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Meteorologist (Science and Operations Officer) 14

GS-1340-14

INTRODUCTION:

This position is located at a Weather Forecast Office (WFO) which has responsibility for at least two of the following: CWSU oversight, collocation and cooperative research and educational programs with a university, state representation, multiple state coordination, Marine programs, and/or management of the shared NEXRAD site. The primary focus of the Science and Operations Officer (SOO) is to ensure the scientific integrity of the hydrometeorological products and services provided to the public by the WFO and to lead or participate in joint research projects and developmental efforts conducted with the collocated university/research center. The incumbent is expected to initiate and oversee the transfer of new technologies from the research community to the operational environment, to promote the development of local forecast techniques, to establish professional staff enrichment activities, and to evaluate and improve the professional operational activities of the Office. The SOO monitors and evaluates the accuracy and scientific basis of forecast and warning products and services provided by the WFO. The SOO also is involved in the oversight of programs and persons assigned to the university/research center. When so designated, the SOO serves as Chief of the facility during the absence of the Meteorologist in Charge with full technical and administrative responsibility for all operational programs, products, and services of the WFO.

II. MAJOR DUTIES AND RESPONSIBILITIES

Technology Transfer/Development Activities:

- Leads and/or participates in significant joint research projects and developmental efforts conducted in a collaborative manner with atmospheric science experts in the collocated or nearby university, other Federal agencies, and/or related professional societies and organizations.
- Conducts local hydrometeorological studies and identifies and formulates hypotheses for specific problems for study. Guides and counsels WFO personnel engaged in such studies and development activities. Determines areas of appropriate and/or fruitful investigation, especially as it relates to the warning and forecast environment.
- Coordinates and consults with other NWS, NEXRAD, OSF, ERL, university and hydrologists to identify and develop opportunities for enhancing the scientific basis of forecasts and services provided by the WFO.
- Assess continuing and future training needs required to successfully incorporate new technology and science into the WFO operations.
- Ensures that WFO facilities and staff resources are available for full participation in developmental projects, as appropriate. Coordinates with the MIC and regional staff in channelling the results of investigations, establishing test beds, and applications mechanisms to evaluate project output.
- Coordinates and consults with scientists in the NWS, NOAA, other agencies, academia and the private sector to identify and/or development opportunities for enhanced forecast procedures and techniques to be used at the WFO. Integrates new scientific/technological advances and techniques into WFO operational procedures and operations.

Evaluation and Improvement Activities:

- Evaluates the technical and scientific adequacy of all WFO hydrometeorological products and services by conducting a product verification effort targeted to improving the scientific basis of products produced. Devises local evaluation methodologies and develops evaluation reports. Identifies scientific shortcomings, recommends improvement actions to the MIC, and devises plans for implementing those corrective actions.
- Manages the WFO participation in nationwide evaluation programs. Ensures accurate verification data and analyses and facilitates the development of local verification procedures designed to assist national and local programs, developmental efforts, and new technology implementation.
- Systematically monitors and evaluates NEXRAD products and the effectiveness and applicability of algorithms developed for local use with NEXRAD output. Collaborates with the NEXRAD OSF staff to refine radar products and algorithms to maximize their local use and applications.

Performs the function of Senior Forecaster on shift duty approximately 25% of the time:

- During an assigned shift, the incumbent is responsible for the quality and timeliness of all warning, forecast, and service products prepared and issued by the WFO operational staff. Reviews, develops, and/or approves public, aviation and other weather forecasts, information and products prepared by shift staff before issuance.
- Exercises judgment on behalf of the MIC as to the need for additional staff during the shift or in preparation for the upcoming shift. Handles general office administrative matters which may occur on shift. Exercises call-back authority and authorizes expenditures of funds for overtime for additional or augmenting WFO staff, as appropriate.
- Supervises and/or provides hydrologic service products for assigned WFO area, including forecasts and warnings of floods and river stage for the public and numerous users dealing with water resources and/or land management, transportation, emergency management, river and flood plain control, etc.
- Routinely collaborates with the MIC in assessing subordinate staff performance from a scientific and technical perspective. Formulates and/or provides input to performance ratings of subordinate staff and recommends recognition as appropriate.
- When designated, acts for the MIC during his/her absence, with full technical, managerial, and administrative responsibility for WFO programs, products, and services.

III. FACTOR LEVELS

Factor 1. Knowledge Required by the Position:

- Mastery of advanced theoretical meteorology, including the dynamics of the atmosphere, mesoscale meteorology, and the application of computer methods of numerical weather analysis and prediction.
- Mastery of applied meteorology.
- Knowledge of the principles and theories of hydrology and the hydrologic characteristics of rivers, streams, and drainage basins in the forecast area.
- Highly advanced knowledge of applied research methods and data management techniques to enable the incumbent to lead and participate in challenging hydrometeorological research and development efforts and to incorporate the latest advances into the WFO forecast and warning programs.
- Knowledge of computer science principles to implement or modify applications software is required.
- Thorough knowledge of training principles and methods and skill in the application of presentation techniques and various instructional media, including computer-based instruction.
- In-depth knowledge of NWS operational procedures and instructions, and real time guidance products pertinent to the production of weather forecasts and services, river and flood forecasts, and other special purpose products.
- Thorough knowledge of operational characteristics of complex electronic and electro-mechanical equipment utilized in data acquisition, communications, and service programs assigned to the WFO. This includes the meteorological skills necessary to properly utilize sophisticated Doppler weather surveillance radar equipment and to interpret and apply its output in real-time operational environment.
- Knowledge of statistical methods and standard techniques used in assessing forecast and warning accuracy.
- Highly advanced level of knowledge of aviation meteorology for the production of specialized aviation forecasts and advisories for the aviation community, for guidance of National Weather Service and FAA pilot briefers, and

for special users such as balloonists, soaring clubs, etc.

Factor 2. Supervisory Controls:

The incumbent works under the general direction of the Meteorologist in Charge of the WFO, but has considerable freedom in carrying out responsibilities, and in the daily operation of the office. Assignments are broad in nature with the incumbent initiating assignments and developing and modifying the objectives of the work. Completed work is reviewed in order for the supervisor to keep abreast of developments.

Factor 3. Guidelines:

The incumbent will exercise a high degree of originality and judgment to define complex problems, to develop a plan of attack to perform the required research and training, and to develop results. New technologies and techniques may have little or no precedents. Therefore, the incumbent must exercise originality and judgment to devise best approaches for integrating new technologies into operations or suggesting new research or techniques. Guidelines are general scientific and training principles and regulations such as the NWS Operations Manual. Sound judgment is also required to interpret and adapt such guidelines. Changes in guidelines may occur due to the results of the incumbent's work. General guidance on developmental efforts is available from national and regional headquarters.

Factor 4. Complexity:

The incumbent must combine an expert knowledge of meteorology and hydrology, training principles and methods, research methods, computer and statistical techniques, scientific and technical writing principles, leadership and decision making skills, with warning and forecast methodologies in order to lead the transfer of research results and new technology into the operational arena. The incumbent is placed into a leadership role where precedent does not exist. New technologies and mesoscale meteorology will require innovative approaches in order to achieve a rapid and effective application in warning and forecast operations of the WFO. The incumbent must also fulfill the tasks of a Forecaster In Charge when necessary. A high level of creativity and initiative is required.

Factor 5. Scope and Effect:

By facilitating the introduction of sophisticated technology such as NEXRAD, and incorporating recent research advances into WFO operations, the incumbent will have a major role in improving the warning program of the Agency. The incumbent will be both directly and indirectly involved in this through training of other forecasters at the WFO, and by participating in all aspects of the office's warning and forecast programs. Successful developmental endeavors at the WFO will result in more effective operational procedures designed to enhance the warning and forecast roles of the NWS.

Factor 6. Personal Contacts:

External contacts include state and local officials with responsibilities for dealing with community response to weather threats and natural disasters. This may include elected officials such as mayors, governors, agency heads, etc. Strong contacts are established and maintained with research scientists in the university/academic community, and with researchers in professional atmospheric science organizations, such as OCAR/NCAR, the AMS, etc.

Intro-agency contacts are: (1) with employees in the WFO, (2) with employees at nearby NWS offices, (3) with regional or headquarters staff, (4) with meteorologists at National Centers (Hurricane, Severe Storm, NMC), with RFC hydrologists, and (6) NOAA atmospheric research scientists.

Contacts with other agencies include the FAA, FEMA, State emergency management, environmental and air pollution agencies, NASA, Corps of Engineers, agricultural agencies, community action, other special purpose groups and cooperative storm spotters, the Coast Guard, the EPA, and the Forest Service.

Contacts are made with the general public, citizens groups, civic organizations, the mass news media, and other specialized users.

Factor 7. Purpose of Contacts:

Contacts are for the purpose of: (a) Coordination and consultation on educational and operational development projects; (b) facilitating the integration of new technology, scientific procedures and new advancements in meteorology into the WFO operations and services; and, (c) facilitating the scientific assessment of WFO programs and services, and to assist in devising and integrating operational methods and techniques for the improvement of programs.

Factor 8. Physical Demands:

The work is generally sedentary, although carrying of bulky projectors and other information materials is occasionally required, along with some light travel. Additionally, rotating shift work is occasionally required with the WFO in operation 24 hours a day, seven days a week. During periods of threatening weather or rapidly changing weather conditions, the increase in workload and the necessity for rapid dissemination of weather warnings and updates requires periods of acute mental alertness and produces considerable mental stress. Adverse weather conditions often require the incumbent to work hours longer than the usual shift, adding to mental and physical stress.

Factor 9. Work Environment:

The work environment most closely resembles that of an office with added specialized equipment.

Fair Labor Standards Act: Exempt

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