for study. Incumbent applies new techniques and original methods of attack to solution of important problems in the science. These problems present novel or unprecedented aspects.

Factor 4 - Qualifications and Scientific Contributions Degree C, 12 pts.

Incumbent is author of one or more papers of considerable interest to other researchers in the assigned research situation. Research contributes new inventions, designs or techniques to important problems concerning surface water hydrology. Additional contributions may involve leadership of a productive research team or leadership in formulating productive research ideas. Incumbent is beginning to be sought out by other mature and professional researchers in the field for purposes of consultation and/or collaboration. Has held important committee assignments on professional hydrologic groups and task forces and is recognized as a qualified authority to speak on technical matters with researchers within and outside the organization.

TOTAL POINTS = 30

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

### IV. UNIQUE POSITION REQUIREMENTS

(Last Updated: November 4, 1994)

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