NATIONAL WEATHER SERVICE INSTRUCTION 10-405

July 22, 2010

Operations and Services

Products and Services to Support Fire and Other Incidents, NWSPD 10-4

FIRE WEATHER SERVICES TRAINING AND PROFESSIONAL DEVELOPMENT

NOTICE: This publication is available at: http://www.nws.noaa.gov/directives/

OPR: W/OS22 (L. Van Bussum) **Certified by:** W/OS22 (E. Jacks)
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SUMMARY OF REVISIONS: This directive supersedes NWSI 10-405, "Fire Weather Services Training and Professional Development," dated July 9, 2007. The following revisions were made to this instruction: (1) Changed OPR from H. Hockenberry to L. Van Bussum. (2) Added section 1 to cover training deemed necessary by the Department of Homeland Security. (3) Removed mention of ICS courses in sections 4.1 and 4.3 as they are now covered by section 1. (4) Changed section 4.1-d to include training through a Type II Wildland Fire Incident Management Team. (5) Added section 5 and 6 giving guidance on Type 2 and Type 3 IMET training. (6) Dropped Appendix A (added to 10-403).

signed July 8, 2010

David B. Caldwell Date
Director, Office of Climate,
Water, and Weather Services

Fire Weather Services Training and Professional Development

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1. All-Hazards Response. Any National Weather Service (NWS) staff producing any product or service in support of any incident response, including fire, adheres to the training requirements of the Department of Homeland Security as set forth in the Federal Emergency Management Agency (FEMA) National Incident Management System (NIMS) required training at http://www.fema.gov/emergency/nims/NIMSTrainingCourses.shtm.

According to the document that is linked above, staff fulfills the following requirements in order to provide any product or service in support of incident response:

a. Any NWS staff providing spot forecasts or phone briefings to first responders: Complete the required training for entry level first responders and disaster workers, namely IS-700 (NIMS) and IS-100 (Introduction to ICS).

b. Any NWS staff acting as a focal point or program manager involving incident response. This will include Meteorologist-in-Charge (MICs) and Warning Coordination Meteorologists (WCMs): Complete the required training for first line supervisors, namely IS-700, IS-100 and IS-200 (Basic ICS)

c. Any NWS staff that will work or brief (in person) at an Emergency Operations Center (EOC) or Incident Command Post (ICP). This will include all Type 1, Type 2 and Type 3 Incident Meteorologists (IMETs): Complete the required training for mid-level management, namely IS-700, IS-800 (National Response Framework), IS-100, IS-200 and IS-300 (Intermediate Incident Command System)

1.1 Department of Homeland Security/FEMA Course Availability. IS-100, 200, 700 and 800 are available online from the FEMA website. IS-300 is available through each state's Department of Emergency Services. A list of contact information for each state's Emergency Management services is available from the FEMA website at: http://www.fema.gov/about/contact/statedr.shtm.

1.2 Type 2 and Type 3 IMETs. All training requirements and associated policy for Type 2 and Type 3 IMETs, other than those stated in this document, will be the responsibility of the regions or national centers that choose to participate in decision support services. All references to "IMET" in this document pertain to Type 1 IMETs unless otherwise specified.

2. Fire Weather Forecasters. Any NWS meteorologist producing any of the core suite of fire weather products is trained as a Fire Weather Forecaster. Forecasters fulfill the following requirements to work as a Fire Weather Forecaster:

a. Fire Weather and Wildland Fire Behavior Baseline Knowledge. Complete the National Wildfire Coordinating Group's S-290, Intermediate Wildland Fire Behavior (either by computer based training or residence course).

b. Local Training. Complete local training as specified by the local and/or regional

Fire Weather Program Leader. This training should focus on: (1) the effects of local terrain on fire weather parameters and fire behavior, with an emphasis on wind; (2) local fire weather forecast techniques; (3) local fire season climatology; and (4) Remote Automated Weather Stations (RAWS) observations (where available).

c. Products and Services. Be familiar with all NWS fire weather products and services and become proficient in the preparation and dissemination procedures for those products, per NWS Policy Directive 10-4 and associated instructions.

MICs and the appropriate Regional Headquarters are responsible for ensuring fire weather forecasters are properly trained. At a minimum, forecasters will review the Fire Weather Annual Operating Plan and remain proficient in issuing fire weather products each year. Additional requirements to achieve and maintain proficiency are allowed with Regional Headquarters' approval.

3. Fire Weather Program Leaders. MICs of NWS Weather Forecast Offices (WFOs) assigned the responsibility to provide fire weather services will designate a member of the staff as the Fire Weather Program Leader (FWPL). The MIC will ensure the FWPL is provided adequate time for personal training and professional development, staff training and professional development, and user-agency liaison and assistance activities. The FWPL is traditionally a WFO meteorologist; however the FWPL may be another WFO staff member with Regional Headquarters approval and assurance from the MIC that the non-meteorologist FWPL meets all training requirements.

The MIC, Science and Operations Officer (SOO) and FWPL will be responsible for training and development of fire weather forecasters and assisting the IMETs (if one is assigned to the WFO) as necessary. (The FWPL does not need to be an IMET or vice-versa.) In addition to fire weather related training, the FWPL's duties may include developing and implementing new forecast products and techniques, and conducting climate and fire weather related studies. The extent of the duties of the FWPL will be determined by the depth of the local fire weather program requirements.

The FWPL will meet the following requirements in addition to those of the Fire Weather Forecaster (Section 2):

a. Advanced Fire Weather and Wildland Fire Behavior. Completion of the Advanced Fire Weather Forecasters Course, available on the Department of Commerce's Learning Management Site. Also, completion of S-290, Intermediate Wildland Fire Behavior is a prerequisite. To learn more about wildland fire behavior, completion of the S-390 (Introduction to Wildland Fire Behavior Calculations) course is recommended (but not required).

b. National Fire Danger Rating System (NFDRS). At WFOs with an NFDRS program, the FWPL will acquire advanced knowledge of the NFDRS. This knowledge should include NFDRS history and purpose, details of its components

or indices, how it is used by land managers, and its importance to local land management agencies. Training can be accomplished through self-study of S-491 course materials including the booklet "Gaining an Understanding of the National Fire Danger Rating System", the S-491 CD-ROM, and the NFDRS Reference Material CD-ROM.(WFOs in areas where the Canadian Forest Fire Danger Rating System is used may substitute training for this system in place of NFDRS.)

Regional Fire Weather Program Managers should also complete the requirements listed above for the WFO FWPLs.

4. Type 1 IMET Certification and Training. The Office of Climate Water and Weather Services, through the National Fire Weather Operations Coordinator (NFWOC) and the Regional Headquarters, will ensure IMETs are properly trained and certified to work in an Incident Command. The NFWOC and Regional Fire Weather Program Managers ensure IMET meteorological support equipment familiarization is scheduled annually and designated IMETs in their regions remain certified.

4.1 Initial Type 1 IMET Certification. To be certified initially as an IMET, the meteorologist will have at least attained the level of General Forecaster and be stationed in an office that has a national All Hazards Meteorological Response System (AMRS) or stationed in a NWS office that is collocated in the same city as an office that has an AMRS. However, an Intern may complete any available training such as Cooperative Program for Operational Meteorology, Education and Training (COMET) modules and National Wildfire Coordinating Group (NWCG) fire courses, and may take a familiarity trip to a fire with Region Headquarters and Incident Commander approval. The NFWOC has the discretion to waive the co-location of AMRS equipment requirement. The IMET trainee will acquire a high level of knowledge of fire weather meteorology and fire behavior. This includes: advanced knowledge of complex terrain and its impacts on fire weather parameters; mesoscale meteorology; intermediate to advanced knowledge of climatological patterns associated with fire activity; and intermediate to advanced knowledge of fire behavior, including knowledge of fuels and fire climatology. The prospective IMET will meet the following requirements in addition to all the requirements for FWPLs (Section 3):

a. Wildland Fire Behavior Calculations. The IMET will complete the S-390 Introduction to Wildland Fire Behavior Calculations Course to obtain knowledge of wildland fire behavior calculations. This course introduces fire behavior calculations by manual methods, provides basic skills in determining fire behavior through analysis of input data and interpretation of output data. In addition, the trainee will have a knowledge and familiarization of S-490, Advanced Wildland Fire Behavior Calculations, by reviewing the S-490 Student Reference Text and slides.

b. Incident Training Assignment. The IMET will complete at least two incident (on-site) training assignments with certified IMETs. The first assignment should focus on incident familiarization and learning the appropriate IMET tasks. The second assignment should give the trainee a chance to demonstrate proficiency in

these critical tasks under supervision of a certified IMET. Trainees will complete at least 20 days of on-site training combined between the two assignments (not including travel days). One of the assignments will have been for at least five consecutive days. One assignment will be with a Type I or Type II Wildland Fire Incident Management Team. Demonstrating proficiency on IMET Task Book tasks may occur during both assignments, depending upon the trainee's progress and the judgment of the IMET trainer. Incident training will include: experience with dispatch and demobilization procedures and the Incident Command System; set up, use, disassembly, and packing of the communication systems and Atmospheric Theodolite Meteorological Unit (ATMU); ordering and use of FireRAWS; preparation of on-site forecasts; briefing Incident teams; and working and coordinating with local forecast offices. Upon successful completion of the training assignments, the certified IMET providing the training will sign-off on the IMET Task Book.

A trainee is certified as a Fire Weather Forecaster (see Section 2) before assignment for incident training. The trainee should also try to complete as many of the other IMET certification requirements (Sections 2 and 3) as possible before incident training, though it is recognized completion of some requirements are controlled by course schedules. Regional Fire Weather Program Managers will determine when trainees are ready for incident training and will coordinate this information with the NFWOC.

The IMET's MIC is the final certifying official. He/she should coordinate with the Regional Fire Weather Program Manager and the NFWOC, and ensure all required courses, study, and tasks specified in 3.1 are complete before signing the Task Book. The MIC's signature on the Task Book denotes the official certification for the IMET.

4.2 Type 1 IMET Re-certification. The status of IMETs certification will be reviewed annually by the respective Regional Headquarters and MICs prior to delivering the pre-season list of certified IMETs to the NFWOC (required by January 31st of each year). Delivery of IMET names to the NFWOC implies each IMET has met the ongoing re-certification criteria.

4.2.1 Type 1 IMET Re-certification Criteria. To remain certified as an IMET, the IMET will satisfy a, b and c below:

a. Be stationed at an office that has an AMRS or collocated in the same city as an office that has an AMRS. The NFWOC has the discretion to waive this requirement.

b. Have responded to an incident dispatch as a certified IMET using the AMRS within the previous 18 months.

c. Attend the annual IMET workshop. If an IMET is unable to attend the IMET workshop due to extraordinary circumstances, he/she may obtain a waiver from

the NFWOC at the NFWOC's discretion. However, the IMET will then attend another IMET workshop within 53 weeks of the missed workshop or their certification will lapse.

4.2.2 Lapse of Certification. If a previously certified IMET does not meet the criteria in 4.2.1, re-certification can occur by completing a dispatch training session at an incident with a certified IMET. This assumes that the previously certified IMET has been to the IMET workshop within the last 12 months. If this is not the case, then the re-certification cannot take place until both the IMET workshop has been attended and a dispatch training session at an incident with a certified IMET has occurred. For a dispatch training session, the certified IMET will determine the necessary length of dispatch for re-certification. The certified IMET notifies the Regional Headquarters and the MIC if and when he/she deems re-certification should be approved. The IMET seeking re-certification does not have to formally complete a Task Book, but the required tasks should be reviewed for re-certification purposes. The respective Regional Program Manager or MIC should notify the NFWOC of any changes in IMET certification. If an IMET is transferred to an office that does not have an AMRS, that Type 1 IMET can become a Type 2 IMET if they so choose.

4.3 Optional IMET Training. Optional but highly recommended training for IMETs includes:

a. Advanced Wildland Fire Behavior Calculations. The IMET should attend the land management agencies' residence S-490 Advanced Wildland Fire Behavior Course to further the knowledge of wildland fire behavior calculations obtained from reviewing the Student Reference Text. The residence course provides advanced skills in fire behavior analysis and prediction through the use of more complicated scenarios involving weather, terrain, and fuels.

b. Advanced Fire Behavior Interpretation. The IMET should attend the S-590 Advanced Fire Behavior Interpretation to obtain knowledge of the role of the Fire Behavior Analyst on an incident and to better understand the interaction of the IMET with the Fire Behavior Analyst.

5. Course Information. Contact the appropriate Regional Fire Weather Program Manager for information on obtaining course materials, dates of residence classes, etc. Information can be found online at: http://www.nationalfiretraining.net/.

6. Type 2 IMET Training. Type 2 IMETs will complete all training requirements required of a Type 1 IMET except for the Type 1 IMET workshop. This will allow Type 2 IMETs to serve wildland fire or non-fire incidents at Emergency Operations Centers (EOCs), Area Commands or Joint Field Offices (JFOs). However, the Type 2 IMET will not be able to serve on wildland fires at an Incident Command Post.

7. Type 3 IMET Training. Type 3 IMETs will complete all the DHS training requirements of a Type 1 or Type 2 IMET, but will not have completed the fire training of a Type 1 or Type 2 IMET. This will allow the Type 3 IMET to serve on all non-fire incidents at EOCs, Area

Commands or JFOs. The key distinction in training for a Type 3 IMET is that there is no requirement for completed fire weather training. The Type 3 IMET is therefore trained and available for non-fire incident response.