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APPLICABLE TO NWSI 10-513 & NWSI 10-515

February 9, 2009

Operations and Services

Public Weather Services, NWSPD 10-5

WFO Winter Weather Products Specification, NWSI 10-513 and

WFO Non-Precipitation Weather Products Specification, NWSI 10-515

ALASKA WFO WINTER WEATHER AND

NON-PRECIPIATION WEATHER PRODUCTS SPECIFICATION

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SUMMARY OF REVISIONS: This supplement supersedes Alaska Region Supplements (ARS) 06-2002, Alaska WFO Winter Weather Products Specification, dated November 9, 2005, applicable to NWSI 10-513 and ARS 07-2002, Alaska WFO Non-Precipitation Weather Products Specification, dated December 20, 2004, applicable to National Weather Service Instruction (NWSI) 10-515.

The following changes were made in this issuance:

1. Combined instruction content from ARS 06-2002 and ARS 07-2002.
 2. Simplified and revised format of document such that the section numbers no longer correspond to the relevant section numbers in NWSI 10-513 and 10-515.
 3. Enhanced coordination policy between WFOs and WSOs.
 4. Added guidance for high impact “below criteria” events and forecaster judgment.
 5. Revised Ashfall policy: additional policy for Volcanic Ashfall events to include a table of accumulation terms and call-to-action statements in Appendix D; revised Ashfall Advisory criteria; included Ashfall Warning criteria and guidance for use of Ashfall Advisory VTEC until Ashfall Warning VTEC codes are implemented.
 6. Removed waiver exempting advisory statements.
 7. Revised wording for Dense Fog, Dense Smoke, and Blowing Dust Advisories/Warnings to more appropriately convey area coverage criteria.
 8. Revised guidance/criteria for national Winter Weather Simplification policy change.
 9. Updated Hazardous Weather Outlook MND requirement.
 10. Updated GHG X-VTEC requirements for Watch, Warning and Advisory products.
 11. Removed redundant advisory and warning tables.
 12. Updated Winter Weather Watch categories.
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/SIGNED/

January 26, 2009

Frank P. Kelly
Regional Director

Date

WFO Winter Weather and Non-Precipitation Weather Products Specification

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1. Introduction. The items and appendices contained in this document compile the Alaska Region Winter Weather and Non-Precipitation Weather Warning, Advisory, Watch and Outlook policies which supplement those stated in NWSI 10-513 and NWSI 10-515.

2. Warnings and Advisories. Criteria for Winter Weather (WSW) and Non-Precipitation Weather (NPW) hazards for all Alaska zones are given in Appendices A and B “respectively” with special guidelines for volcanic ash fall events in Appendix D. Weather Forecast Offices (WFO) will issue WSW and NPW warnings and advisories based upon these regionally and locally defined criteria. Such criteria are developed through extensive outreach with emergency managers and other key stakeholders for events that are expected to impact transportation and commerce or otherwise impact public safety or property. These products elaborate on timing and intensity of hazardous weather events and provide additional forecast and call-to-action information; they should be issued according to specifications given in NWSI 10-513 or NWSI 515 and the following instructions specific to the Alaska Region:

2.1. Software Generation. WFOs will generate all WSW and NPW Warnings and Advisories by using the Graphical Forecast Editor (GFE) Graphical Hazards Generator (GHG) software and will contain experimental Valid Time Event Codes (VTEC).

2.2 High Impact “Below Criteria” Events and Forecaster Judgment. Written instructions cannot address every operational situation. All WFO personnel must exercise initiative and

professional judgment to minimize risk to public safety and property in situations not explicitly covered by written instructions. Personnel must balance safety and needs of customers against frequency of warnings and possible constraint of travel and commerce. Protection of life and property shall take precedence in these decision making processes. As such, criteria for warnings and advisories are considered guidance only, not strict thresholds. Forecasters may issue warnings or advisories based upon lower criteria if the event in question poses a significant threat to life due to timing or other circumstances. For example, an advisory might be appropriate for a minor snowfall event that takes place near rush hour, even if the amount may not meet strict criteria. Other examples include early or late season events or climatologically unusual or infrequent events such as the first snowfall of the season or strong wind in a climatologically sheltered area.

2.3 Winter Storm vs Ice Storm Warnings. Occasionally, significant rainfall (ambient air temperature above 32° F) occurs during the cold season in Alaska when the ground surface temperature remains well below freezing. Under these conditions, rain freezes on contact with ground surfaces (NOT tree limbs, power lines, etc as with an Ice Storm) and severely impacts transportation and commerce. To clearly convey this hazard, the terminology WINTER STORM WARNING should be used in lieu of ICE STORM WARNING. Instructions and criteria for this instance of issuing a WINTER STORM WARNING will be documented in the WFO Station Duty Manual (SDM).

2.4 Wind Advisory Exemptions. In Alaska Region, wind advisories are optional as defined by local criteria. In lieu of advisories, headlines will be used in the zone forecast product (ZFP) to highlight significant wind events that do not meet warning criteria. These headlines will adhere to the format stated in ARS 09-2004. Wind advisories will be issued for the zones noted in Appendix B.

2.5 Dense Fog Advisory Exemptions. According to customer outreach, dense fog does not meet the advisory criteria of “hazardous” as defined in NWSI 10-515 for all zones in Alaska Region. This is due to the frequency of dense fog in many maritime locations and the lack of highway thoroughfares. In lieu of advisories, headlines will be used in the ZFP to highlight the occurrence of dense fog. Such headlines will adhere to the format stated in ARS 09-2004. Dense fog advisories will be issued for the zones as noted in Appendix B.

2.6 Volcanic Ashfall Events. Appendix D outlines the appropriate product (Warning, Advisory, or Special Weather Statement,) accumulation terms, and call to action phrases based on eruptive activity and anticipated ashfall amounts.

WFO forecasters will coordinate closely with the Alaska Aviation Weather Unit (AAWU) lead forecaster on composition of the NPW. The AAWU lead forecaster also serves as lead forecaster for the Anchorage Volcanic Ash Advisory Center (VAAC). The Anchorage VAAC is responsible for the preparation and dissemination of aviation products (SIGMETs, Volcanic Ash Advisories) associated with the event.

Immediately upon learning of a possible volcanic event, the VAAC will collect additional

information from various sources and will have the most current and accurate information about the volcanic event. WFO forecasters must ensure there is consistency among statements regarding hazardous weather (i.e. public information statements, outlooks, etc.) and the VAAC's products. In all cases, the VAAC lead forecaster will have the final determination concerning key points in the event.

In the event that an Ashfall Warning should be issued, forecasters will issue the VTEC code for ashfall advisory (AF.Y) and manually edit/change the headline text from ADVISORY to WARNING prior to transmission of NPW and ZFP products. This will be done until future VTEC codes for ashfall warnings are implemented. Remember, while rare, Ashfall Warnings will be of extremely high impact.

2.7 WFO and WSO Coordination. When a warning is issued, the WFO will make every effort to contact (and receive acknowledgement from) the appropriate Weather Service Offices (WSO) when their met watch zone(s) will be contained inside the warning area. Local SDMs will include back-up schedules for part-time WSOs.

The WSO staff will contact the area WFO shift team leader when, in the opinion of the WSO staff, warning or advisory conditions are likely and there is no warning or advisory in effect or being coordinated by the area WFO. Reports of event approaching or achieving warning or advisory thresholds in or near the WSO service area are useful as evidence.

3. Watches. WFOs will issue a Winter Weather Watch (product category WSW) or Non-Precipitation Watch (product category NPW) when conditions are favorable for a hazardous weather event to develop over part or all of the forecast area, but the occurrence is uncertain. Watches are issued for the second, third, or occasionally fourth forecast periods, when there is a 60 percent or greater chance of a hazardous weather event meeting or exceeding local warning criteria. WSW and NPW Watch products are defined in Appendix C.

WFOs will generate all WSW and NPW Warnings and Advisories by using the GFE GHG software and will contain experimental VTEC codes.

4. Hazardous Weather Outlook (Product Category SPS). Since the Hazardous Weather Outlook (HWO) has not been implemented in the Alaska Region, WFOs in Alaska will use the product category SPS to issue Hazardous Weather Outlooks for winter and non-precipitation weather hazards. Hazardous Weather Outlooks are issued when there is a 60 percent or greater chance of a hazardous weather event exceeding the local warning criteria (or having great impact due to timing or other circumstances) in the three to five day forecast period, or beyond the point normally covered by a watch.

The Hazardous Weather Outlook will be created using the GFE Text Editor and will include the Mass News Disseminator (MND) phrase "HAZARDOUS WEATHER OUTLOOK."

APPENDIX A

Winter Weather Advisory and Warning Criteria; Zone Specific

Zones (WFO)	Advisory Thresholds	Warning Thresholds
		Blizzard Warning
All zones	(See Winter Weather Advisory, Table A-2)	When forecast to occur for at least 3 hours: Blowing snow (with or without falling snow) reducing visibility to $\leq 1/4$ mile when accompanied by sustained wind or frequent gusts ≥ 35 mph.
Zones (WFO)	Freezing Rain Advisory	Ice Storm Warning (Refer to Section 2.4)
017-029 (Juneau) 101-195 (Anchorage)	Ice accumulation (freezing rain and/or freezing drizzle) Trace to 0.25 inch	Ice accumulation of 0.25 inch or greater
201-214 (Fairbanks)	Ice accumulation (freezing rain) 0.01 inch to less than 0.10 inch	Ice accumulation of 0.10 inch or greater
215-226 (Fairbanks)	Ice accumulation (freezing rain and/or freezing drizzle) Trace to 0.10 inch	Ice accumulation of 0.10 inch or greater
Zones (WFO)	Wind Chill Advisory	Wind Chill Warning
017-029 (Juneau)	Wind chill -30° F with 15 mph sustained winds for 3 hours or more	Wind chill -55° F with 15 mph sustained winds for 3 hours or more
101-195 (Anchorage)	Wind chill -40° F with 15 mph sustained winds for 3 hours or more	Wind chill -60° F with 15 mph sustained winds for 3 hours or more
201-206 (Fairbanks)	Wind chill -50° F with 15 mph sustained winds for 3 hours or more	Wind chill -60° F with 15 mph sustained winds for 3 hours or more
207-226 (Fairbanks)	Wind chill -40° F with 15 mph sustained winds for 3 hours or more	Wind chill -60° F with 15 mph sustained winds for 3 hours or more

Table A-1 – Winter Weather Advisory and Warning thresholds for Alaska zones.

Zones (WFO)	Winter Weather Advisory (Snow Threshold)	Winter Storm Warning (Snow Threshold)
017-026 (Juneau)	4-5 inches in 12 hours	6 inches in 12 hours or 12 inches in 24 hours
027-028 (Juneau)	3-5 inches in 12 hours	6 inches in 12 hours or 12 inches in 24 hours
029 (Juneau)	8-11 inches in 12 hours	12 inches in 24 hours
101-121 and 141-195 (Anchorage)	6-11 inches in 12 hours or 12-23 inches in 24 hours	12 inches in 12 hours or 24 inches in 24 hours
125 and 135 (Anchorage)	None	24 inches in 12 hours
131 (Anchorage)	18-23 inches in 12 hours	24 inches in 12 hours
201-214 (Fairbanks)	None	6 inches in 24 hours
215-224 (Fairbanks)	4-7 inches in 24 hours or less	8 inches in 24 hours or less
225 and 226 (Fairbanks)	6-11 inches in 24 hours or less	12 inches in 24 hours or less
Zones (WFO)	Winter Weather Advisory (Blowing Snow Threshold)	
All Zones	<p>Below blizzard warning criteria. Specifically, when one of the following combinations are forecast to occur for at least 3 hours:</p> <ol style="list-style-type: none"> 1. Sustained wind or frequent gusts 25 mph or greater and visibility less than or equal 1/2 mile (but greater than 1/4 mile) ...OR... 2. Visibility is 1/4 mile or less, and winds are at least 25 mph but less than 35 mph 	(See Blizzard Warning, Table A-1)

Table A-2 – Winter Weather Advisory and Warning thresholds for Alaska zones.

Zones (WFO)	Winter Weather Advisory (Multiple Elements)	Winter Storm Warning (Multiple Elements, Refer to Section 2.3)
All Zones	Mixed precipitation or multiple winter weather events even if only one precipitation type meets or exceeds advisory criteria , but remains below warning criteria (this may include wind and/or wind chill)	Mixed precipitation or multiple winter events , even if only one precipitation type meets or exceeds warning criteria (this may include wind and wind chill) <u>Exception:</u> <ul style="list-style-type: none"> Multiple hazard events meeting blizzard-warning criteria will be issued as Blizzard Warnings, <u>not</u> as Winter Storm Warnings

Table A-3 – Winter Weather Advisory and Warning thresholds for Alaska zones

APPENDIX B

Non-Precipitation Weather Advisory and Warning Criteria; Zone Specific

Zones (WFO)	Advisory Threshold	Warning Threshold
	Wind Advisory (Note see instruction II.d.)	High Wind Warning
017-029 (Juneau)	Sustained wind or frequent gusts of 40 mph – 59 mph for one hour or more.	Sustained wind or frequent gusts of 60 mph or more for one hour or more.
101-195 (Anchorage)	Sustained wind or frequent gusts of 43 mph - 72 mph for one hour or more. Optionally use “strong wind” headline in lieu of an advisory.	Sustained wind or frequent gusts of 73 mph or more for one hour or more.
201-212 and 214 (Fairbanks)	Sustained wind or frequent gusts of 40 mph – 59 mph for one hour or more. Optionally use “strong wind” headline in lieu of an advisory.	Sustained wind or frequent gusts of 60 mph or more for one hour or more.
213 (Fairbanks)	Sustained wind or frequent gusts of 50 mph – 59 mph for one hour or more. Optionally use “strong wind” headline in lieu of an advisory.	Sustained wind or frequent gusts of 60 mph or more for one hour or more.
215-221 and 224 (Fairbanks)	Sustained wind or frequent gusts of 40 mph – 49 mph for one hour or more.	Sustained wind or frequent gusts of 50 mph or more for one hour or more.
222 (Fairbanks)	Sustained wind or frequent gusts of 35 mph – 49 mph for one hour or more.	Sustained wind or frequent gusts of 50 mph or more for one hour or more.
223, 225 and 226 (Fairbanks)	Sustained wind or frequent gusts of 50 mph – 69 mph for one hour or more.	Sustained wind or frequent gusts of 70 mph or more for one hour or more.

Table B-1 – Non-precipitation advisory and warning thresholds for Alaska zones.

Zones (WFO)	Advisory Threshold	Warning Threshold
Ashfall Advisory		Ashfall Warning
All Zones	Ashfall accumulation of 0.03” to < 1/4” from a volcanic eruption, or re-suspension of relic ash. See Appendix D.	Ashfall accumulation of 1/4” or more from a volcanic eruption, or re-suspension of relic ash. See Appendix D.
Blowing Dust Advisory		Dust Storm Warning
All Zones	Widespread or consequential area(s) of blowing dust reducing visibility to 1 mile or less , but greater than 1/4 mile for one hour or more.	Widespread or consequential area of blowing dust reducing visibility to 1/4 mile or less for three hours or more.
Dense Fog Advisory		
017-029 (Juneau) 101-121 (Anchorage) 125 west of the Whittier Tunnel (Anchorage) 131, 141-145 (Anchorage) 222-226 (Fairbanks)	Widespread or consequential area(s) of fog reducing visibility to 1/4 mile or less for one hour or more.	None
Dense Smoke Advisory		
017-029 (Juneau) 101-195 (Anchorage)	Widespread or consequential area(s) of smoke reducing visibility to 1/4 mile or less for one hour or more.	None
201-226 (Fairbanks)	Widespread or consequential area(s) of smoke reducing visibility to 1 mile or less for one hour or more.	None

Table B-2– Non-precipitation advisory and warning thresholds for Alaska zones.

Zones (WFO)	Advisory Threshold	Warning Threshold
Extreme Cold Warning		
101-195 (Anchorage) 201-226 (Fairbanks)	None	When forecast to occur for at least three consecutive days: Shelter temperature of -50°F or colder and air temperature remains below -40°F up to the 700-mb level.
Frost Advisory		Freeze Warning
017-029 (Juneau)	Minimum shelter temperature forecast to be 30-35°F for less than a 6 hour period, such that plant damaging frost will develop, between May 1 and the end of the growing season . The growing season ends when the first hard freeze (>28°F) occurs.	Minimum shelter temperature forecast to be 32°F or less for at least 6 hours and/or 28°F or less for any length of time between May 1 and the end of the growing season . The growing season ends when the first hard freeze (>28°F) occurs.
101 and 111 (Anchorage)	None	Minimum shelter temperature forecast to be 32°F or less. Valid between June 1 and September 15 .
201-221, 223-226 (Fairbanks)	None	None
222 (Fairbanks)	Minimum shelter temperature at PAFA forecast to be below 35°F. Valid from June 1 to September 1 .	None

Table B-3 – Non-precipitation advisory and warning thresholds for Alaska zones.

APPENDIX C

Watch Criteria: Winter Weather and Non-Precipitation Weather

(WSW) Watch Product	Issuance Criteria
Blizzard Watch	Conditions are favorable for a blizzard event to meet or exceed Blizzard Warning criteria in the next 12 to 48 hours.
Wind Chill Watch	Conditions are favorable for wind chill temperatures to meet or exceed local Wind Chill Warning criteria in the next 12 to 48 hours.
Winter Storm Watch	Conditions are favorable for a winter storm event (e.g. heavy snow, Ice Storm or a combination of events) to meet or exceed local Winter Storm Warning criteria in the next 12 to 48 hours.

Table C-1 – WSW Watch Products

(NPW) Watch Product	Issuance Criteria
Extreme Cold Watch	Conditions are favorable for an extreme cold event to meet or exceed local Extreme Cold Warning criteria in the next 12 to 48 hours.
Freeze Watch	Conditions are favorable for a freeze event to meet or exceed local Freeze Warning criteria in the next 12 to 48 hours during the frost/freeze season.
High Wind Watch	Conditions are favorable for a high wind event to meet or exceed local High Wind Warning criteria in the next 12 to 48 hours.

Table C-2 – NPW Watch Products

APPENDIX D – Volcanic Ashfall Event: Product and Statement Guidance

<u>NWS Product</u>	<u>Accumulation (inches)</u>	<u>Accumulation Term</u>	<u>Impact Thresholds</u>	<u>Call-to-Action Statements</u>
Special Weather Statement (SPS)	<0.03 in	Trace or dusting	Minor irritant, very low level impacts for most people	Avoid excessive exposure to ash, especially those with respiratory sensitivities. Protect critical electronics and other equipment from contamination.
Ashfall Advisory (NPW)	0.03 – 1/4 in	Light	Possible crop/animal equipment/infrastructure problems; widespread clean up is likely	Seal windows and doors. Protect electronics and cover air intakes and open water supplies. Minimize driving. Listen to NOAA Weather Radio or local media for further information.
Ashfall Warning (NPW)	1/4 – 1 in	Moderate	Ash removal efforts significant	Seal windows and doors. Protect electronics and cover air intakes. Avoid driving. Listen to NOAA Weather Radio or local media for further information.
	1 – 4 in	Heavy	Weaker roofs begin collapse at ~ 4 inches of wet ash accumulation	Remain indoors unless absolutely necessary. Use extreme caution clearing rooftops of ash. Avoid driving. Listen to NOAA Weather Radio or local media for further information.
	4 in – 1 ft	Very Heavy	Roof collapse, damage to trees, services interrupted	
	> 1 ft	Severe	Roads impassible, severe infrastructure damage, heavy plant, animal loss	Remain indoors unless absolutely necessary. Use extreme caution clearing rooftops of ash. Avoid driving. Listen to NOAA Weather Radio or local media for further information.

Table D-1 – WFO Ashfall product specifications for volcanic eruption events

APPENDIX E


**Waiver for the Issuance of Product Category SPS Instead of HWO
For Winter Weather and Non-Precipitation Outlooks**



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL WEATHER SERVICE
1325 East-West Highway
Silver Spring, Maryland 20910-3283

NOV 19 2002

MEMORANDUM FOR: Richard C. Przywarty
Director, Alaska Region

FROM: 
Gregory A. Mandt
Director, Office of Climate, Water,
and Weather Services

SUBJECT: Waiver from Hazardous Weather Outlook Product

Your request for a waiver from the Hazardous Weather Outlook (HWO) product per National Weather Service Instruction 10-517 is approved.

I anticipate the HWO policy to change as we receive feedback from our customers. One change that has already been proposed is for segmentation. If changes in the national HWO policy occur, this waiver will be rescinded. Of course, you will be able to request a new waiver to the new policy if you desire.

cc:

W/CS22 - James E. Lee
W/CS22 - Richard J. Okulski



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