



National Predictive Services Group

Leadership in Decision Support Services

February 14, 2006

To: NWCG Fire Environment Working Team
From: National Predictive Services Group
Subject: **NFDRS Weather Station Data and Predictive Services**

Purpose

Poor and incomplete NFDRS weather and fire danger data are limiting factors to the capability and effectiveness of Predictive Services and other programs. The National Predictive Services Group (NPSG) requests:

- 1) Acknowledgement that NFDRS weather station data quality continues to be a problem
- 2) Direction or guidance be given to interagency partners to adhere to existing interagency policies and standards regarding NFDRS weather stations
- 3) Clarification as to what role, if any, Predictive Services is expected to play to support the future integrity of NFDRS weather station data.

Background – Poor NFDRS Weather Station Data

The Remote Automated Weather Station (RAWS) program and the National Fire Danger Rating System are directly linked, as described in PMS 426-3 NWCG National Fire Danger Rating System Weather Station Standards. NFDRS stations must meet maintenance, instrumentation and quality assurance standards; have data delivered to WIMS on an hourly basis via satellite transmission; and have NFDRS calculations processed regularly in WIMS with delivery of historical data to the NIFMID database. The undertaking of a costly, intensive cleanup of historical weather data to facilitate the Fire Program Analysis (FPA) System is evidence of the poor quality of past NFDRS station data. While the historical data quality problems were addressed, the practices that caused them were not and many of the same problems persist with current NFDRS station data.

Discussion – Impact and Cause of Poor Weather Station Data

The Predictive Services program depends on quality NFDRS station data to develop predictive models and implement them operationally. NPSG believes it is reasonable to manage the Predictive Services program under the assumption that the policies and standards that govern NFDRS station data are being adhered to. However, forays into the NFDRS weather station program by GACC meteorologists have revealed that noncompliance with the aforementioned policies and standards is widespread, in many cases due to ignorance of their existence. Problems range from RAWS station siting, maintenance and documentation to maintenance of WIMS station catalogs to entry of daily NFDRS observations. The result is a cascade effect that runs from stations providing non-representative data from unknown locations to NFDRS observed and forecast information being missing or incorrect. The specific causes of the problems related to NFDRS weather station data are as many and varied as their adverse effects, and are well beyond the scope of this brief. One specific impact of note is the adverse effect of poor data on the ability of the National Weather Service (NWS) to provide accurate fire weather forecasts and gauge forecast accuracy via a systematic verification program. NPSG believes that NFDRS station data will continue to be a hindrance to the effectiveness of Predictive Services and other programs until these problems are resolved, and submits that adherence to the existing policies and standards related to

NFDRS weather stations is the logical first step. While adequate training is also a problem, NPSG contends that the most significant problems lie at the roots of the program.

Consideration – Predictive Services Involvement in NFDRS Weather Station Program

NPSG believes that the GACC meteorologists could assist the NFDRS weather station program by continuously monitoring the network, evaluating network data, and reporting concerns to the appropriate positions within the NFDRS weather station program infrastructure. This brief could be considered an example of such reporting. Where this concept breaks down is that it is unclear who to report to or what the expectations are for concerns to be addressed and resolved. The NFDRS Weather Station Standards document (attached) describes the various program positions and their responsibilities, but experience has shown that the Station Owner, First Responder and Regional Fire Weather Coordinator position responsibilities are often not being fulfilled and the positions are frequently not designated. NPSG believes it would be neither time nor cost effective to increase the commitment of the GACC meteorologists to the NFDRS Weather Station program until present program positions are distinguished and functioning per the NWCG NFDRS Weather Station Standards.

Recommendations

NPSG believes that the means for a vital NFDRS weather station program are well within the grasp of the fire management community. Both the NWCG NFDRS Weather Station Standards and Interagency Standards for Fire and Aviation Operations documents offer sound direction with regard to the NFDRS weather station program, and appear to be lacking only in implementation. We believe that program management on an interagency basis is not facilitated by the current policies and infrastructure, and that interagency program management is a key to future success. NPSG requests that action be taken to revitalize the NFDRS weather station program, and offers the following recommendations:

- **Adhere to Existing Standards and Policies** - The majority of NFDRS Weather Station issues would be solved by adhering to the NWCG NFDRS Weather Station Standards and Chapter 9 of Interagency Standards for Fire and Aviation Operations (Redbook). Agency commitment to these policies and guidelines should be renewed and a report produced by the end of FY2006 detailing efforts to do so.
- **Interagency Operating Plans** – The more generalized guidelines in the NFDRS Weather Station Standards and Redbook must be translated into specific interagency operating plans at the national and Geographic Area levels. Among other things, these plans should specify who performs the various program roles and the training and skills required to perform them.
- **Interagency Geographic Area NFDRS Weather Station Coordinators** – This role should be created based on the responsibilities described for the Regional Fire Weather Coordinator in the NFDRS standards document, but on an interagency basis at the Geographic Area level. This position would require the dedication of a minimum ½ of a FTE at each GACC. *GACC meteorologists could not realistically be considered to fill this role due to the workload impact and the adverse impact it would have on the Predictive Services program.*
- **Interagency Management Capability in ASCADS and WIMS** – New super-user/administration levels need to be created within ASCADS and WIMS to facilitate interagency program management and the concept of interagency Geographic Area NFDRS Weather Station Coordinators.

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-Attachment

POSITIONS, RESPONSIBILITIES AND TRAINING STANDARDS

The following positions are used in fire weather station operations and are required to implement the fire weather program. They require a level of specific skill and knowledge to perform the fire weather responsibilities. Personnel should be assigned only to positions in which they have demonstrated the ability to perform successfully. In each position, interagency coordination and communication between different levels (local/regional/national) is necessary.

Station Owner/Program Manager - Responsible for appropriate site selection and placement of the fire weather station, maintenance, assurance that accurate observations are taken and transmitted to WIMS, and that appropriate NFDRS calculations are made. This includes reading and assuring appropriate response to “watchdog” reports, assuring a field support technician/first responder is available to support their station(s), *and visual checks of data on a frequent basis (daily) to assure that station readings are reflective of actual conditions.*

Field Support Technician/First Responder - Responsible for performing annual site maintenance and responding to system failures in a timely manner, and documenting in ASCADS. Provides status report to Station Owner/Program Manager. Required to attend basic field rehabilitation training. Training will include performing field rehabilitation standards for the specific stations within their area of responsibility.

Depot Technician - Responsible for bench rehabilitation and calibration of all station components under their contract. Provide technical support to field technicians and first responders as needed.

Agency/Regional Fire Weather Coordinator - Responsible for agency/regional level oversight and quality control. This includes spot checks for data accuracy and WIMS station catalog status. Assures that ASCADS metadata and maintenance documentation is current. Assures that training is available at the regional/local level as needed. Assists with station operation and lifecycle management planning.

Depot Manager - Responsible for administration of depot contract(s). Provides a maintenance summary to Agency coordinator annually.