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Meteorologist (Regional Techniques and Professional Development) 14

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INTRODUCTION

This position is that of a Regional Techniques Improvement and Professional Development Meteorologist within the Scientific Services Division (SSD) of the Regional Headquarters. The incumbent serves as a scientific leader on forecast techniques and meteorological training with special emphasis on utilizing new data sets and emerging technologies to improve mesoscale forecast prediction. The incumbent also serves as the regional expert in regard to professional development efforts and applied research and, as such, provides guidance and coordination for Science and operations Officer activities.

II. MAJOR DUTIES AND RESPONSIBILITIES

- Develops, implements, and manages advanced techniques for preparing forecasts and warnings for use within the region, with emphasis on applying new data sets and technology to improve synoptic and mesoscale forecasts.
- Develops, implements, and coordinates hydrometeorological training programs and techniques for the field in order that advances in theoretical meteorology and hydrology can be transferred to and used by operational NWS personnel.
- Evaluates guidance products from the National Centers and Techniques Development Laboratory (TDL) for usefulness and performance characteristics as this guidance applies throughout the region. Recommends changes for new guidance products or modification of existing ones.
- Plans and conducts field visitation to resolve technical problems, provide training, evaluate operations and to introduce new technical information and procedures to improve weather forecast techniques.
- Determines the need for applied research to improve the Region's analysis and prediction capabilities.
- Evaluates NWSH policies and standards governing the scope of data collection, analysis, prognosis, and interpretations to be performed at field offices in relation to forecast operations and local applied research activities.
- Recommends and implements regional policy relative to the desired quality of technical procedures used at the forecast and service offices.
- Evaluates computer resources used in the field and makes recommendations on improved use of these systems.
- Writes technical papers and articles for regional distribution concerning operational application of scientific theories, techniques, and other material associated with weather prognosis and computer programs.
- Reviews and edits technical papers submitted from field offices including documentation of computer software prepared by regional personnel. Such editing pertains to papers submitted for both internal and external publication.
- Develops and implements verification techniques and statistics to ensure high quality and to improve products.

- Serves as a consultant to the region on technical matters related to the use and interpretation of data from new technologies.
- Reviews literature to search for new techniques applicable to operational forecasting.
- Monitors, coordinates, and makes recommendations to field office managers concerning local research projects pursued by regional personnel. Assists field offices in obtaining data necessary to conduct applied research.
- Manages and implements computer applications to improve forecast, warning, and service programs.

III. FACTOR LEVELS

Factor 1 – Knowledge Required by the Position

Expert knowledge of theoretical and operational meteorology and the ingenuity to interlace this with computer science knowledge to provide expert advice to field offices, regional headquarters, and national headquarters in all areas of operational meteorological support.

In-depth knowledge of emerging technologies and data sets and their application to synoptic and *mesoscale forecasting.

Ability to apply new developments to analysis and forecast problems not readily treated by traditional methods.

Ability to generate new meteorological and computer programs for the region and, in many cases, the National Weather Service as a whole.

Considerable knowledge of related meteorological fields such as physics, mathematics, and computer science.

Ability to work effectively with people, especially in training situations.

Ability to communicate effectively in the capacity of spokesperson for the region regarding techniques matters.

Ability to exchange ideas, obtain information governing the operation being studied, and to recommend new operations and procedures with specialists and managers.

Ability to write in a clear and concise manner, to express thoughts clearly, and to develop ideas in logical sequence.

Ability to conduct operational analyses, using considerable meteorological, mathematical, and computer science knowledge. This can involve:

Defining the problem;

Constructing mathematical/physical/conceptual models representing meteorological processes involving the

Manipulation of these models by mathematical, statistical, computer, and other techniques; and,

Validation and appraisal of models as applied to forecast problems.

Factor 2 – Supervisory Controls

The Regional Techniques Improvement and Professional Development Meteorologist receives administrative supervision from the Chief, SSD. Guidance from higher levels is restricted to matters of policy, program objectives, and budget limitations. The incumbent works closely with OSD and OM in order to assure adherence to established standards concerning the scope of data processing, analysis, prognosis, and interpretations performed at field stations, and to keep abreast of and have an input into development of new products and other operational forecaster aids. The incumbent works closely with regional field managers on the development of computer application programs and other operational meteorological procedures. When in the field, incumbent resolves problems with independence and provides follow-up support services on those of a larger scope.

Factor 3 – Guidelines

Because much of the work is in new and unexplored areas, the guidelines are often limited to providing general direction of the work needed to be done. The incumbent exercises considerable ingenuity and independent judgment in deviating from traditional methods of doing things, and adapts and develops new methods as required.

Factor 4 – Complexity

Assignments involve work and thought in a broad range of activities and highly specialized meteorological and computer science functions. The incumbent takes action and makes decisions in solving highly complex meteorological problems involved in implementing new forecasting techniques and procedures such as is involved with using numerical weather prediction output, sophisticated computer equipment and observing technologies. Thus, the work involves many areas of uncertainty in the current rapidly developing science of meteorology with the need for creative development of highly complex new techniques and procedures.

Factor 5 – Scope and Effect

The primary purposes of the work are to provide expert advice and guidance to the region and the field concerning unusual and/or critical problems, and to provide expertise and direction in the planning and development of new meteorological analysis and forecasting programs. These efforts impact national programs through interactions with program leaders at NWSH, NMC, TDL, etc., and also impact regional and local levels through collaborations with field office managers and forecasters.

Factor 6 – Personal Contacts

Daily contacts are made with key Regional Headquarters managers, field managers, and field operations personnel. Frequent contacts are made with program leaders at Weather Service Headquarters, NMC, TDL, and COMET. Considerable contact is also made with top meteorologists and computer scientists in the university community, government research institutions, and relevant commercial businesses.

Factor 7 – Purpose of Contacts

The purpose of contacts is to provide scientific, technical, and management expertise and guidance on matters within program areas. Assignments also involve active participation in high level conferences and meetings which have significant consequences in obtaining acceptance of new approaches to meteorological support or are otherwise considered of major importance.

Factor 8 – Physical Demands

The work is sedentary.

Factor 9 – Work Environment

Work is performed in an office environment.

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