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PNSWSH

TECHNICAL IMPLEMENTATION NOTICE 09-13
NATIONAL WEATHER SERVICE HEADQUARTERS WASHINGTON DC
228 PM EDT FRI MAR 27 2009

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OFFICE OF SCIENCE AND TECHNOLOGY

SUBJECT: RAPID UPDATE CYCLE CHANGES: EFFECTIVE MARCH 31 2009

EFFECTIVE TUESDAY MARCH 31 2009...BEGINNING WITH THE 1200 COORDINATED UNIVERSAL TIME /UTC/ RUN...NWS WILL MAKE SEVERAL CHANGES TO THE RAPID UPDATE CYCLE /RUC/ MODELING-ASSIMILATION SYSTEM. THESE CHANGES ARE MADE TO CORRECT PROBLEMS OBSERVED DURING WINTER AND EARLY SPRING.

THE MODEL CHANGES INCLUDE:

1. INTRODUCING THE NATIONAL ENVIRONMENTAL SATELLITE DATA AND INFORMATION SERVICE /NESDIS/ SNOW ANALYSIS TO ELIMINATE SNOW COVER AT MODEL POINTS WHERE THE ANALYSIS INDICATES NO SNOW IS PRESENT. THE NEW CODE WILL INTRODUCE THE NESDIS ANALYSIS ONCE PER DAY AT 1900 UTC AND WILL ELIMINATE SNOW COVER AT ANY POINT WHERE THE ANALYSIS SHOWS NO SNOW...THE MODEL SURFACE TEMPERATURE IS ABOVE 274 K AND NO PRECIPITATION HAS FALLEN DURING THE PREVIOUS ONE-HOUR FORECAST.
2. CHANGE OF THE CALL TO THE ANALYSIS OF CLOUD DATA TO OCCUR NEAR THE END OF THE ANALYSIS PROCESS TO PREVENT NON-CLOUD OBSERVATIONS FROM CAUSING SUBSATURATION AT GRIDPOINTS WHERE CLOUDS EXISTS. A FINAL CHECK TO MAKE CERTAIN THE ANALYSIS INCLUDES ALL CLOUDY POINTS ARE SATURATED.
3. MODIFICATIONS TO THE CODE TO ALLOW GOES SATELLITE CLOUD DATA TO SUPERCEDE ANY METAR CLEAR REPORT.

THE OUTPUT CHANGE CONSISTS OF CORRECTION OF THE RUN TOTAL CONVECTIVE AND NONCONVECTIVE PRECIPITATION FIELDS.

THE COMBINED IMPACT OF THESE CHANGES HAS LED TO THE FOLLOWING IMPROVEMENTS IN MODEL PERFORMANCE:

1. SIGNIFICANTLY IMPROVED 2-M TEMPERATURE FORECASTS IN REGIONS WHERE NO ACTUAL SNOW COVER EXISTS...PARTICULARLY IN WARM ADVECTION EVENTS
SIGNIFICANTLY IMPROVED REAL TIME MESOSCALE ANALYSIS /RTMA/ CONTIGUOUS U.S. /CONUS/ ANALYSES OF SURFACE TEMPERATURE AND DEW POINT IN THESE EVENTS SINCE THE RUC SERVES AS THE FIRST GUESS FOR THE RTMA.

2. IMPROVED CLOUD FORECASTS PARTICULARLY IN THE FIRST HOUR WHEN CURRENT VERIFICATION MEASURES SHOW A DRAMATIC DROP IN SKILL PREVENTION OF HOLES PUNCHED INTO THE ANALYZED CLOUD BY ERRONEOUS METAR REPORTS OF CLEAR SKIES CORRECTED RUN TOTAL PRECIPITATION FORECASTS

DATA AND RUC DELIVERY TIMING WILL NOT BE IMPACTED BY THIS IMPLEMENTATION NOR WILL DATA VOLUME. NWS DOES NOT EXPECT SIGNIFICANT DATA CONTENT CHANGES.

THE EFFECTIVE DATE OF THIS CHANGE IS SOONER THAN SPECIFIED BY NWS POLICY. THE REDUCTION OF THE NORMAL ADVANCE LEAD TIME WAS APPROVED BECAUSE NO SOFTWARE CHANGES WILL BE NECESSARY AND THE RUC FORECASTS ARE EXPECTED TO BE GREATLY IMPROVED WITH THE IMPLEMENTATION OF THE CHANGES.

FOR QUESTIONS CONCERNING THESE CHANGES...PLEASE CONTACT:

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[HTTPS://WWW.WEATHER.GOV/NOTIFICATION/ARCHIVE](https://www.weather.gov/notification/archive)

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