

NOUS41 KWBC 171828
PNSWSH

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

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FROM: JASON TUELL
CHIEF...SCIENCE PLANS BRANCH
OFFICE OF SCIENCE AND TECHNOLOGY

SUBJECT: RAPID UPDATE CYCLE CHANGES: 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 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 GRID
POINTS 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
2. SIGNIFICANTLY IMPROVED REAL TIME MESOSCALE ANALYSIS
/RTMA/ CONUS ANALYSES OF SURFACE TEMPERATURE AND DEW POINT
IN THESE EVENTS SINCE THE RUC SERVES AS THE FIRST GUESS FOR

THE RTMA

3. IMPROVED CLOUD FORECASTS PARTICULARLY IN THE FIRST HOUR WHEN CURRENT VERIFICATION MEASURES SHOW A DRAMATIC DROP IN SKILL
4. PREVENTION OF HOLES PUNCHED INTO THE ANALYZED CLOUD BY ERRONEOUS METAR REPORTS OF CLEAR SKIES
5. 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:

GEOFF MANIKIN
NCEP...MESOSCALE MODELING BRANCH
CAMP SPRINGS MARYLAND
301-763-8000 X7263
GEOFFREY.MANIKIN@NOAA.GOV

OR

STAN BENJAMIN
NOAA EARTH SYSTEM RESEARCH LABORATORY
BOULDER COLORADO
303-497-6387
STAN.BENJAMIN@NOAA.GOV

NATIONAL TECHNICAL IMPLEMENTATION NOTICES ARE ONLINE AT /USE LOWERCASE/:

[HTTP://WWW.WEATHER.GOV/OS/NOTIF.HTM](http://www.weather.gov/os/notif.htm)

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