

**Valid Time Event Code - Watch By County
Operational Test and Evaluation
Test Plan**

August 11, 2004

**Prepared by the
National Weather Service
Office of Science and Technology
Office of Climate Water and Weather Services
Office of Operational Systems
National Centers for Environmental Prediction**

Valid Time Event Code - Watch By County Operational Test and Evaluation Test Plan

August 11, 2004

Approved:

John L. Hayes, Director
Office of Science and Technology

Date

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

Date

Louis W. Uccellini, Director
National Centers for Environmental Prediction

Date

John McNulty, Director
Office of Operational Systems

Date

Table of Contents

Part I Overview

| | | |
|--------|--|----|
| 1 | Introduction..... | 1 |
| 1.1 | Background..... | 1 |
| 1.1.1 | VTEC..... | 1 |
| 1.1.2 | WBC..... | 1 |
| 1.2 | Purpose..... | 2 |
| 1.3 | Test Objectives..... | 2 |
| 1.3.1 | VTEC..... | 2 |
| 1.3.2 | WBC..... | 3 |
| 2 | Policies..... | 4 |
| 2.1 | Assumptions/Limitations..... | 4 |
| 2.2 | Entrance Criteria..... | 4 |
| 2.3 | Conduct and Duration..... | 5 |
| 2.4 | System Operating Environment..... | 5 |
| 2.5 | Roles and Responsibilities..... | 6 |
| 2.5.1 | Test Review Group (TRG)..... | 6 |
| 2.5.2 | Data Management..... | 8 |
| 2.5.3 | Test Activities..... | 9 |
| 2.5.4 | Data collection, analysis and reporting results..... | 9 |
| 2.5.5 | Problem Adjudication..... | 9 |
| 2.6 | Test Support..... | 11 |
| 2.6.1 | AWIPS Network Control Facility (NCF)..... | 11 |
| 2.6.2 | AWIPS Site Support Team (SST)..... | 12 |
| 2.6.3 | Hydrologic Services Division (HSD)..... | 12 |
| 2.6.4 | Developers..... | 12 |
| 3 | Test Management Structure..... | 12 |
| 3.1 | NWS Headquarters..... | 12 |
| 3.1.1 | VTEC-WBC OT&E Director..... | 12 |
| 3.1.2 | VTEC Project Manager..... | 13 |
| 3.1.3 | WBC Project Manager..... | 13 |
| 3.1.4 | VTEC Service Program Manager..... | 13 |
| 3.1.5 | WBC Service Program Manager..... | 13 |
| 3.1.6 | WBC Development Coordinator/Test Manager..... | 14 |
| 3.1.7 | VTEC-WBC OT&E Management Team Members..... | 14 |
| 3.1.8 | WBC Product Assessment Team Lead..... | 14 |
| 3.1.9 | Public and Fire Weather Products Focal Points..... | 15 |
| 3.1.10 | Hydrologic Products Focal Point..... | 15 |
| 3.1.11 | Marine Products Focal Point..... | 15 |
| 3.1.12 | SPC Focal Point..... | 15 |
| 3.1.13 | VTEC Development Team (MDL, FLS, and OHD)..... | 15 |
| 3.2 | NWS Regional Headquarters..... | 15 |
| 3.3 | Test Sites..... | 16 |

Part II Methodology

| | | |
|-----|--------------------------|----|
| 1 | Approach..... | 17 |
| 2 | Sites..... | 18 |
| 2.1 | Site Training..... | 20 |
| 3 | Test Materials..... | 20 |
| 4 | Test Scenarios..... | 21 |
| 4.1 | Definition..... | 22 |
| 4.2 | Development..... | 22 |
| 4.3 | Evaluation Criteria..... | 22 |
| 4.4 | Configurations..... | 23 |
| 5 | Test Schedule..... | 24 |
| 6 | Data Management..... | 24 |
| 7 | Test Conduct..... | 25 |

Part III Reporting

| | | |
|-----|----------------------|----|
| 1 | Reports..... | 26 |
| 2 | Data Analysis..... | 26 |
| 3 | Briefings..... | 26 |
| 3.1 | Biweekly..... | 26 |
| 3.2 | Corporate Board..... | 26 |
| 3.3 | Partners..... | 27 |

Tables

| | | |
|------------|--|-----|
| Table 1 | OT&E Test Review Group (TRG)..... | 6 |
| Table 2 | AWIPS Software Applications Developers..... | 12 |
| Table 3 | OT&E Management Team..... | 14 |
| Table 4 | VTEC OT&E Sites and Points of Contact (POC)..... | 18 |
| Table 5 | WBC OT&E Sites and Points of Contact (POC)..... | 19 |
| Table B-1: | VTEC OT&E Matrix Checklist..... | B-2 |
| Table B-2: | VTEC Format Definition..... | B-7 |
| Table D-1: | VTEC OT&E Test Scenario Schedule..... | D-2 |
| Table D-2: | VTEC OT&E Matrix Checklist for WFO-RIW..... | D-4 |

Appendices

| | | |
|------------|--|-----|
| Appendix A | VTEC IOT&E Test Case Scenarios..... | A-1 |
| Appendix B | VTEC Format Definition and NWS Product Matrix..... | B-1 |
| Appendix C | Test Trouble Report..... | C-1 |
| Appendix D | VTEC OT&E Test Case Scenarios..... | D-1 |
| Appendix E | VTEC and WBC OT&E NWS Forecaster Survey Form..... | E-1 |
| Appendix F | VTEC and WBC OT&E NWS Partner Survey Form..... | F-1 |
| Appendix G | WBC OT&E Test Case Scenarios..... | G-1 |
| Appendix H | WBC OT&E Message Archive and Metrics..... | H-1 |

Part I. Overview

1 Introduction

1.1 Background

1.1.1 VTEC

Planning for implementation of a Valid Time Event Code (VTEC) began in 1997 under the Office of Meteorology to improve usability of NWS Watch, Warning and Advisory products. VTEC is a code that describes the content of watches, warnings and advisories, (i.e. what event is being alerted and when the event is effective.) The standardized coding allows selective dissemination, reception and display of NWS text products. In addition, NWS customers and partners can use VTEC to follow the life cycle of every watch, warning, or advisory from when it is issued until it either expires or is canceled.

The implication of such coding is it removes human intervention and judgment from the receipt and dissemination process thereby allowing messages to be promulgated to the public for personal and business use and in some cases, initiating significant actions to protect life and property. It is this implication that requires these messages to be accurate in terms of internal consistency between the VTEC string and the product text as well as delivery of an intended message.

The objectives of the VTEC Program are to:

- 1) Implement VTEC in NWS Watch, Warning and Advisory products,
- 2) Improve interpretation and accessibility of critical NWS products,
- 3) Reduce errors in critical NWS products, and
- 4) Improve end-to-end tracking of products associated with specific meteorological and hydrological events.

The VTEC specification, NWS Instruction (NWSI) 10-1703, defines the code and proper message formatting. It was updated to address shortcomings identified during Watch-by-County and internal developmental test and evaluation (DT&E) of the Advanced Weather Interactive Processing System (AWIPS) before it was released. A working group exists to coordinate activities necessary to complete implementation in the software, workout issues associated with policy and concepts of operations, and to resolve issues with coding and implications to the customers and partners.

1.1.2 WBC

The National Weather Service (CONUS) issues approximately 1000 convective watches each year for the continental United States. These watches are an integral part of the warning process for local Emergency Managers and media. Storm Prediction Center (SPC) forecasters dedicate their time to the analysis of weather conducive to the development of severe weather. Local Weather Forecast Office (WFO) forecasters dedicate their time to the analysis of weather situations over their local County Warning Forecast Area (CWFA). The collaboration between

SPC and WFO forecasters on the Convective watch process leverages the unique skills of these respective offices. The Watch by County (WBC) process continues this collaborative process with all 117 WFOs within the CONUS involved in the Convective Watch program.

The existing convective watch process and suite of products is a holdover from the pre-modernized NWS office structure and standard operating procedures. The WBC process and suite of products optimizes the skills of severe weather specialists and local forecasters, utilizes standard operating procedures consistent with the structure of today's NWS, and includes the Valid Time Event Code (VTEC) which will be used by all other watches, warnings, and advisories issued by our agency.

NWSI 10-511 and 10-512 describes the operations policy governing the creation and issuance of convective watch messages. The NWS implementation of WBC spans both the AWIPS and National Centers AWIPS (NAWIPS) systems which produce and disseminate new WBC products, the Watch Outline Update message (WOU) and the Watch County Notification Message (WCN).

1.2 Purpose

Operational Test and Evaluation (OT&E) is used to determine the operational effectiveness and suitability of a system under realistic conditions, and to determine if specified minimum acceptable operational performance requirements have been satisfied. The OT&E of VTEC functionality will demonstrate and validate the NWS' readiness to release operational messages with the VTEC string implemented. The OT&E of WBC functionality will demonstrate and validate the NWS' readiness to release the WBC suite of operational products. This plan defines the test objectives, test organization and test methodology for accomplishing the OT&E.

1.3 Test Objectives

1.3.1 VTEC

All event driven watch and warning products issued by the NWS must contain an accurate VTEC string. Assessment of the operational effectiveness of VTEC will be accomplished through validation of the following test objectives and associated evaluation criteria:

- 1) Demonstrate that accurate VTEC codes are generated in operational products in an operational environment under real world weather situations and scenarios.
 - a) VTEC codes conform to the specification defined in NWSI 10-1703.
 - b) VTEC strings can be accurately generated when WFOs are in service backup.
- 2) Demonstrate the VTEC concept of operations is viable.
 - a) Forecasters understand how to accomplish forecast functions such that automated VTEC features yield correct interpretation by customers.
 - b) The AWIPS software is usable for reliable issuance of watch, warning, and advisory products and system performance is not degraded during hazardous weather or service backup operations.
 - c) Implementation of VTEC causes no significant increase in forecaster workload.
- 3) Demonstrate training was provided to meet the objectives defined for the VTEC program.

- a) Training addressed the key components necessary to successfully issue watches, warnings, advisories and follow-up statements with VTEC strings.
- 4) Demonstrate that VTEC quality control functionality is implemented effectively.
 - a) Products are standardized in accordance with the requirements of the VTEC specification.
- 5) Demonstrate VTEC can be read and processed by NWS customers and partners.
 - a) The intended watch or warning could be ingested and decoded.

1.3.2 WBC

Assessment of the operational effectiveness of WBC process will be accomplished through validation of the following test objectives and associated evaluation criteria:

- 1) Demonstrate that WBC products (WOU and WCN) are accurately generated in an operational environment under real world weather situations and scenarios.
 - a) WBC products conform to the specification defined in NWSI 10-511, 10-512, and 10-1703
 - b) WBC products can be accurately generated when WFOs and/or the SPC are/is in service backup
 - i) WFOs can provide effective service backup for convective watches using AWIPS software.
 - ii) Air Force Global Weather Center can provide effective service backup for SPC in convective watch situations using Watch By County products.
- 2) Demonstrate the WBC concept of operations is viable.
 - a) Forecasters at both the WFO and SPC understand how to generate WBC products in terms of segmentation and ordering
 - i) SPC can cancel the entire convective watch area using a WOU
 - b) Forecasters understand how to generate WBC action codes for real-time service operations.
 - i) WFOs can update, cancel, and extend in time watches using WCNs for their geographic area of responsibility. WCNs contain proper Universal Geographic Codes, Valid Time Event Code (VTEC), and list of counties, independent cities, and marine zones for each segment of the product.
 - ii) WFOs can combine more than one active convective watch into a WCN product.
 - iii) Affected WFOs can “clear” all counties and independent cities from the convective watch for their geographic area of responsibility using the WCN.
 - c) The AWIPS software is usable for reliable issuance of watch products and system performance is not degraded during hazardous weather or service backup operations.
 - b) Implementation of WBC causes no significant increase in forecaster workload.
- 3) Demonstrate adequate training was provided to meet the objectives defined for the WBC program.
 - a) Training addressed the key components necessary to successfully issue WBC products.
- 4) Demonstrate that quality control functionality for WOU and WCN products is implemented effectively.
 - a) Products are standardized in accordance with the requirements of the WBC product and operational specifications.

- 5) Demonstrate WBC products can be read and processed by NWS customers and partners
 - a) The intended WOUs and WCNs could be ingested and decoded.

2 Policies

The following conditions will be adhered to in the oversight of the OT&E:

2.1 Assumptions/Limitations

- 1) The OT&E is scheduled during the summer. Therefore, tests to validate VTEC for winter season products must be simulated instead of using real-time products.
- 2) Simulated initial WOUs will also be used to supplement real-time WOUs due to the limits of convective activity observed at some of the WBC OT&E sites.
- 3) The VTEC for hurricane products might be available as experimental products during the OT&E, but will not be evaluated.
- 4) The VTEC codes for National Centers for Environmental Prediction (NCEP) marine products will be a test version of the NCEP's SPC software.
- 5) Products not operationally generated due to weather events will be labeled with test VTEC codes, ".T" prefix.
- 6) Products generated during real-time weather events will be deemed operational during the OT&E and will have experimental VTEC codes, ".X" prefix.
- 7) The initial Watch Outline (WOU) messages will have experimental VTEC codes and will use the ".X" prefix. Update and Final WOUs, all Watch County Notification (WCN) messages will use the ".E" prefix. The initial WOU is an operational product. The other WOUs and all WCNs are experimental and the Mass News Dissemination (MND) Header will reflect this status.
- 8) AWIPS Operational Build (OB) 3.3 WarnGen, Watch Warning and Advisory (WWA), and RiverPro software must be installed at the OT&E WFO sites. (See section 2.4 System Operating Environment).
- 9) To fully assess the operational products, all OT&E sites must use WWA for "long fused" warnings and all watches, and no other software application.
- 10) Four marine products will not be a part of the OT&E scenarios, Coastal Waters Forecast (CWF), Great lakes Forecast (GLF), Offshore Forecast (OFF), and the Near Shore forecast (NSH).

2.2 Entrance Criteria

The OT&E will begin after the OT&E Director (See Section 3 Test Management Structure) verifies the following prerequisites are met:

- a. The OT&E Plan is completed and signed by the Office of Science and Technology (OST), Director, in coordination with the Office of Climate, Water and Weather Services (OCWWS), and the Office of Operational Systems (OPS), and the appropriate NWS Regional Headquarters focal points.
- b. The DTE is successfully completed.
- c. All major AWIPS software test phases through System Verification Review (SVR), including Beta testing of subsequent maintenance releases, are completed.

- d. All critical Deficiency Reports (DR)/Test Trouble Reports (TTR) identified in test activities are closed.
- e. All OT&E site personnel have completed training in the use of the AWIPS product generation application WWA and the quality control implications introduced with the VTEC.
- f. Policy documents defining VTEC, WBC, and operating policies are approved.
- g. All user manual documentation updates are complete.
- h. All requisite software configurations are complete and verified.

2.3 Conduct and Duration

Prior to OT&E, an Initial OT&E (IOT&E) was performed at National Weather Service Headquarters (WSH) using volunteer field forecasters. The IOT&E validated all the test case scenarios developed by both VTEC and WBC Service Program Managers. The IOT&E was approximately one month in duration. The results of the IOT&E were used to correct critical deficiencies found in the AWIPS product generation algorithms that generate VTEC and WBC products prior to starting OT&E.

The OT&E will involve designated field offices, from all six NWS regions for VTEC evaluation and from the four CONUS regions for WBC, whose forecasters have received training on VTEC and WBC functionality. The OT&E will be conducted over a 6-week period and will operate in real-time operations issuing routine and non-routine products on a 24-hour a day/7 days a week basis. Selected OT&E sites will also be required to generate VTEC products that normally would not be generated during the summer season the OT&E is expected to occur. Also, scripted scenarios will be performed, using canned data sets, for both short fuse and long fuse watches and warnings as required, to supplement live testing. Test scenarios will also be used when an OT&E site generates VTEC and WBC products in a service backup mode of operation. Additional workload expected of the field forecasters during OT&E will come from the completion of an evaluation survey form. The VTEC and WBC Service Program Managers and the OT&E Director will coordinate through the appropriate NWS regional headquarters with the Meteorologist-in-Charge on special work activities required of the field forecasters during the OT&E. The Warning Coordination Meteorologist (WCM) will serve as the OT&E focal point at the OT&E sites.

During the OT&E, NWS Partner representatives will be participating in the review, analysis and reporting on products generated and disseminated.

The IOT&E and OT&E will follow the test methodology described in Part II of this OT&E Plan, the schedule in Part II, Section 5.

2.4 System Operating Environment

The following software applications will take part in the OT&E: WarnGen, RiverPro, WWA, and NAWIPS. WarnGen is an AWIPS application that is used to generate and issue short-fused warnings such as Severe Thunderstorm Warnings and Tornado Warnings. Riverpro is an AWIPS application used to issue flood warnings. Watch, Warning, and Advisory (WWA)

software is an AWIPS application used to issue all watches and long-fused warnings. NAWIPS is the National Centers AWIPS software used to generate WOUs. The test will be conducted on baseline AWIPS configurations. The software baseline will be OB3.3.

2.5 Roles and Responsibilities

The following sections describe the roles and responsibilities for the management of the following activities during the OT&E:

- 1) Oversight of the review and resolution of deficiencies documented during the test,
- 2) Test activity coordination,
- 3) Data collection, analysis and reporting results, and
- 4) Problem adjudication.

2.5.1 Test Review Group (TRG)

The TRG is comprised of a group of subject-matter experts and is chaired by the director of the OT&E. During the OT&E, the role of the TRG is to evaluate the impact of each test trouble report (TTR) (see Appendix C, Test Trouble Report) on daily field service operations and make recommendations to the VTEC-WBC Service Program, VTEC Project, and WBC Project Managers on their criticality. The TRG is comprised of personnel from the offices identified in Table 1. Following completion of the OT&E, the TRG will convene to review the findings and recommend whether to proceed with national implementation.

| Table 1. OT&E Test Review Group (TRG) | | | |
|--|-------|---|----------------------|
| Name/Organization | | Function | Phone |
| Deirdre Jones | OST3 | Test Review Group Chair and WBC Project Manager | 301-713-0629x105 |
| Jason Tuell | OST31 | VTEC Project Manager | 301-713-1809x112 |
| James E. Lee | OS22 | VTEC Service Program Manager | 301-713-0462x140 |
| Richard Okulski | OS22 | WBC Service Program Manager | 301-713-1867 x114 |
| Jerald Dinges | OPS24 | VTEC Testing Manager | 301-713-0326x160 |
| Robert Rood | OST32 | WBC Testing Manager | 301-713-0211 x177 |
| Herbert White/Art Kraus | OS51 | VTEC Dissemination Policy Focal Point | 301-713-0090x146/161 |
| Mark Tew | OS22 | Public and Fire Weather Services Focal Point | 301-713-1867x103 |

| Table 1. OT&E Test Review Group (TRG) | | | |
|--|------------|---|------------------------------|
| Name/Organization | | Function | Phone |
| Tom Donaldson | OS32 | Hydrologic Services Focal Point | 301-713-0006x173 |
| Richard May | OS21 | Marine Services Focal Point | 301-713-1677x127 |
| Shannon White | OS6 | VTEC Training Focal Point | 301-713-0280x125 |
| Brad Grant | OS62 | WBC Training Focal Point | 405-573-3357 |
| Steve Schotz | NP14 | NCO; Development Branch | (301)763-8000 x7186 |
| Russell Schneider | NC | NCEP (SPC) Focal Point | 405-579-0704 |
| Greg Noonan | CR3x1 | CRH Met Sciences Div Focal Point | 816-891-7734 x301 |
| | | CR1x1 Jim Keeney (alt) CRH Focal pt | 816-891-7734 x702 |
| Jim Keeney | CR1x1 | CRH Focal Point (alt) | |
| Jason Franklin | ER1 | ERH MSD Focal Point | 631-244-0125 |
| Stanley Levine | ER- BUF | WCM | (716) 565-0015 |
| Walt Zaleski | SR1 | SRH MSD Focal Point Mike Mach NWR/Dissemination (alt) Melinda Bailey, Public/Marine (alt) Victor Murphy, Fire Weather (alt) SR Hydro Branch, Hydro Products (alt) | 817-978-1100 |
| Craig Schmidt | WR1 | WRH MSD Focal Point | 801-524-4000. |
| Jeff Lorens | | WRH Focal Point | 801-524-4000 |
| Paul Flatt | WR- BOI | WBC Product Assessment Team Lead | 208-334-9861 |
| Duane Carpenter | AR1 | ARH MSD Focal Point Aimee Devaris (alt) | 907-271-5127 907-271-3507 |
| Bill Ward | PR11 | PRH MSD Focal Point | 907-272-532 |
| Daniel McCarthy | | SPC | 405-579-0747 |
| Russell Schneider | | SPC | 405-579-0747 |
| Bill Callahan | Partner | WSI | |
| Chuck Keller | Partner | NY State Emergency Management | |
| Marvin McInnis | Partner | First Alert | 913-402-9917 |

| Table 1. OT&E Test Review Group (TRG) | | | |
|---------------------------------------|---------|-----------------|-------|
| Name/Organization | | Function | Phone |
| Chad Johnson | Partner | Weather Central | |

2.5.2 Data Management

2.5.2.1 VTEC

The OCWWS VTEC Service Program Manager will have overall management of the production, collection and analysis of all test and real-time NWS products containing VTEC, and forecaster and user test surveys. Designated focal points will be assigned to coordinate the daily tracking of test results for NWS products under the service program area as appropriate to his/her program responsibility. During the IOT&E at WSH, all test products generated by the test case scenarios were printed for validation of test results. During the OT&E, each Service program focal point will be responsible for the collection of both real-time generated NWS products and all test products generated at the OT&E sites. The Service program focal points will interact with the WCM at each OT&E site. Product verification and questions from the Service Program focal points will be coordinated through the appropriate WCM. All products and other test results will be retained in either hard or softcopy for a record of the VTEC test results used in data analysis and reporting to the TRG and NWS senior management.

During the OT&E the service program focal points will generate TTRs for VTEC problems found in real-time products. The WCM will be responsible for generating TTRs for problems found when the OT&E sites perform specific test scenarios. Test Track Pro will be the tool to enter all TTRs. The Internet link to this tool is:

<http://webdev1.weather.gov/ttweb/login.htm>

See Appendix C, Test Trouble Report Form for instructions.

2.5.2.2 WBC

The OCWWS WBC Service Program Manager will have overall management of the production, collection and analysis of all test and real-time WBC products, and forecaster and user test surveys. Designated focal points will be assigned to coordinate the daily tracking of test results for WBC products under the service program area as appropriate to his/her program responsibility. In addition, WBC products will be collected and analyzed automatically by a software assessment tool. The Watch By County Message Archive site was created with two main purposes. First, the site provides a location to review old Watch Outline Update messages, Watch County List messages, and Watch County Notification messages, which would otherwise be purged from AWIPS systems. Second, the site provides an automated method of identifying specific errors or inconsistencies in Watch County Notifications, in addition to a simple

presentation of such error metrics. The Internet link to this tool can be found under the Technical Information section at the following link on the OCWWS web page:

<http://www.nws.noaa.gov/os/watch/>

See Appendix K, Watch by County Message Archive for instructions on use of the Watch by County Message Archive and associated performance metrics.

During the OT&E, each Regional focal point will be responsible for the review of errors generated by the automated assessment tool. The Regional focal points will interact with the WCM at each OT&E site. Product verification and questions from the Regional focal points will be coordinated through the appropriate WCM. The WCM will use Test Track Pro to enter all TTRs. All products and other test results will be archived by the automated assessment tool web page and used in data analysis and reporting to the TRG and NWS senior management. The Internet link to this tool is:

<http://webdev1.weather.gov/ttweb/login.htm>

See Appendix C, Test Trouble Report Form for instructions.

2.5.3 Test Activities

The OT&E Director has overall management responsibility for the test activities during the IOT&E and OT&E. The VTEC and WBC Service Program Managers will be responsible for coordinating the daily test activities leading to, during, and after the each test activity of the IOT&E and OT&E. The activities will coincide with the test strategy as defined in the Methodology section in Part II of this plan.

2.5.4 Data collection, analysis and reporting results

The VTEC Service Program Manager and designated Service Program focal points will collect, analyze, and report to the TRG their assessment of all VTEC products generated during both the IOT&E and OT&E. The WBC Service Program Manager and designated Regional focal points will collect, analyze, and report to the TRG their assessment of all WBC products generated during both the OT&E. Data product collection requirements and tools for collecting the products will be accomplished and implemented prior to the IOT&E. The VTEC-WBC OT&E Management Team (see Section 3 Test Management Structure) will provide or arrange for the necessary hardware and software tools to support the data collection, analysis, and reporting.

2.5.5 Problem Adjudication

2.5.5.1 Problem Adjudication during IOT&E

Any problems encountered by the NWS forecasters supporting the IOT&E at WSH were addressed by the VTEC Service Program Manager, WBC Service Program Manager and/or designated test coordinator (i.e., OCWWS Service Program focal point, designated Regional

focal points). The VTEC and WBC Service Program Managers or their designees are responsible for coordinating the problem resolution and implementing or providing feedback on the resolution of the problem to the test forecaster and/or regional focal point (in the case of WBC) and will ensure the OT&E Director is notified if the problem affects the expected outcome of the test or will negatively affect the test schedule. Each tester will complete a TTR form (see Appendix C Test Trouble Report Form) hardcopy for any problem encountered during the IOT&E. The VTEC and WBC Service Program Manager, OCWWS Service Program or Regional focal point will review the completed form, sign and date it as the authorizing official. The signed TTRs will be collected and maintained by the VTEC and WBC Service Program Managers or designees. For WBC products each designated Regional focal points will be responsible for generating TTRs, for all WCN products generated using live data, initiated from their respective regions. In the case of VTEC and/or WBC tests conducted using canned data sets, the WCM will be responsible for generating any TTR report and forwarding it to the parties listed above for review and sign off.

2.5.5.2 Problem Adjudication during OT&E

During the OT&E, problems encountered by the forecasters in generating VTEC and WBC products at the OT&E sites will be adjudicated in the normal trouble reporting process for AWIPS. The problems preventing operation of the software will be reported to the AWIPS Network Control Facility (NCF) as the first tier of support. The NCF will log the problem and generate a trouble ticket. The NCF will have a list of contacts as a second level of support. The NCF will contact the AWIPS Site Support Team (SST) staff (OPS21) if it relates to the system software operations or WarnGen. The NCF will forward trouble tickets to the designated contact in Hydrologic Service Division if the problem is related to Riverpro. Similarly, the NCF will contact a designated contact in Meteorological Development Laboratory for problems related to WWA. See Section 2.6 Test Support for all support functions. The VTEC and WBC Service Program Managers and designated service program focal points will collect the trouble tickets from the contact points. In addition to reporting problems to the NCF during the OT&E, the forecaster or regional focal point/WCM (in the case of WBC products) will complete a TTR Form (see Appendix C, Test Trouble Report). If the site is able to accomplish the desired task, but feels there were unanticipated issues or if the site encountered difficulty executing a test scenario, the site will prepare and submit the Test Trouble Report.

The TTR form will be available in electronic medium on a website (Test Track Pro) provided by the VTEC and WBC Service Program Managers. The OT&E Point of Contact at each OT&E site will be the authorizing official to sign (electronically) and date the TTR a forecaster completes. The VTEC and WBC Program Managers or designees will assign each submitted TTR a sequential number beginning with "001." The TTRs will be presented along with all AWIPS Trouble Tickets to the VTEC OT&E TRG for adjudication and assigned a priority.

Validated deficiencies will be categorized as follows:

- a. **Critical Deficiency** - A repeatable problem severely impacts site operations; no acceptable workaround exists.

ACTION: The TRG recommends suspension of the test to the VTEC or WBC Program Manager. If suspended, the test resumes when the Program Manager approves a proposed corrective action. When an approved corrective action is implemented, regression testing may be required.

- b. **Urgent Deficiency** - A repeatable problem severely impacts site operations; however, an acceptable workaround exists.

ACTION: The test continues with the current system using a workaround until a permanent fix is available. Once the Program Manager approves the fix, only those test areas affected by the problem will be retested.

- c. **Routine Deficiency** - A repeatable minor problem does not significantly impact site operations.

ACTION: The test continues with the current system; approved workarounds may be implemented. Routine deficiencies are submitted by the TRG to the Program Manager for adjudication.

- d. **Watch Item** - A random or one-time, non-repeatable problem with potentially significant impact on site operations.

ACTION: The TRG monitors test activities for recurrence of the problem; if recurrence is documented, the TRG considers re-categorizing the problem.

- e. **Potential Enhancement** - Identifies a new requirement.

ACTION: The TRG forwards the potential enhancement to the Program Manager for adjudication. The Program Manager may then forward the potential enhancement as a Request for Change.

2.6 Test Support

The lead organizational units who have test support roles and responsibilities during either the IOT&E or OT&E are presented in the following sections. These units will be directed through the VTEC-WBC OT&E Management Team to support test activities in accordance with these roles and responsibilities.

2.6.1 AWIPS Network Control Facility (NCF)

The NCF will provide support to field site users if problems develop during issuance of operational products. Operators must report VTEC and WBC problems to the NCF at 301-713-9344. (NCF Focal Point: Brad Scalio (301) 713-9362) When the NCF can not resolve problems, they will elevate calls to the AWIPS Site Support Team (SST) for WarnGen related issues, to the Meteorological Development Laboratory for WWA issues, and to the Hydrologic Services Division for RiverPro.

2.6.2 AWIPS Site Support Team (SST)

The SST will provide assistance to the OT&E sites in resolving software problems with the AWIPS WarnGen Releases. (SST Focal Point: Michael Rega, (301) 713-1724x170)

2.6.3 Hydrologic Services Division (HSD)

The HSD will provide assistance to the OT&E sites in resolving software problems with the AWIPS RiverPro software releases. (HSD Focal Point: Jeff Zimmerman (301) 713-0624x153)

2.6.4 Developers

This section lists the software developer organizations responsible for implementing VTEC software logic in the AWIPS product generation applications. The AWIPS watch, warning, and advisory product generation applications include:

Table 2. AWIPS Software Applications Developers

| Application | Organization | Lead Developer |
|-------------|--------------|-----------------|
| WARNGEN | FSL | Jim Ramer |
| WWA | MDL | Mark McInerney |
| Riverpro | OHD | Mark Glaudemans |
| NAWIPS | NCEP | Steve Schotz |

These developers will be responsible for troubleshooting problems as they relate to their assigned product application. They will also evaluate their respective product generation application to support data analysis during the IOT&E and OT&E. The AWIPS development manager (SEC Development Branch Chief) will assign TTRs to the development organizations for analysis and resolution. The NCF will forward trouble tickets to the development organizations for analysis and resolution. Development organizations will respond to trouble tickets in accordance with established AWIPS program responsibilities.

The role of the development organizations is critical since they will assist in determining whether a particular deficiency is a software defect. The software developers will also assist in determining the level of effort necessary to resolve defects. This will be used to schedule corrective maintenance for the software.

3 Test Management Structure

3.1 NWS Headquarters

3.1.1 VTEC-WBC OT&E Director

Organizes and manages the NWS personnel supporting the OT&E. Documents and coordinates for signature the NWS involvement in the OT&E in a formal VTEC-WBC OT&E Plan. Sets the overall test schedules. Coordinates conference calls and manages the day-to-day OT&E data

collection, collecting the data, and creating the required reports. Documents the results in the OT&E Report and provides briefings as required. Chairs the TRG.

3.1.2 VTEC Project Manager

Reviews the VTEC-WBC OT&E Plan and Report. Participates in the OT&E as an AWIPS technical resource. The OST Systems Engineering Center (SEC) has overall engineering responsibility for implementing the VTEC software application in the AWIPS product applications and integrating the software into a scheduled AWIPS Release for national deployment. Coordinates VTEC software problems with the VTEC developers during the OT&E. Participates in TRG.

3.1.3 WBC Project Manager

Reviews the VTEC-WBC OT&E Plan and Report. Participates in the OT&E as an AWIPS technical resource. The OST Systems Engineering Center (SEC) has overall engineering responsibility for implementing the WBC software application in the AWIPS product applications and integrating the software into a scheduled AWIPS Release for national deployment. Coordinates software problems with the WBC developers during the OT&E. Participates in TRG.

3.1.4 VTEC Service Program Manager

Assists with the writing of the OT&E Plan and Report. Develops the test scenarios for the OT&E validation of the VTEC on all affected NWS Public, Marine, Fire weather and Hydrologic products. Coordinates with the NWS Regional Headquarters on the selection of the OT&E sites based on the OT&E criteria. Coordinates with the regions on selection of field forecasters to participate in the IOT&E at WSH. Manages the IOT&E to ensure all test case scenarios are performed. Coordinates with the OT&E sites during the test period when specific test case scenarios are issued from a site. Coordinates the analysis of all NWS products (real-time and experimental) issued from the OT&E Sites test results to ensure the VTEC is operating correctly. Coordinates the development, collection, and analyses of feedback surveys for the forecasters and Partners participating in the test. Participates in TRG.

3.1.5 WBC Service Program Manager

Assists with the writing of the OT&E Plan and Report. Develops the test scenarios for the OT&E validation of WBC products. Coordinates with the NWS Regional Headquarters on the selection of the OT&E sites based on the OT&E criteria. Manages the IOT&E to ensure all test case scenarios are performed. Coordinates with the OT&E sites during the test period when specific test case scenarios are issued from a site. Coordinates the analysis of all WBC products (real-time and experimental) issued from the OT&E Sites test results to ensure WBC compliance with applicable NWS directives. Coordinates the development, collection, and analyses of feedback surveys for the forecasters and Partners participating in the test. Participates in TRG.

3.1.6 WBC Development Coordinator/Test Manager

Supports writing of the OT&E Plan and Report. Generates the OT&E Test Plan that will include the details by which the WBC products are generated, analyzed, and reported. Coordinates software corrective actions with the WBC developers during the OT&E. Participates in TRG.

3.1.7 VTEC-WBC OT&E Management Team Members

Supports the VTEC-WBC OT&E director in coordinating and managing the OT&E activities. Contributes to the analysis of the test data and writing and review of plans, reports, and conference call minutes and provides input to the OT&E director. The members include personnel from OST, OCWWS and OPS (see Table 3. OT&E Management Team).

Table 3. OT&E Management Team Members

| | | |
|----------------------|---|--|
| Deirdre Jones (OST3) | VTEC-WBC OT&E Director | Deirdre.R.Jones@noaa.gov |
| James E. Lee (OS22) | VTEC Service Program Manager | James.E.Lee@noaa.gov |
| Jason Tuell (OST32) | VTEC Development Test and Evaluation (DT&E) Manager | Jason.Tuell@noaa.gov |
| Robert Rood (OST32) | WBC Development Coordinator/Test Manager | Robert.Rood@noaa.gov |
| Rich Okulski | WBC Service Program Manager | Richard.Okulski@noaa.gov |
| Shannon White (OS6) | VTEC NWS Forecaster Training Focal Point | Shannon.White@noaa.gov |
| Brad Grant | WBC NWS Forecaster Training Focal Point | Bradford.N.Grant@noaa.gov |
| Jerald Dinges(OPS24) | VTEC OT&E OOS Representative | Jerald.Dinges@noaa.gov |
| Vico Baer (OPS21) | AWIPS Release Build Implementation Schedule and AWIPS SST | Vico.Baer@noaa.gov Vico.Baer@noaa.gov |

3.1.8 WBC Product Assessment Team Lead

Supports the WBC Service Program Manager by analyzing WBC products, informing Regional focal points of erroneous WBC products, and collecting and evaluating customer and forecaster surveys. Participates in TRG.

3.1.9 Public and Fire Weather Products Focal Points

Supports the VTEC Service Program Manager by creating the required test case scenarios for the validation of the VTEC in public and fire weather products. Analyzes the NWS official and experimental real-time products issued from the OT&E sites. Provides feedback and technical assistance to the TRG. Supports the TRG.

3.1.10 Hydrologic Products Focal Point

Supports the VTEC Service Program Manager by creating the required test case scenarios for the validation of the VTEC in hydrologic products. Analyzes the NWS official and experimental real-time products issued from the OT&E sites. Provides feedback and technical assistance to the TRG. Supports the TRG.

3.1.11 Marine Products Focal Point

Supports the VTEC Service Program Manager by creating the required test case scenarios for the validation of the VTEC in marine products. Analyzes the NWS official and experimental real-time products issued from the OT&E sites. Provides feedback and technical assistance to the TRG. Supports the TRG.

3.1.12 SPC Focal Point

Serves on the TRG as technical expert for the evaluation of WBC and VTEC related products issued from the SPC during the OT&E. Participates in the TRG.

3.1.13 VTEC Development Team (MDL, FLS, and OHD)

Software developers design, code, integrate and test the VTEC and WBC software in the AWIPS applications which generate the Watch, Warning, and Advisory products. They will serve as software technical experts to the TRG and troubleshoot problems during the test conduct through the VTEC and WBC Project Managers. Supports the TRG.

3.2 NWS Regional Headquarters

The NWS Regional Headquarters will participate in the development and review of the VTEC-WBC OT&E Plan and will monitor developments at their respective OT&E sites during the test. Specifically, the Regional Meteorological Services Division (MSD) Focal Points, Regional Warning Coordination Meteorologist (WCM) and/or designees will interact with the VTEC and WBC Service Program Managers to:

- 1) Coordinate with their site(s) management to select forecasters to travel to WSH in support of the IOT&E as required.
- 2) Review and coordinate the proposed OT&E sites to comment on their availability and suitability.
- 3) Coordinate requirements for site preparation, conduct of test activities, and test reporting.

- 4) Identify NWS points of contact for each OT&E site (i.e., WCM).
- 5) Serve on the TRG and participate in the OT&E TRG conference calls as required during the test.
- 6) Generate WBC TTRs during OT&E when using live (Regional focal points) and canned (local WCM) data.

3.3 Test Sites

The OT&E sites' management will designate the WCM (see Table 4. OT&E Sites and Points of Contact (POC)) to coordinate test activities at the site during the OT&E with the VTEC and WBC Service Program Managers and Regional focal points (in the case of WBC testing).

The WCM will ensure all forecasters are properly trained on WWA and the implications of WBC and VTEC implementation and related quality control policy and procedure changes. The WCM will become familiar with the OT&E Plan and their roles and responsibilities during the OT&E. The WCM will be prepared to conduct the daily test activities as specified in the plan and have all test case scenarios assigned to the site. The WCM will interact with the appropriate WSH Service program focal point as needed during the OT&E. The WCM will participate in VTEC-WBC OT&E TRG conference calls to provide information on the VTEC products generated at the site during the OT&E.

The forecasters will use the AWIPS in operations during the OT&E to issue real-time watches, warnings and advisories using the AWIPS applications containing VTEC or on a non-interference basis to service operations issue experimental VTEC and WBC products in accordance with assigned test case scenarios; document problems or difficulties to operations arising from generating WBC products and VTEC use; complete the forecaster survey provided in the VTEC-WBC OT&E Plan; and, provide all required information and completed surveys to the WCM and regional focal points.

Part II Methodology

1 Approach

The verification of the VTEC code and forecaster and NWS Partner satisfaction of the VTEC implementation in NWS service operations will be divided into two phases of OT&E:

- 1) IOT&E;
- 2) OT&E.

The IOT&E will be a verification of all test case scenarios developed by OCWWS to valid all possible parameters of VTEC with all Public, Marine, Fire Weather, and Hydrologic NWS products (see Appendix A, VTEC IOT&E Test Case Scenarios). The purpose of the IOT&E is to verify all specification requirements for VTEC in a simulated operational environment. This test will provide feedback to the VTEC Project Manager on whether the software developers successfully implemented the specification requirements in the AWIPS VTEC software applications. Also, the IOT&E will validate the methodology used to collect, analyze, and report on the VTEC products generated by the test AWIPS.

After successful DT&E, OCWWS will coordinate the conduct of these test case scenarios with volunteer field forecasters using a designated AWIPS test system at WSH, Silver Spring, MD. The forecasters will generate VTEC products in a simulated operations environment using the test case scenarios. Once all test scenarios are performed and all VTEC parameters successfully validated, the VTEC Service Program Manager will present the test results to the VTEC TRG at the Test Readiness Review with a recommendation to proceed with the OT&E.

The OT&E will be conducted at selected field sites and will verify VTEC and WBC implementation in real-time service operations. WBC and VTEC products will be generated using the AWIPS WWA, Riverpro, WarnGen and/or NAWIPS product generation application when actual meteorological/hydrologic conditions warrant the issuance of any watch/warning or advisory. Some OT&E sites will be instructed to perform test case scenarios, using as needed canned data sets, to generate test VTEC and WBC products on a non-interference basis. These artificially generated products will be coded with the “.T” prefix to indicate it is a test product. This activity is designed to verify WBC products and VTEC in products that are seasonal in issuance (or occur much less frequently during the OT&E period) and will not be possible to generate in real-time due to the season in which the OT&E is scheduled.

Surveys will be provided by OCWWS to evaluate both the forecasters at the OT&E sites on the training and usefulness of VTEC and WBC products and to gather input from the Partners who receive the NWS products for dissemination to the Public.

The OCWWS service program focal points will collect the VTEC products by softcopy and/or hardcopy at the NWS Telecommunication Gateway. They will validate the VTEC in each product the OT&E sites generate and present the results as required to the TRG. The mechanism

for data collection, analysis, and reporting must be in near real-time. As soon as the error (i.e., software problem, operator error, or training shortfall) is identified, immediate action may be required to contact the forecaster responsible for issuance of the product for appropriate coordination. At all times the Service program focal point will interact with the WCM at the OT&E site(s). The WCM will then interact with the appropriate forecasters as necessary and collect all required information requested by the Service program focal point.

During the start of the OT&E, separate VTEC and WBC conference calls will be held daily to coordinate test activities and feedback between the OT&E sites and the TRG. VTEC and WBC daily conference calls may be adjusted to weekly conference calls if deemed sufficient by the TRG.

2 Sites

OT&E sites will be chosen based on climatology and geography to ensure maximum coverage of the product types possible to occur naturally and the likelihood of a certain site to issue certain products. For example, dry western sites prone to wild fires and flash floods, mountainous northern tier sites prone to intense snow and blizzard conditions, and tornado alley sites prone severe weather. Test scenarios will be provided to sites that would normally have certain conditions but which would not experience the condition during the OT&E period. The VTEC and WBC Training modules are scheduled for July and August 2004. To perform a thorough test, sites will have to operationally test most of the following items:

- 1) Severe weather products (WOU/WCN/TOR/SVR/SVS)
- 2) All hydrologic watch/warning products (FFA/FLW/FFW/FFS/FLS)
- 3) Marine products (MWS)
- 4) Non-precipitation weather watch/warning/advisory products, especially high wind and excessive heat events (NPW)
- 5) Early season winter weather event (WSW)
- 6) Fire weather watch/warning products (RFW)
- 7) Hazards that cross regional/county warning area boundaries, and
- 8) Service backup.

(Note: VTEC for marine products CWF/OFF/GLF/NSH will not be available during OT&E)

The sites participating in the OT&E are listed in Table 4.

Table 4. VTEC OT&E Sites and Points of Contact (POC)

| Region | Site name/ID | POC |
|---------------|--------------------------|-----------------|
| Alaska | WFO Juneau (AJK) or | Chris Maier |
| Alaska | Alaska Region HQ (VRH) | Duane Carpenter |
| Central | WFO Riverton, WY (RIW) | Chris Jones |
| Central | WFO Cheyenne, WY (CYS) | John Griffith |
| Central | WFO Des Moines, IA (DMX) | Jeff Johnson |

| | | |
|----------|----------------------------|-----------------|
| Central | WFO Detroit, MI (DTX) | Richard Pollman |
| Eastern | WFO Charleston, SC (CHS)* | Jerry Harrison |
| Eastern | WFO Mt. Holly NJ (PHI) | Joseph Miketta. |
| Pacific | Pacific Region HQ (PBP) | Bill Ward |
| Southern | WFO Tallahassee, FL (TAE) | Bob Goree |
| Southern | WFO Jacksonville, FL (JAX) | Al Sandrik |
| Southern | WFO Tampa, FL (TBW) | Dan Noah |
| Southern | WFO Melbourne, FL (MLB) | Dennis Decker |
| Western | WFO San Diego, CA (SGX) | Ed Clark |
| Western | WFO Las Vegas, NV (VEF) | Andy Bailey |
| Western | WFO Flagstaff, AZ (FGZ) | George Howard |
| Western | WFO Phoenix, AZ (PSR) | David Runyan |
| Western | WFO Boise, ID (BOI)* | Paul Flatt |

*: Both WBC and VTEC OT&E Site

Personnel at these test sites must perform the VTEC Training module before participating in this test.

The WFO sites participating in the WBC OT&E are listed in Table 5. In addition, the Storm Prediction Center (SPC) in Norman, OK is participating in the OT&E. The SPC POCs are Joseph Schaefer, Director of the SPC, Russell Schneider*, Chief, Science Support Branch, Greg Grosshans, SPC Software Analyst. (* Russell is the primary point of contact.)

Table 5. WBC OT&E Sites and Points of Contact (POC)

| Region | Site name/ID | POC |
|---------------|--------------------------------|----------------|
| Central | WFO Pleasant Hill, MO (EAX) | Michael Hudson |
| Central | WFO St. Louis, MO (LSX) | Jim Kramper |
| Central | WFO Springfield, MO (SGF) | Steve Runnels |
| Central | WFO Wichita, KS (ICT) | Chance Hayes |
| Eastern | WFO Charleston, SC (CHS)(M)* | Jerry Harrison |
| Eastern | WFO Columbia, SC (CAE) | Steve Naglic |
| Eastern | WFO Newport, NC (MHX) (M) | John Cole |
| Eastern | WFO Raleigh, NC (RAH) | Jeff Orrock |
| Eastern | WFO Wilmington, NC (ILM) (M) | Tom Matheson |
| Southern | WFO Fort Worth, TX (FWD) | Gary Woodall |
| Southern | WFO Houston, TX (HGX) (M) | Gene Hafele |
| Southern | WFO Lake Charles, LA (LCH) (M) | Roger Erickson |

| | | |
|--------------------|-------------------------------------|----------------|
| Southern | WFO Norman, OK (OUN) | Rick Smith |
| Western | WFO Billings, MT (BIL) | James Scarlett |
| Western | WFO Boise, ID (BOI)* | Paul Flatt |
| Western Western | WFO Glasgow, MT (GGW) WFO Tucson | Tanja Fransen |
| Western | WFO Great Falls, MT (TFX) | Rick Dittman |

*: Both WBC and VTEC OT&E Site

M: Denotes Marine Responsibility

Personnel at these test sites must complete the Watch by County training offered by the Warning Decision Training Branch (WDTB).

2.1 Site Training

Forecasters at OT&E sites will need to understand how their operations impact the VTEC code, what the VTEC code means, why customers want VTEC, and how to generate and distribute WBC products. Stressing the correct method for performing certain actions, including service backup, will be included in site training.

A recorded VTEC primer will be available on the web to give an overview of the actual code and how to interpret it. It also gives a background of why the customers requested VTEC and the impact on WFO operations.

The next phase involves training on the proper procedures to use in creating products with VTEC coding. This will involve training on WWA, WarnGen, and RiverPro. Scenarios will be given which highlight the correct way to produce an effective VTEC code and things to avoid. The focus will be on correcting mistakes and operational philosophies. Teletraining will be the mode of delivery.

Upon completion of OT&E, each participating site will be asked to complete a training survey.

3 Test Materials

The primary test document used during the verification of the WBC products and the VTEC in NWS products by the NWS field Forecasters and Partners will be the VTEC-WBC OT&E Plan. The final drafts of:

1. National Weather Service Instruction 10-1703
Operations and Services
Dissemination Services, NWSPD 10-17
VALID TIME EVENT CODE (VTEC)
Dated, June 11, 2004
2. National Weather Service Instruction 10-511
Operations and Services

Public Weather Services, NWSPD 10-5
National Severe Weather Products Specification
Dated, November 3, 2004

3. National Weather Service Instruction 10-512
Operations and Services
Public Weather Services, NWSPD 10-5
National Severe Weather Products Specification
Dated, July 16, 2004

will be available for reference. The NWS Instructions will become effective on the VTEC and WBC implementation date. The VTEC-WBC OT&E Plan contains as attachments the following items required by the testers:

- 1) IOT&E:
 - a) **All Test Case Scenarios** – Specific step-by-step procedures for the forecaster to use in validating each VTEC parameter for every NWS Watch, Warning, and Advisory product issued. (Appendix A)
 - b) **Test Trouble Report Form** – This hardcopy form is used by the tester to document problems encountered during the test. (Appendix C)
- 2) OT&E:
 - a) VTEC
 - i) **Test Case Scenarios** – Specific step-by-step procedures for the forecaster to use to create experimental NWS VTEC products as assigned. (Appendix E)
 - ii) **Test Trouble Report Form** – This on-line form is used by the tester to document problems encountered during the test. (Appendix C)
 - iii) **NWS Field Forecast Survey Form** – This form will be completed by each forecaster to evaluate impact of VTEC on operations during the test. (Appendix F)
 - iv) **NWS Partner Survey Form** - This form is used by the NWS Partners participating in the OT&E to evaluate how effective the VTEC implementation was during the test. (Appendix G)
 - b) WBC
 - i) **Test Case Scenarios** - Specific step-by-step procedures for the forecaster to use to create experimental NWS VTEC products as assigned. (Appendix H)
 - ii) **NWS Field Forecast Survey Form** - This form will be completed by WFO forecasters to evaluate the impact of WBC on operations during the test. (Appendix I)
 - iii) **SPC Survey Form** – This form will be completed by SPC forecasters to evaluate the impact of WBC. (Appendix J)
 - iv) **NWS Partner Survey Form** – This form is used by the NWS Partners participating in the OT&E to evaluate how effective the WBC implementation was during the test. (Appendix K)

4 Test Scenarios

Test scenarios will be developed to provide forecasters with controlled data input to WWA during DT&E, IOT&E, and OT&E for VTEC-WBC. The controlled input will be the basis of the WBC products and VTEC coding string produced by WWA. Included in each test scenario are expected results. This will allow for analysis to determine if WWA is producing a correct VTEC string based on the controlled data input.

4.1 Definition

VTEC and WBC test scenarios will be defined for each combination of phenomena, significance, and action codes defined in Appendix B, VTEC IOT&E Test Case Scenarios. A subset of these scenarios will be selected for the OT&E test cases for VTEC. (see Appendix E) WBC test scenarios will be defined for each combination of phenomena, significance, and action codes defined in Appendix H, WBC OT&E Test Case Scenarios.

4.2 Development

Development of the test scenarios will be accomplished by the service program focal points.

4.3 Evaluation Criteria

Evaluation criteria in each of the test scenarios will enable service program focal points and test personnel to validate the creation of the VTEC coding string. Evaluation criteria are established to ensure the test objectives are met and are classified as follows:

- 1) Training will be assessed by survey of OT&E participants who receive the VTEC and WBC training provided by OS6 personnel. Care will be taken to ensure software and policy issues are not considered training failures. Training evaluation will be used to improve training to be offered in Fall 2004 to all forecasters. Training effectiveness will be evaluated mid-August to enable time to fold improvements into the training plan/materials.
 - a) Success criteria: Survey responses from forecasters rating effectiveness of various aspects of training to enable them to issue VTEC and Watch by County products.
 - b) Success: greater than or equal to 3 average on scale of 1-5
 - c) Failure: less than 3 average rating on scale of 1-5. Failure results in providing significant improvement to training prior to offering training prior to VTEC going operational.
- 2) VTEC code compliance will be evaluated by inspection of VTEC strings in products issued by OT&E offices during the test period. Every field of the VTEC strings will be checked. One error or multiple errors in one product's VTEC string will be counted as one product error. Multiple lines of VTEC will count separately.
 - a) Success criteria:
 - i) Format of VTEC String matches NWSI 10-1701 and NWSI 10-1703.
 - ii) Product type (O,T, E, X) and MND header are consistent
 - b) Success: Product VTECs accurate 95% of the time (tolerance, 5%)

- c) Failure: aggregate of erroneous products is more than 20% of total products issued during the period.
- 3) Watch by county products compliance was evaluated during the first OT&E in 2003. Will verify products were not degraded when usability was improved.
 - a) Success Criteria:
 - i) WCNs compliant with 10-511
 - ii) WOUs compliant with 10-512
 - b) Success:
 - i) Single watch products 95% accurate (tolerance 5%)
 - ii) Multiple watch products 85% accurate (tolerance 5%)
 - c) Failure: aggregate of erroneous products is more than 10% (single) or 20% (multiple)
- 4) Product automated Quality Control will be evaluated by performing internal consistency check of the products.
 - a) Success criteria:
 - i) Event Tracking Numbers (ETNs) are continuous in normal operations
 - ii) ETNs are continuous in service backup mode
 - iii) Corrections are accurately reflected in the BBB field
 - iv) Correctly ordered segments in multiple watch convective watches (WCNs)
 - b) Success: Minimum of 85% of products/product segments found to be internally consistent (tolerance, 5%)
 - c) Failure: inconsistency of either type found within 20% of the OT&E products.
- 5) Concept of operations will be evaluated by verifying the intended action of the VTEC and WBC products was accurately communicated. Will require same day review of the products.
 - a) Success criteria:
 - i) Any county receiving a watch or warning was initiated via NEW or EXA action.
 - ii) Updates to products are properly sequenced.
 - (1) Upgrade/downgrade, Extensions, and continued products .
 - iii) Cancellations are issued at appropriate times,
 - iv) Counties accurately warned in service Backup,
 - v) VTEC and headline are internally consistent.
 - b) Success will be determined by 85% accurate products (tolerance, 5%). Each segment will be evaluated and will be counted. Reviewer must verify action codes, phenomenon codes and significance match the verbs and adjectives in the headlines. And also verify Time is valid.
 - c) Failure: More than 20% of the products are in error.
- 6) NWS Partners will verify the products are complying with the advertised specifications.
 - a) Success: greater than or equal to 3 average on scale of 1-5
 - b) Failure: less than 3 average rating on scale of 1-5. Failure results in providing significant improvement to training prior to offering training prior to VTEC going operational.

4.4 Configurations

Tests will be conducted at WFOs using the NWS baseline AWIPS systems operating in normal and service backup modes and at the Storm Prediction Center using the National Centers AWIPS (NAWIPS) system operating in normal mode.

5 Test Schedule

The IOT&E will commence April 15, 2004 through May 14, 2004. A detailed schedule will be provided depicting the specific rotation of NWS field Forecaster to WSH.

The OT&E is scheduled to commence August 30, 2004 and end October 13, 2004.

(NOTE: Detailed schedule dates for OT&E sites to perform specific test case scenarios and including VTEC and WBC product generation in Service Backup Operations will be provided.)

6 Data Management

The primary tool for managing the test results during IOT&E will be the *VTEC Parameter and NWS Product Matrix* found at Appendix B. All test case scenarios will be inventoried and assigned to each NWS Field Forecaster participating in the tests. The VTEC Service Program Manger will have designated test focal points to collect the completed test scenarios from each forecaster at the end of the day. The Test focal point will provide the results to the VTEC Service Program Manger who will in turn present the results to the VTEC TRG for review and adjudication of problems. The TRG will be scheduled to meet daily when IOT&E begins. The primary focus of the test results will be to provide feedback to the VTEC software developers through the VTEC Project Manager on problems with the implementation of the VTEC. A secondary goal of reviewing the test case scenario results is to provide feedback to the VTEC Service Program Manager on improving individual test case scenarios particularly those intended for OT&E.

During the OT&E, forecasters will issue real-time NWS Watch, Warning, and Advisory products during the forecast office's service operations. These products will be collected in real-time at the NWS Telecommunication Center and retained both in soft and hard copies. The VTEC service program managers and Regional focal points will review these products daily and provide their evaluation feedback to their respective VTEC and WBC Service Program Managers. This feedback will be presented to the TRG for review and problem adjudication as necessary.

Specific test case scenarios will also be performed by designated OT&E sites during the OT&E (See Appendix E). These test case scenarios will be used to generate WBC products and other NWS products with VTEC parameter codes for those products that cannot be generated in real-time because the OT&E is scheduled during the summer. Such tests will be coordinated in advance so enough time is provided to issue public notification statements to alert the NWS customers test products will be issued. Each completed test scenario will be sent daily by the OT&E VTEC Service Program focal point using facsimile to the appropriate VTEC Service program focal point at WSH. The VTEC Service program focal point will review the test case scenario results and provide the results to the VTEC Service Program manager for review by the TRG.

For WBC specific test case scenarios, each completed test scenario will be sent by the impacted test site's WCM to its designated regional focal point and WBC Service Program Manager for review. The WBC Service Program Manager will provide the results to the TRG for final review.

Finally, a selected OT&E site will be required to go into service backup and use their AWIPS to generate and issue VTEC and WBC products for another office. This test will be coordinated by the VTEC and WBC Service Program Managers with the VTEC and WBC OT&E Managers and the appropriate NWS Regional Headquarters and Meteorologist-in-Charge.

7 Test Conduct

The IOT&E and OT&E will follow the VTEC-WBC OT&E Plan, Part II, Methodology, Section 1.0 Approach and Section 5 Test Schedule. The IOT&E will validate all VTEC specification requirements in a simulated operational environment using an AWIPS test system at WSH. The test will last one month. The VTEC Service Program Manager will rotate NWS field forecaster one week to use the AWIPS test system. Each Forecaster will be assigned a specific number of test case scenarios to complete while participating in the test. The forecaster will provide the VTEC Service program focal point assigned as test manager with the completed test case scenarios at the end of each day. During the test, the forecaster will complete a Test Trouble Report form to document any problems encountered trying to complete a test scenario. In addition, the forecaster will annotate on the test scenario the step in the procedure the problem occurred. The VTEC Service program focal point will interact with the forecaster to assist in any questions or problems.

The OT&E will commence simultaneously at all OT&E sites. The primary focus will be for the forecast office to generate real-time NWS Watch, Warning, and Advisory products during their non-routine service operations. The OT&E site Weather Forecast Office Meteorologist-in-Charge, and National Center Director have the authority to suspend the OT&E at their site if, at anytime, the site service operations are negatively affected. They will notify, as soon as practical, the OT&E Director through the VTEC and/or WBC Service Program Managers, of this decision and why it was made.

The OT&E site personnel will log VTEC and/or WBC problems and notify the NCF as soon as possible. They will also notify the OT&E Director through the VTEC and/or WBC Service Program Manager of problems by e-mail as soon as possible. Problems will be identified and classified and Critical, Major or Routine, and critical problems warrant suspension of the OT&E.

Part III Reporting

1 Reports

The OT&E Test Report will be produced within 30 days of completion of the OT&E. The report will assess the TTRs generated and whether the test objectives were met based on the detailed evaluation criteria listed in Section 4.3 of this Test Plan. Periodically during the OT&E the Test Director will release status reports to the WBC/VTEC oversight board, the Directors of the Offices of Science and Technology (OST), Climate Water and Weather Services, (OCWWS) and the Operational Systems (OOS).

2 Data Analysis

The OCWWS Service Program VTEC Focal Point will perform all analyses during both the IOT&E and OT&E. The NWS products containing the VTEC will be evaluated in accordance with the specification requirements documented in NWS Instruction 10-1703, Operations and Services Dissemination Services, NWSPD 10-17, Valid Time Event Code (VTEC). The WBC will be evaluated in accordance with the specification requirements documented in NWS Instruction 10-511, Operations and Services Public Weather Services, NWSPD 10-5 National Severe Weather Products Specification and NWS Instruction 10-512, Operations and Services Public Weather Services, NWSPD 10-5 National Severe Weather Products Specification. All analysis results will be provided to the TRG for review to support a decision whether to proceed with national implementation of the VTEC and WBC in NWS service operations. The analysis performed during the IOT&E and OT&E will be incorporated into a final VTEC-WBC OT&E Report.

3 Briefings

Three types of briefings will be conducted to inform upper management and partners of the status of VTEC-WBC OT&E: Biweekly to OS/OST Directors, results briefing to Operations Committee of the Corporate Board, and to our partners.

3.1 Biweekly

Biweekly status briefings will be provided to the directors of OS and OST on the preparation, conducts, and status of all aspects of VTEC-WBC OT&E.

3.2 Corporate Board

At the conclusion of the VTEC-WBC OT&E, a briefing will be provided to the Operations Committee of the Corporate Board. This briefing will be focused on the test results, and include a recommendation on VTEC and WBC implementations and next steps.

3.3 Partners

It is important for the NWS to keep the partners informed of the status of VTEC-WBC OT&E. Therefore, the partners listed in Table 4, will be briefed at every Test Review Group meeting.

Acronyms

| | |
|---------|--|
| ARH | Alaska Region Headquarters |
| AWIPS | Advanced Weather Interactive Processing System |
| CONUS | Continental United States |
| CRH | Central Region Headquarters |
| CWF | Coastal Water Forecasts |
| CWFA | County Warning Forecast Area |
| DR | Deficiency Report |
| DT&E | Developmental Test and Evaluation |
| GLF | Great Lakes Forecast |
| ERH | Eastern Region Headquarters |
| IOT&E | Initial Operational Test and Evaluation |
| MND | Mass News Dissemination |
| MSD | Meteorological Services Division |
| NAWIPS | National Centers AWIPS |
| NCEP | National Centers for Environmental Prediction |
| NCF | AWIPS Network Control Facility |
| NSH | Near Shore Forecast |
| NWS | National Weather Service |
| NWSH | National Weather Service Headquarters |
| NWSI | NWS Instruction |
| OB | Operational Build (for AWIPS) |
| OCWWS | Office of Climate, Water, and Weather Services |
| OFF | Off Shore Forecast |
| OPS | Office of Operational Systems |
| OST | Office of Science and Technology |
| OT&E | Operational Test and Evaluation |
| POC | Point of Contact |
| PRH | Pacific Region Headquarters |
| SEC | Systems Engineering Center |
| SEL | Severe Local Storm Public Watch Narrative |
| SLS | NWSFO/NWSO Convective Watch County Listing |
| SST | AWIPS Site Support Team |
| SVS | Severe Weather Statement |
| SPC | Storm Prediction Center |
| SRH | Southern Region Headquarters |
| SVR | System Verification Review |
| TRG | Test Review Group |
| TTR | Test Trouble Report |
| VTEC | Valid Time Event Code |
| UGC | Universal Geographic Code |
| Warngen | Warning Generation software application |
| WBC | Watch By County |
| WCL | Watch County List |
| WCM | Warning Coordination Meteorologist |
| WCN | Watch County Notification |

| | |
|------|--|
| WDTB | Warning Decision Training Branch |
| WFO | Weather Forecast Office |
| WOU | Watch Outline Update message |
| WRH | Western Region Headquarters |
| WSH | National Weather Service Headquarters |
| WWA | Watch, Warning, and Advisory Statements software application |

Appendix A VTEC IOT&E Test Case Scenarios

(Due to its size, this appendix will be packaged in a separate file.)

Appendix B VTEC Parameter and NWS Product Matrix

Table B-1: VTEC OT&E Matrix Checklist

Enter your initials in each applicable VTEC action code block to indicate your testing is complete

| Service Program | AWIPS ID | VTEC Phenomena Code (pp) | VTEC Significance Code (s) | Applicable VTEC action codes (aaa) | | | | | | | | | | |
|-----------------|----------|--------------------------|----------------------------|------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| | | | | NEW | CON | EXT | EXA | EXB | CAN | UPG | EXP | COR | ROU | |
| Winter Weather | WSW | BZ | A | | | | | | | | | | | |
| Winter Weather | WSW | BZ | W | | | | | | | | | | | |
| Winter Weather | WSW | WS | A | | | | | | | | | | | |
| Winter Weather | WSW | WS | W | | | | | | | | | | | |
| Winter Weather | WSW | WW | Y | | | | | | | | | | | |
| Winter Weather | WSW | SN | Y | | | | | | | | | | | |
| Winter Weather | WSW | HS | W | | | | | | | | | | | |
| Winter Weather | WSW | LE | A | | | | | | | | | | | |
| Winter Weather | WSW | LE | W | | | | | | | | | | | |
| Winter Weather | WSW | LE | Y | | | | | | | | | | | |
| Winter Weather | WSW | BS | Y | | | | | | | | | | | |
| Winter Weather | WSW | SB | Y | | | | | | | | | | | |
| Winter Weather | WSW | HP | W | | | | | | | | | | | |
| Winter Weather | WSW | IP | Y | | | | | | | | | | | |
| Winter Weather | WSW | IS | W | | | | | | | | | | | |
| Winter Weather | WSW | ZR | Y | | | | | | | | | | | |

| Service Program | AWIPS ID | VTEC Phenomena Code (pp) | VTEC Significance Code (s) | Applicable VTEC action codes (aaa) | | | | | | | | | | |
|---------------------------|----------|--------------------------|----------------------------|------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| | | | | NEW | CON | EXT | EXA | EXB | CAN | UPG | EXP | COR | ROU | |
| Winter Weather | WSW | WC | A | | | | | | | | | | | |
| Winter Weather | WSW | WC | W | | | | | | | | | | | |
| Winter Weather | WSW | WC | Y | | | | | | | | | | | |
| Non-Precipitation Weather | NPW | FZ | A | | | | | | | | | | | |
| Non-Precipitation Weather | NPW | FZ | W | | | | | | | | | | | |
| Non-Precipitation Weather | NPW | ZF | Y | | | | | | | | | | | |
| Non-Precipitation Weather | NPW | FR | Y | | | | | | | | | | | |
| Non-Precipitation Weather | NPW | EC | A | | | | | | | | | | | |
| Non-Precipitation Weather | NPW | EC | W | | | | | | | | | | | |
| Non-Precipitation Weather | NPW | WI | Y | | | | | | | | | | | |
| Non-Precipitation Weather | NPW | HW | A | | | | | | | | | | | |
| Non-Precipitation Weather | NPW | HW | W | | | | | | | | | | | |
| Non-Precipitation | NPW | LW | Y | | | | | | | | | | | |

| Service Program | AWIPS ID | VTEC Phenomena Code (pp) | VTEC Significance Code (s) | Applicable VTEC action codes (aaa) | | | | | | | | | | |
|---------------------------|----------|--------------------------|----------------------------|------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| | | | | NEW | CON | EXT | EXA | EXB | CAN | UPG | EXP | COR | ROU | |
| Weather | | | | | | | | | | | | | | |
| Non-Precipitation Weather | NPW | FG | Y | | | | | | | | | | | |
| Non-Precipitation Weather | NPW | SM | Y | | | | | | | | | | | |
| Non-Precipitation Weather | NPW | HT | Y | | | | | | | | | | | |
| Non-Precipitation Weather | NPW | EH | A | | | | | | | | | | | |
| Non-Precipitation Weather | NPW | EH | W | | | | | | | | | | | |
| Non-Precipitation Weather | NPW | DU | Y | | | | | | | | | | | |
| Non-Precipitation Weather | NPW | DS | W | | | | | | | | | | | |
| Non-Precipitation Weather | NPW | AF | Y | | | | | | | | | | | |
| Non-Precipitation Weather | NPW | TI | A | | | | | | | | | | | |
| Non-Precipitation Weather | NPW | TI | W | | | | | | | | | | | |
| Non-Precipitation Weather | NPW | HI | A | | | | | | | | | | | |

| Service Program | AWIPS ID | VTEC Phenomena Code (pp) | VTEC Significance Code (s) | Applicable VTEC action codes (aaa) | | | | | | | | | |
|---------------------------|----------|--------------------------|----------------------------|------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | | NEW | CON | EXT | EXA | EXB | CAN | UPG | EXP | COR | ROU |
| Non-Precipitation Weather | NPW | HI | W | | | | | | | | | | |
| Severe Weather | WCN | SV | A | | | | | | | | | | |
| Severe Weather | SVR | SV | W | | | | | | | | | | |
| Severe Weather | WCN | TO | A | | | | | | | | | | |
| Severe Weather | SVR | TO | W | | | | | | | | | | |
| Severe Weather | SVS | SV | W | | | | | | | | | | |
| Severe Weather | SVS | SV | W | | | | | | | | | | |
| Fire Weather | RFW | FW | A | | | | | | | | | | |
| Fire Weather | RFW | RF | W | | | | | | | | | | |
| Hydrology (WWA) | FFA | FF | A | | | | | | | | | | |
| Hydrology (WWA) | FFA | FL | A | | | | | | | | | | |
| Hydrology (WarnGen) | FFW | FF | W | | | | | | | | | | |
| Hydrology (WarnGen) | FFS | FF | W | | | | | | | | | | |
| Hydrology (WarnGen) | FFW | FF | W | | | | | | | | | | |
| Hydrology - areal (WWA) | FLW | FL | W | | | | | | | | | | |

| Service Program | AWIPS ID | VTEC Phenomena Code (pp) | VTEC Significance Code (s) | Applicable VTEC action codes (aaa) | | | | | | | | | |
|-------------------------|----------|--------------------------|----------------------------|------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | | NEW | CON | EXT | EXA | EXB | CAN | UPG | EXP | COR | ROU |
| Hydrology - areal (WWA) | FLS | FL | W | | | | | | | | | | |
| Hydrology - areal (WWA) | FLS | FL | Y | | | | | | | | | | |
| Hydrology (RiverPro) | FLW | FL | W | | | | | | | | | | |
| Hydrology (RiverPro) | FLS | FL | W | | | | | | | | | | |
| Marine (WarnGen) | SMW | MA | W | | | | | | | | | | |
| Marine (WarnGen) | MWS | MA | W | | | | | | | | | | |
| Marine (WWA) | CFW | LS | A | | | | | | | | | | |
| Marine (WWA) | CFW | LS | W | | | | | | | | | | |
| Marine (WWA) | CFW | CF | A | | | | | | | | | | |
| Marine (WWA) | CFW | CF | W | | | | | | | | | | |
| Marine (WWA) | CFW | SU | Y | | | | | | | | | | |

Updated: 05/13/04

Table B-2: VTEC Format Definition

P-VTEC Line /k.aaa.cccc.pp.s.####.yymmddThhnnZ_B-yymmddThhnnZ_E/
 H-VTEC Line /s.ic.yymmddThhnnZ_B.yymmddThhnnZ_C.yymmddThhnnZ_E.fr/

| | |
|--|---|
| P-VTEC Line Line k - Product/VTEC line Status (O, T, E, X) aaa - Action (NEW, CON, EXA, EXT, EXB, UPG, CAN, EXP, ROU, COR) cccc - Office ID pp - Phenomena (see table) s - Significance (W, A, Y, S - see table) #### - Event Tracking Number (ETN) | Date/Time Group yymmddThhnnZ _B - Event Beginning Date/Time yymmddThhnnZ _E - Event Ending Date/Time yy - year mm - month dd - day T - fixed time indicator hh - hour nn - minute Z - fixed UTC indicator |
|--|---|

| | | | |
|--|--|---|--|
| Product status (k) O Operational product T Test product E Experimental product X Experimental VTEC in Operational product | Action (aaa) NEW Event New CON Event Continued EXA Event Extended/Area EXT Event Extended/Time EXB Event Extended/Both Area and Time UPG Event upgraded CAN Event cancelled EXP Event expired ROU Event Routine COR Corrected (Event &/or VTEC) | Phenomena (pp) BZ Blizzard WS Winter Storm WW Winter Weather SN Snow HS Heavy Snow LE Lake Effect Snow BS Blowing/Drifting Snow SB Snow & Blowing Snow LB Lake Effect Snow and Blowing IP Sleet HP Heavy Sleet ZR Freezing Rain IS Ice Storm FZ Freeze FR Frost ZF Freezing Fog WC Wind Chill EC Extreme Cold WI Wind HW High Wind LW Lake Wind FG Dense Fog SM Dense Smoke HT Heat EH Excessive Heat DU Blowing Dust DS Dust Storm FL Flood FF Flash Flood SV Severe Thunderstorm TO Tornado FW Fire Weather RH Radiological Hazard VO Volcano AF Volcanic Ashfall AS Air Stagnation AV Avalanche MA Marine DU Blowing Dust GL Gale SR Storm HF Hurricane Force Wind TR Tropical Storm HU Hurricane TY Typhoon TI Inland Tropical Storm Wind HI Inland Storm Wind TS Tsunami MA Marine SC Small Craft GL Gale SR Storm HF Hurricane Force Wind LS Lakeshore Flood CF Coastal Flood UP Ice Accretion LO Low Water SU High Surf | Significance (s) W Warning A Watch Y Advisory S Statement |
|--|--|---|--|

| | |
|---|--|
| H-VTEC Line Line s - Flood Severity (N, 0, 1, 2, 3, U) ic - Immediate Cause (ER, SM, RS, DM, GO, IJ, IC, UU) fr - Flood Record (NO, NR, UU) | Date/Time Group yymmddThhnnZ _B - Flood Begin Date/Time yymmddThhnnZ _C - Flood Crest Date/Time yymmddThhnnZ _E - Flood End Date/Time |
|---|--|

| | |
|--|---|
| Flood Severity (s) N None 0 For Flash Flood and Areal Flood Warnings 1 Minor 2 Moderate 3 Major U Unknown | Immediate Cause (ic) ER Excessive Rainfall SM Snowmelt RS Rain and Snowmelt DM Dam or Levee Failure IJ Ice Jam GO Glacier-Dammed Lake Outburst IC Rain and/or Snowmelt and/or Ice Jam UU Unknown |
| Flood Timing yymmddThhnnZ _B Begin yymmddThhnnZ _C Crest yymmddThhnnZ _E End | Flood Record Status (fr) OO For Flash Flood and Areal Flood Warnings NO A record flood is not expected NR Near record or record flood expected UU Flood without a period of record to compare |

Appendix C Test Trouble Report

C.1 VTEC IOT&E Test Trouble Report Form

The following formatted form was used to capture test troubles during the VTEC IOT&E.

VTEC IOT&E/OT&E TEST TROUBLE REPORT TTR NO: O-/I-_____

1. DATE/TIME: _____ ORIGINATOR: _____ ATTACHMENTS: _____ pages
 2. LOCATION (Site AWIPS ID): _____ 3. AWIPS SOFTWARE RELEASE BUILD: _____
 4. TITLE/SUMMARY: _____
 5. TEST ACTIVITY: ___ IOT&E ___ OT&E
 6. VTEC PRODUCT GENERATED: (check one)
___ Real Product
___ Test Scenario Product _____ TEST PROCEDURE TITLE _____ STEP(S) NO.
 7. AWIPS PRODUCT ID. : _____ (3-letter Identifier)
 8. VTEC PHENOMENON and SIGNIFIGANCE CODE: _____ (pp.s)
 9. VTEC EVENT TRACKING NUMBER (ETN): _____ (#####)
 10. AWIPS PRODUCT GENERATION APPLICATION: (Check one)
___ WWA ___ WARNGEN ___ RIVERPRO
 11. SUBSYSTEM/COMPONENT: ___ VTEC String* ___ Mass Media Header ___ UGC Header
___ Other (circle one: Headliner, Comms, AWIPS Table)
- * VTEC Format: /k.aaa.cccc.pp.s.####.yymmddThhZ_B-yymmddThhnnZ_E
[circle appropriate group(s) affected] See attached VTEC Format Definitions.
12. REPEATABILITY: ___ Could Not Repeat ___ Didn't Try ___ One Time Occurrence ___ Sometimes ___ Always
 13. CONTACTED IOT&E/OT&E POC? ___ YES ___ NO
 14. (OT&E ONLY) NCF CONTACTED? ___ YES (_____ TROUBLE TICKET NO.) ___ NO (Why)

DESCRIPTION, CAUSE OF PROBLEM: (attach support documentation)

AUTHORIZING SIGNATURE: _____ DATE: _____

TRG PRIORITY: ___ Critical ___ Urgent ___ Routine ___ Watch Item ___ Potential Enhancement

PROBLEM CERTIFIED AS RELATED TO: _____ CON OPS ___ TRAINING ___ SOFTWARE

C.2 VTEC IOT&E Test Trouble Report Form Completion Instructions

This section contains instructions for completing the Test Trouble Reports during the IOT&E.

TTR NO. : Circle “I” for IOT&E and “O” for OT&E. Sequentially number the TTR (e.g., 1, 2, 3...).

1. Date/Time Discovered: Enter the month/day/ year the problem occurred
Originator: Enter Name of person writing the TTR
Attachments: Enter the number of pages of supporting information attached to the TTR
2. Location (Site AWIPS ID.): Enter the 3-letter AWIPS site identifier.
3. AWIPS Software Release Build: Enter the build number for the AWIPS software problem was found (e.g., B3.2)
4. Title/Summary: Enter a Title for the TTR or a short phrase which describes the problem (e.g., VTEC Event Tracking Number Problem).
5. Test Activity: Place a check mark or an “X” in the appropriate blank space indicating whether problem occurred in IOT&E or in OT&E.
6. VTEC Product Generated: Place a check mark or an “X” in the appropriate blank space indicating whether problem occurred in a *real operational product* or a *simulated product*. If the product was simulated, enter the *test procedure number* and the *number of the step or steps* in the procedure where problem occurred.
7. AWIPS Product ID.: Enter the 3-letter identifier of the affected product (e.g., SVR)
8. VTEC Phenomenon and Significance Code: Enter the 2-letter code for the weather type (e.g., FL = Flood) and the significance level (e.g. W = Warning) from the VTEC communication string
9. VTEC Event Tracking Number (ETN): Enter the 4-number code (e.g., 0001) assigned to keep track of the event during its lifetime from the VTEC communication string.
10. AWIPS Product Generation Application: Place a check mark or an “X” next to the appropriate software application name.
11. Subsystem/Component: Place a check mark or an “X” next to the appropriate name that identifies where the problem occurs.
If the problem is in the VTEC string, circle the appropriate code (s) in the VTEC communication code format presented on the form.
12. Repeatability: Place a check mark or an “X” in the blank space provided indicating the frequency the problem occurs.
13. IOT&E/OT&E POC Contacted ?: Place a check mark or an “X” in the blank next to the appropriate YES or NO.
14. (OT&E SITES ONLY) NCF Contacted? : Place a check mark or an “X in the blank next to appropriate YES or NO. If the answer is YES, then enter the Ticket Number given to you when you call the NCF. If the answer is NO, give a brief explanation why no call was made.

Description, Cause of Problem: Provide a concise description of the problem encountered. Attach the supporting documentation

Authorizing Signature and Date: The OCWWS service focal point in IOT&E and the OT&E Point of Contact (i.e., WCM) will sign and date the TTR here.

TRG Priority: The VTEC OT&E Test Review Group Chairperson or designee will place a check mark or an “X” in the blank to indicate the priority the TRG assigns the TTR.

Problem Certified as Related To: The VTEC OT&E Test Review Group Chairperson or designee will place a check mark or an “X” in the blank to indicate the appropriate area the TTR problem is assigned.

Status: Check the appropriate status of the TTR:

OPEN for TTRs which have not been fixed and verified;

WITHDRAWN for TTRs which the TRG has determined to be redundant to another TTR or which is deemed as not a valid problem; and,

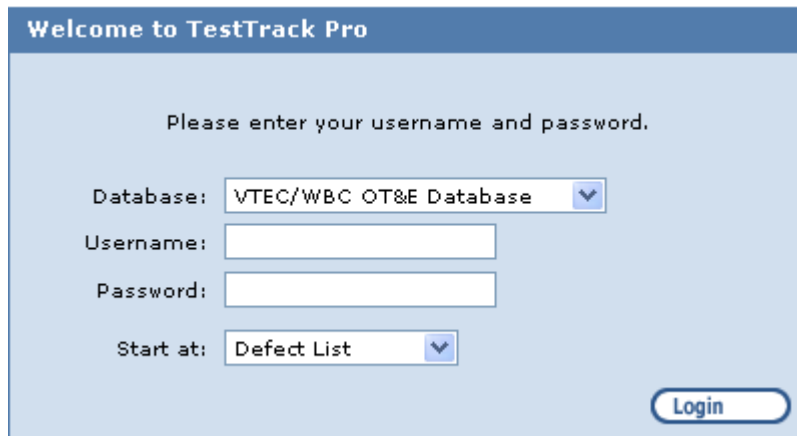
CLOSED for TTRs where the problem is fixed and the fix has been verified as satisfactory and has not caused other problems.

C.3 VTEC and WBC OT&E Test Trouble Report and Completion Instructions

For the VTEC and WBC OT&E, the Test Trouble Report form will be a web interface tool. The trouble report form and the instructions are provided below.

How to Login:

- Access the website <http://webdev1.weather.gov/ttweb/login.htm>



- Select the VTEC/WBC OT&E database.
- Enter username and password (will be provide by National Headquarters).
- The website will default to start at the “Defect List” page.
- Click Login.

Viewing the Defect List and Adding a TTR:

- The **Work with TTRs** page will open and all TTRs with their corresponding numbers are displayed.



| TTR | Number | Title/Summary | TRG Priority | DR Number | Status | Passed Verification Date | Failed Verific |
|--------------------------|--------|--|--------------|-----------|--|--------------------------|--|
| <input type="checkbox"/> | 1 | Headline Problem when expanding in area. | Urgent | 14358 | TRG Review, assigned to Cutrer, Laura; Paz, Lois | 08/02/04 | |
| <input type="checkbox"/> | 2 | Headline problem in EXB segment | Critical | 14441 | Assigned for Development, assigned to Cutrer, Laura; Paz, Lois | | There were tv first, related t passed v... |
| <input type="checkbox"/> | 3 | Blizzard Warning Headline missing Even Start Time | Urgent | 14361 | TRG Review, assigned to Cutrer, Laura; Paz, Lois | 08/02/04 | |
| <input type="checkbox"/> | 4 | Extra word in blizzard warning headline during ENA | Urgent | 14359 | TRG Review, assigned to Cutrer, Laura; Paz, Lois | 08/02/04 | |
| <input type="checkbox"/> | 5 | Error in Blizzard warning cancellation headline | Urgent | 14359 | TRG Review, assigned to Cutrer, Laura; Paz, Lois | 08/02/04 | |
| <input type="checkbox"/> | 6 | UGC expiration code bug/feature needed | Critical | 14415 | Assigned for Development, assigned to Cutrer, Laura; Paz, Lois | | VTEC end tim |
| <input type="checkbox"/> | 7 | Correction to product does not work at all | Critical | 14279 | TRG Review, assigned to Cutrer, Laura; Paz, Lois | 08/02/04 | |
| <input type="checkbox"/> | 8 | Lake effect snow and blowing snow advisory | Critical | 14233 | Assigned for Development, assigned to Cutrer, Laura; Paz, Lois | | No VTEC strin |
| <input type="checkbox"/> | 10 | Times in headlines include colons (eg. 6:30) | Routine | 14417 | TRG Review, assigned to Cutrer, Laura; Paz, Lois | 08/02/04 | |

- Click **ADD** to add a TTR

- The **Add TTR** page will open and the **Detail** tab is displayed.

- **Title/Summary:** Enter a Title for the TTR or a short phrase that describes the problem (e.g., VTEC Event Tracking Number Problem).
- **Disposition:** (TRG ONLY) Select the TTR disposition.
- **Test Activity:** Select OT&E.
- **Reference:** If the new TTR directly relates to a previous TTR, enter in the number of the previous TTR as a reference.
- **Entered By:** Defaulted to the current user or you can enter another user.
- **TRG Priority:** Select the TTR priority.
- **Severity:** Select the TTR severity.
- **Application:** Select the appropriate software application name.
- **Date Entered:** Defaulted to the current date or you can enter another date.
- **Site AWIPS ID:** Enter the 3-letter AWIPS identifier.
- **Software Build:** Enter the build number for the AWIPS software where problem was found (e.g. OB3.3)
- **Description:** Provide a concise description of the problem encountered.
- **Repeatability:** Indicate the frequency with which the problem occurs.
- **Attachments:** Upload supporting documentation as necessary (Browse and select file to upload. Attached file name will appear in Attachment pull-down menu).

- Click on the **Custom** tab to access additional VTEC and WBC fields.

The screenshot shows a software window with a 'Custom' tab selected. The window contains several input fields and checkboxes for error reporting. The fields include:

- VTEC Product Generated: A dropdown menu with '<not set>' selected.
- Test Procedure Title: A text input field with a 'Help' button.
- Test Step(s) No.: A text input field with a 'Help' button.
- Product ID (3-Letter ID): A text input field with a 'Help' button.
- Phenomenon Code: A text input field with a 'Help' button.
- Significance Code: A text input field with a 'Help' button.
- VTEC ETH (####): A text input field with a 'Help' button.
- Affected Comms. Component: A dropdown menu with '<not set>' selected.
- Other Error: A text input field with a 'Help' button.
- Watch By County (WBC) Error(s): A dropdown menu with '<not set>' selected.
- Brief Description of WBC Error: A text input field with a 'Help' button.
- OT&E POC Contacted?: A dropdown menu with '<not set>' selected.
- NCF Contacted?: A dropdown menu with '<not set>' selected.
- If Yes, provide trouble ticket #: A text input field with a 'Help' button.
- If No, why not?: A text input field with a 'Help' button.
- Problem Related to: A dropdown menu with '<not set>' selected.

 Below the dropdowns are several checkboxes:

- Product/VTEC ID Error (k)
- Action Code Error (aaa)
- Office ID Error (cccc)
- Phenomena Code Error (pp)
- Significance Code Error (s)
- ETH Error (####)
- Date/Time Error (yyymmddThhmm)
- Incorrect Segment Ordering
- Incorrect Counties Listed
- Unmatched Counties and WBC Codes
- Incorrect Wording of Product
- Incorrect Action Codes
- Incorrect Time Stamp
- Concept of Operations
- Training
- Software

 At the bottom right of the window are 'Save' and 'Cancel' buttons.

- VTEC Product Generated:** Select whether the problem occurred in a *Real Product* or a *Test Scenario Product*. If the product is a test scenario product, enter the Test Procedure Title and the Test Step(s) No. where the problem occurred.
- Product ID:** Enter the 3-letter identifier of the affected product (e.g., SVR)
- VTEC Phenomenon and Significance Code:** Enter the 2-letter code for the weather type (e.g., FL = Flood) and the significance level (e.g., W = Warning) from the VTEC communication string.
- VTEC ETN:** Enter the 4-number Event Tracking Number (e.g., 0001) assigned to keep track of the event during its lifetime from the VTEC communication string.
- Affected Communications Component:** Select the appropriate name that identifies where the problem occurs. If you selected “VTEC String”, then check the appropriate code(s) that appear below. If there is more than one Affected Comms. Component, specify the additional problem in Other Error.
- Watch By County Error(s):** Check the appropriate box(es) corresponding to the specific type of error that has occurred and provide a brief description of the problem as necessary.
- OT&E POC Contacted?:** Select YES or NO.
- NCF Contacted?:** Select YES or NO. If the answer is YES, then enter the trouble ticket number given to you when you call the NCF. If the answer is NO, give a brief explanation why no call was made.
- Problem Related To:** (TRG ONLY) Check the appropriate box(es) corresponding to the area the TTR problem is assigned.

- Click **Save** when you have completed the TTR and **Logout** to exit.

Appendix D VTEC OT&E Test Case Scenarios

D.1 VTEC OT&E Test Scenario Schedule

Table D-1: VTEC OT&E Test Scenario Schedule

| Group | Week 3 | Week4 | Group | Week1 | Week2 |
|---------|---------|------------|---------|------------|------------|
| Group 1 | | | Group 1 | | |
| TLH | SMW MAW | CFW SUY | DMX | SVR SVW | WSW LEA(2) |
| CHS | MWS MAW | NPW HIA | DTX | TOR TOW | WSW LEW(2) |
| MLB | CFW LSA | NPW HIW | TLH | SVS SVW-1 | WSW LEY(2) |
| SGX | CFW LSW | NPW TIA | JAX | SVS SVW-2 | NPW FZA(3) |
| JAX | CFW CFA | NPW TIW | MLB | FLW FLW | NPW FZW(3) |
| TBW | CFW CFW | | TBW | FLS FLW | NPW FRY(3) |
| Group 2 | | | Group 2 | | |
| VEF | NPW EHA | FFA FFA | AJK | WSW WCA | NPW HWA |
| FGZ | NPW EHW | FFW FFW | RIW | WSW WCV | NPW HWW |
| PSR | NPW HTY | FSW FFW | CYS | WSW WCY | NPW WIY |
| TWC | RFW FWA | FFA FLA | PHI | WSW BSY | NPW LWY |
| PHI | RFW RFW | FLW FLW(1) | BOI | | NPW FGY |
| DMX | NPW DSW | FLS FLW(1) | FGZ | | |
| Group 3 | | | Group 3 | | |
| CYS | WSW-BZA | WSW WSW | PSR | SVR SVW | NPW SMY |
| RIW | WSW BZW | WSW WWY | VEF | TOR TOW | NPW DUY |
| DTX | WSW WSA | WSW HPW | SGX | SVS SVW -1 | NPW AFY |
| PBP | WSW SNY | WSW IPY | PBP | SVS SVW-2 | NPW ECA(4) |
| AJK | WSW HSW | WSW ISW | CHS | FFW FFW | NPW ECW(4) |
| BOI | WSW SBY | WSW ZRY | TWC | FFS - FFW | |

- (1) RiverPro
- (2) DTX Only
- (3) TLH, JAX, MLB, TBW only
- (4) Alaska region sites only

D.2 VTEC OT&E Scenarios

The scenarios will be prepared for each OT&E site. The OCWWS service program area focal point will ensure each site will receive a tailored set of instructions. Sample site specific scenario package is included.

**Table D-2: VTEC OT&E Matrix Checklist
for
WFO: RIW**

Enter your initials in each applicable VTEC action code block to indicate your testing is complete

| Date of Test | Test Scenerio | Software Used | AWIPS ID | VTEC Phenomena Code (pp) | VTEC Significance Code (s) | Applicable VTEC action codes (aaa) | | | | | | | | |
|----------------|---------------|---------------|----------|--------------------------|----------------------------|------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | | | | NEW | CON | EXT | EXA | EXB | CAN | UPG | EXP | COR |
| Aug 30 - Sep 3 | WCW | WWA | WSW | WC | W | | | | | | | | | |
| Sep 6 - 10 | HWW | WWA | NPW | HW | W | | | | | | | | | |
| Sep 13 - 17 | BZW | WWA | WSW | BZ | W | | | | | | | | | |
| Sep 20 - 24 | WWY | WWA | WSW | WW | Y | | | | | | | | | |

Updated: 08/11/04

TEST #WCW Wind Chill Warning

Application Software: WWA

Overall Outcome: Pass [] Fail []

TESTED BY: _____ DATE: 8/31/04 ITERATION: _____ Time Start: _____ Time End: _____

The purpose of this test is to verify operational issuance of a Wind Chill Warning for multiple counties, and properly apply the seven VTEC action codes. The headline information will match the information provided in the VTEC string.

| Step | Action | Expected Results | Comments | Pass/Fail |
|------|--|---|----------|-----------|
| 1 | Issue a new Wind Chill Warning for 10 zones. Action code: NEW Zones: 001>010 ETN: 0001 Issuance Date: Tue Aug 31 HazBegins: Now HazDuration: 14 Hrs HazExpires: t + 14 hrs Wed Sep 1 ProdExp: 8 PM Tue Aug 31 | AWIPS ID: WSWRIW UGC: stZ001>010-010200- VTEC String: /T.NEW.KRIW.WC.W.0001.040831ThhnnZ-040901ThhnnZ/ | | |
| | | Headline: ...WIND CHILL WARNING IN EFFECT UNTIL x AM MDT WEDNESDAY... | | |
| 2 | Update the Wind Chill Warning. Action code: CON Zones: 001>010 ETN: 0001 HazBegins: Do not edit HazDuration: Do not edit HazExpires: Do not edit ProdExp: 8 PM Tue Aug 31 | AWIPS ID: WSWRIW UGC: stZ001>010-010200- VTEC String: /T.CON.KRIW.WC.W.0001.000000T0000Z-040901ThhnnZ/ | | |
| | | Headline: ...WIND CHILL WARNING REMAINS IN EFFECT UNTIL x AM MDT WEDNESDAY... | | |

| Step | Action | Expected Results | Comments | Pass/Fail | |
|------|--|---|----------|-----------|--|
| 3 | Extend the end time of the Wind Chill Warning. Action code: EXT Zones: 001>010 ETN: 0001 HazBegins: Do not edit HazDuration: <u>16 :00 Hrs</u> HazExpires: <u>t + 16 hrs Wed Sep 1</u> ProdExp: 8 PM Tue Aug 31 | AWIPS ID: WSWRIW UGC: stZ001>010-010200- VTEC String: /T.EXT.KRIW.WC.W.0001.000000T0000Z-040901ThhnnZ/ Headline: ...WIND CHILL WARNING EXTENDED UNTIL x AM MDT WEDNESDAY... | | | |
| 4 | Shorten the Wind Chill Warning end time Action code: EXT Zones: 001>010 ETN: 0001 HazBegins: Do not edit HazDuration: <u>14 :00 Hrs</u> HazExpires: <u>t + 14 hrs Wed Sep 1</u> ProdExp: 8 PM Tue Aug 31 | AWIPS ID: WSWRIW UGC: stZ001>010-010200- VTEC String: /T.EXT.KRIW.WC.W.0001.000000T0000Z-040901ThhnnZ/ Headline: ...WIND CHILL WARNING REMAINS IN EFFECT UNTIL x AM MDT WEDNESDAY... | | | |
| 5 | Expand the Wind Chill Warning to include five additional zones. Action codes: EXA & CON Add Five Zones: 011>015 ETN: 0001 HazBegins: Do not edit HazDuration: Do not edit HazExpires: Do not edit ProdExp: 8 PM Tue Aug 31 | <u>Segment #1 will contain the following information:</u> UGC: stZ011>015-010200- VTEC String: /T.EXA.KRIW.WC.W.0001.000000T0000Z-040901ThhnnZ/ Headline: ...WIND CHILL WARNING IN EFFECT UNTIL x AM MDT WEDNESDAY... <u>Segment #2 will contain the following information:</u> UGC: stZ001>010-010200- VTEC String: /T.CON.KRIW.WC.W.0001.000000T0000Z-040901ThhnnZ/ | | | |

| Step | Action | Expected Results | Comments | Pass/Fail | |
|------|---|--|----------|-----------|--|
| | | Headline: ...WIND CHILL WARNING REMAINS IN EFFECT UNTIL x AM MDT WEDNESDAY... | | | |
| 6 | Expand the Wind Chill Warning area to include five additional zones, and extend the time of the entire Wind Chill Warning. Action codes: EXB & EXT Add Five Zones: 016>020 ETN: 0001 HazBegins: Do not edit HazDuration: <u>16 :00 Hrs</u> HazExpires: <u>t + 16 hrs Wed Sep 1</u> ProdExp: 8 PM Tue Aug 31 | AWIPS ID: WSWRIW <u>Segment #1 will contain the following information:</u> UGC: stZ016>020-010200- VTEC String: /T.EXB.KRIW.WC.W.0001.000000T0000Z-040901ThhnnZ/ Headline: ...WIND CHILL WARNING EXTENDED UNTIL x AM MDT WEDNESDAY... <u>Segment #2 will contain the following information:</u> UGC: stZ001>015-010200- VTEC String: /T.EXT.KRIW.WC.W.0001.000000T0000Z-040901ThhnnZ/ Headline: ...WIND CHILL WARNING EXTENDED UNTIL x AM MDT WEDNESDAY... | | | |
| 7 | Cancel a portion of the Wind Chill Warning. Action codes: CAN & CON Cancel Five Zones: 016>020 ETN: 0001 HazBegins: Do not edit HazDuration: Do not edit HazExpires: Do not edit ProdExp: Segment 1: <u>t+1 hr Tue Aug 31</u> Segment 2: 8 PM Tue Aug 31 | AWIPS ID: WSWRIW <u>Segment #1 will contain the following information:</u> UGC: stZ016>020-31hhmm- VTEC String: /T.CAN.KRIW.WC.W.0001.000000T0000Z-040901ThhnnZ/ Headline: ...WIND CHILL WARNING IS CANCELLED... | | | |

| Step | Action | Expected Results | Comments | Pass/Fail | |
|------|--|---|----------|-----------|--|
| | | <u>Segment #2 will contain the following information:</u> UGC: stZ001>015-010200- VTEC String: /T.CON.KRIW.WC.W.0001.000000T0000Z-040901ThhnnZ/ | | | |
| | | Headline: ...WIND CHILL WARNING REMAINS IN EFFECT UNTIL x AM MDT WEDNESDAY... | | | |
| 8 | Downgrade Wind Chill Warning to a Wind Chill Advisory for five zones. <u>Segment 1 Information:</u> Downgrade Action codes: CAN & NEW Zones: 011>015 ETN: 0001 HazBegins: Now HazDuration: <u>14 Hrs</u> HazExpires: <u>t + 14 hrs Wed Sep 1</u> ProdExp: 8 PM Tue Aug 31 <u>Segment 2 Information:</u> Continue warning Action codes: CON Zones: 001>010 ETN: 0001 HazBegins: Do not edit HazDuration: Do not edit HazExpires: Do not edit ProdExp: 8 PM Tue Aug 31 | AWIPS ID: WSWRIW <u>Segment #1 will contain the following information:</u> UGC: stZ011>015-010200- Two VTEC Strings: /T.CAN.KRIW.WC.W.0001.000000T0000Z-040901ThhnnZ/ /T.NEW.KRIW.WC.Y.0001.040831ThhnnZ-040901ThhnnZ/ | | | |
| | | Two Headlines: ...WIND CHILL WARNING IS CANCELLED... ...WIND CHILL ADVISORY IN EFFECT UNTIL x AM MDT WEDNESDAY... | | | |
| | | <u>Segment #2 will contain the following information:</u> UGC: stZ001>010-010200- VTEC String: /T.CON.KRIW.WC.W.0001.000000T0000Z-040901ThhnnZ/ | | | |
| | | Headline: ...WIND CHILL WARNING REMAINS IN EFFECT UNTIL x AM MDT WEDNESDAY... | | | |

| Step | Action | Expected Results | Comments | Pass/Fail | |
|------|---|---|----------|-----------|--|
| 9 | Issue a new Wind Chill Warning for 5 zones. Check for proper incrementing of ETN, and if headline time is rounded to the nearest 30 minutes. Action code: NEW Zones: 016>020 ETN: 0002 HazBegins: 6 PM Tue Aug 31 HazDuration: <u>12:40 hrs</u> HazExpires: <u>6:40 AM Wed Sep 1</u> ProdExp: 6 PM Tue Aug 31 | AWIPS ID: WSWRIW UGC: stZ016>020-010200- VTEC String: /T.NEW.KRIW.WC.W.0002.040831T2200Z-040901T1040Z/ | | | |
| | | Headline: ...WIND CHILL WARNING IN EFFECT FROM 6 PM THIS EVENING TO 630 AM MDT WEDNESDAY... | | | |
| 10 | Correct a typo in the previously issued Wind Chill Warning. Action code: COR Zones: 016>020 ETN: 0002 HazBegins: 6 PM Tue Aug 31 HazDuration: 12:40 hrs HazExpires: 6:40 AM Wed Sep 1 ProdExp: 6 PM Tue Aug 31 | AWIPS ID: WSWRIW UGC: stZ016>020-010200- VTEC String: /T.COR.KRIW.WC.W.0002.040831T2200Z-040901T1040Z/ | | | |
| | | Headline: ...WIND CHILL WARNING IN EFFECT FROM 6 PM THIS EVENING TO 630 AM MDT WEDNESDAY... | | | |

TEST #HWW High Wind Warning

Application Software: WWA

Overall Outcome: Pass [] Fail []

TESTED BY: _____ DATE: 9/8/04 ITERATION: _____ Time Start: _____ Time End: _____

The purpose of this test is to verify operational issuance of a High Wind Warning for multiple counties, and properly apply the seven VTEC action codes. The headline information will match the information provided in the VTEC string.

| Step | Action | Expected Results | Comments | Pass/Fail | |
|------|---|---|----------|-----------|--|
| 1 | Issue a new High Wind Warning for 10 zones. Action code: NEW Zones: 001>010 ETN: 0001 Issuance Date: Wed Sep 8 HazBegins: 8 AM Thu Sep 9 HazDuration: 18 Hrs HazExpires: 2 AM Fri Sep 10 ProdExp: 6 PM Wed Sep 8 | AWIPS ID: NPWRIW UGC: stZ001>010-090000- VTEC String: /T.NEW.KRIW.HW.W.0001.040506T1200Z-040910T0800Z/ Headline: ...HIGH WIND WARNING IN EFFECT FROM 8 AM THURSDAY TO 2 AM MDT FRIDAY... | | | |
| 2 | Update the High Wind Warning. Action code: CON Zones: 001>010 ETN: 0001 HazBegins: 8 AM Thu Sep 9 HazDuration: 18 Hrs HazExpires: 2 AM Fri Sep 10 ProdExp: 6 PM Wed Sep 8 | AWIPS ID: NPWRIW UGC: stZ001>010-090000- VTEC String: /T.CON.KRIW.HW.W.0001.040909T1400Z-040910T0800Z/ Headline: ...HIGH WIND WARNING REMAINS IN EFFECT FROM 8 AM THURSDAY TO 2 AM MDT FRIDAY... | | | |

| Step | Action | Expected Results | Comments | Pass/Fail | |
|------|--|--|----------|-----------|--|
| 3 | Extend the end time of the High Wind Warning. Action code: EXT Zones: 001>010 ETN: 0001 HazBegins: 8 AM Thu Sep 9 HazDuration: <u>24 hrs</u> HazExpires: <u>8 AM Fri Sep 10</u> ProdExp: 6 PM Wed Sep 8 | AWIPS ID: NPWRIW UGC: stZ001>010-090000- VTEC String: /T.EXT.KRIW.HW.W.0001.040909T1400Z-040910T1400Z/ Headline: ...HIGH WIND WARNING EXTENDED FROM 8 AM THURSDAY TO 8 AM MDT FRIDAY... | | | |
| 4 | Shorten the High Wind Warning end time Action code: EXT Zones: 001>010 ETN: 0001 HazBegins: <u>2 AM Thu Sep 9</u> HazDuration: 24 hrs HazExpires: <u>2 AM Fri Sep 10</u> ProdExp: 6 PM Wed Sep 8 | AWIPS ID: NPWRIW UGC: stZ001>010-090000- VTEC String: /T.EXT.KRIW.HW.W.0001.040909T0800Z-040910T0800Z/ Headline: ...HIGH WIND WARNING REMAINS IN EFFECT FROM 2 AM THURSDAY TO 2 AM MDT FRIDAY... | | | |
| 5 | Expand the High Wind Warning to include five additional zones. Action codes: EXA & CON Add Five Zones: 011>015 ETN: 0001 HazBegins: 2 AM Thu Sep 9 HazDuration: 24 hrs HazExpires: 2 AM Fri Sep 10 ProdExp: 6 PM Wed Sep 8 | <u>Segment #1 will contain the following information:</u> UGC: stZ011>015-090000- VTEC String: /T.EXA.KRIW.HW.W.0001.040909T0800Z-040910T0800Z/ Headline: ...HIGH WIND WARNING IN EFFECT FROM 2 AM THURSDAY TO 2 AM MDT FRIDAY... <u>Segment #2 will contain the following information:</u> UGC: stZ011>015-090000- VTEC String: /T.CON.KRIW.HW.W.0001.040909T0800Z-040910T1400Z/ Headline: ...HIGH WIND WARNING REMAINS IN EFFECT FROM 2 AM THURSDAY TO 2 AM MDT FRIDAY... | | | |

| Step | Action | Expected Results | Comments | Pass/Fail | |
|------|---|---|----------|-----------|--|
| 6 | Expand the High Wind Warning area to include five additional zones, and extend the time of the entire High Wind Warning. Action codes: EXB & EXT Add Five Zones: 016>020 ETN: 0001 HazBegins: <u>8 AM Thu Sep 9</u> HazDuration: <u>24 hrs</u> HazExpires: <u>8 AM Fri Sep 10</u> ProdExp: 6 PM Wed Sep 8 | AWIPS ID: NPWRIW <u>Segment #1 will contain the following information:</u> UGC: stZ016>020-090000- VTEC String: /T.EXB.KRIW.HW.W.0001.040909T1400Z-040910T1400Z/ Headline: ...HIGH WIND WARNING IN EFFECT FROM 8 AM THURSDAY TO 8 AM MDT FRIDAY... <u>Segment #2 will contain the following information:</u> UGC: stZ016>020-090000- VTEC String: /T.EXT.KRIW.HW.W.0001.040909T1400Z-040910T1400Z/ Headline: ...HIGH WIND WARNING EXTENDED FROM 8 AM THURSDAY TO 8 AM MDT FRIDAY... | | | |
| 7 | Cancel a portion of the High Wind Warning. Action codes: CAN & CON Cancel Five Zones: 016>020 ETN: 0001 HazBegins: 8 AM Thu Sep 9 HazDuration: 24 hrs HazExpires: 8 AM Fri Sep 10 ProdExp: Segment 1: <u>t+1 hr</u> Wed Sep 8 Segment 2: 6 PM Wed Sep 8 | AWIPS ID: NPWRIW <u>Segment #1 will contain the following information:</u> UGC: stZ016>020-04hhmm- VTEC String: /T.CAN.KRIW.HW.W.0001.040909T1400Z-040910T1400Z/ Headline: ...HIGH WIND WARNING IS CANCELLED... <u>Segment #2 will contain the following information:</u> UGC: stZ001>015-090000- VTEC String: /T.CON.KRIW.HW.W.0001.040909T1400Z-040910T1400Z/ | | | |

| Step | Action | Expected Results | Comments | Pass/Fail | |
|------|---|--|----------|-----------|--|
| | | Headline: ...HIGH WIND WARNING REMAINS IN EFFECT FROM 8 AM THURSDAY TO 8 AM MDT FRIDAY... | | | |
| 8 | Downgrade High Wind Warning to Wind Advisory for five zones. Action codes: CAN & NEW & CON Zones: 011>015 ETN: 0001 HazBegins: 8 AM Thu Sep 9 HazDuration: 24 hrs HazExpires: 8 AM Fri Sep 10 ProdExp: 6 PM Wed Sep 8 | AWIPS ID: NPWRIW <u>Segment #1 will contain the following information:</u> UGC: stZ011>015-090000- Two VTEC Strings: /T.CAN.KRIW.HH.W.0001.040909T1400Z-040910T1400Z/ /T.NEW.KRIW.WI.Y.0001.040909T1400Z-040910T1400Z/ Two Headlines: ...HIGH WIND WARNING IS CANCELLED... ...WIND ADVISORY IN EFFECT FROM 8 AM THURSDAY TO 8 AM MDT FRIDAY... <u>Segment #2 will contain the following information:</u> UGC: stZ001>010-090000- VTEC String: /T.CON.KRIW.HW.W.0001.040909T1400Z-040910T1400Z/ Headline: ...HIGH WIND WARNING REMAINS IN EFFECT FROM 8 AM THURSDAY TO 8 AM MDT FRIDAY... | | | |
| 9 | Change the High Wind Warning to a Dust Storm Warning for five zones. Action codes: CAN & NEW & CON Zones: 006>010 ETN: 0001 HazBegins: 8 AM Thu Sep 9 HazDuration: 24 hrs HazExpires: 8 AM Fri Sep 10 ProdExp: 6 PM Wed Sep 8 | AWIPS ID: WSWRIW <u>Segment #1 will contain the following information:</u> UGC: stZ006>010-090000- Two VTEC Strings: /T.CAN.KRIW.HW.W.0001.040909T1400Z-040910T1400Z/ /T.NEW.KRIW.DS.W.0001.040909T1400Z-040910T1400Z/ | | | |

| Step | Action | Expected Results | Comments | Pass/Fail | |
|------|--|--|----------|-----------|--|
| | | Two Headlines: ...HIGH WIND WARNING IS CANCELLED... ...DUST STORM WARNING IN EFFECT FROM 8 AM THURSDAY TO 8 AM MDT FRIDAY... | | | |
| | | <u>Segment #2 will contain the following information:</u> UGC: stZ001>005-090000- VTEC String: /T.CON.KRIW.HW.W.0001.040909T1400Z-040910T1400Z/ | | | |
| | | Headline: ...HIGH WIND WARNING REMAINS IN EFFECT FROM 8 AM THURSDAY TO 8 AM MDT FRIDAY... | | | |
| 10 | Issue a new High Wind Warning for 5 zones. Check for proper incrementing of ETN, and if headline time is rounded to the nearest 30 minutes. Action code: NEW Zones: 016>020 ETN: 0002 HazBegins: 6 PM Wed Sep 8 HazDuration: <u>13:40 hrs</u> HazExpires: <u>7:40 AM Thu Sep 9</u> ProdExp: 6 PM Wed Sep 8 | AWIPS ID: NPWRIW UGC: stZ016>020-090000- VTEC String: /T.NEW.KRIW.HW.W.0002.040909T0000Z-040909T1340Z/ | | | |
| | | Headline: ...HIGH WIND WARNING IN EFFECT FROM 6 PM THIS EVENING TO 730 AM MDT THURSDAY... | | | |

| Step | Action | Expected Results | Comments | Pass/Fail |
|------|---|---|----------|-----------|
| 11 | Correct a typo in the previously issued High Wind Warning. Action code: COR Zones: 016>020 ETN: 0002 HazBegins: 6 PM Wed Sep 8 HazDuration: 13:40 hrs HazExpires: 7:40 AM Thu Sep 9 ProdExp: 6 PM Wed Sep 8 | AWIPS ID: NPWRIW UGC: stZ016>020-090000- VTEC String: /T.COR.KRIW.HW.W.0002.040909T0000Z-040909T1340Z/ Headline: ...HIGH WIND WARNING IN EFFECT FROM 6 PM THIS EVENING TO 730 AM MDT THURSDAY... | | |

TEST #BZW Blizzard Warning

Application Software: WWA

Overall Outcome: Pass [] Fail []

TESTED BY: _____ DATE: 9/14/04 ITERATION: ____ Time Start: _____ Time End: _____

| The purpose of this test is to verify operational issuance of a Blizzard Warning for multiple counties, and properly apply the seven VTEC action codes. The headline information will match the information provided in the VTEC string. | | | | |
|--|---|---|----------|-----------|
| Step | Action | Expected Results | Comments | Pass/Fail |
| 1 | Issue a new Blizzard Warning for 10 zones. Action code: NEW Zones: 001>010 ETN: 0001 Issuance Date: Tue Sep 14 HazBegins: 8 AM Wed Sep 15 HazDuration: 18 Hrs HazExpires: 2 AM Thu Sep 16 ProdExp: 6 PM Tue Sep 14 | AWIPS ID: WSWRIW UGC: stZ001>010-150000- VTEC String: /T.NEW.KRIW.BZ.W.0001.040915T1400Z-040916T0800Z/ Headline: ...BLIZZARD WARNING IN EFFECT FROM 8 AM WEDNESDAY TO 2 AM MDT THURSDAY... | | |

| Step | Action | Expected Results | Comments | Pass/Fail | |
|------|--|---|----------|-----------|--|
| 2 | Update the Blizzard Warning. Action code: CON Zones: 001>010 ETN: 0001 HazBegins: 8 AM Wed Sep 15 HazDuration: 18 Hrs HazExpires: 2 AM Thu Sep 16 ProdExp: 6 PM Tue Sep 14 | AWIPS ID: WSWRIW UGC: stZ001>010-150000- VTEC String: /T.CON.KRIW.BZ.W.0001.040915T1400Z-040916T0800Z/ Headline: ...BLIZZARD WARNING REMAINS IN EFFECT FROM 8 AM WEDNESDAY TO 2 AM MDT THURSDAY... | | | |
| 3 | Extend the end time of the Blizzard Warning. Action code: EXT Zones: 001>010 ETN: 0001 HazBegins: 8 AM Wed Sep 15 HazDuration: <u>24 hrs</u> HazExpires: <u>8 AM Thu Sep 16</u> ProdExp: 6 PM Tue Sep 14 | AWIPS ID: WSWRIW UGC: stZ001>010-150000- VTEC String: /T.EXT.KRIW.BZ.W.0001.040915T1400Z-040916T1400Z/ Headline: ...BLIZZARD WARNING EXTENDED FROM 8 AM WEDNESDAY TO 8 AM MDT THURSDAY... | | | |
| 4 | Shorten the Blizzard Warning end time Action code: EXT Zones: 001>010 ETN: 0001 HazBegins: <u>2 AM Wed Sep 15</u> HazDuration: 24 hrs HazExpires: <u>2 AM Thu Sep 16</u> ProdExp: 6 PM Tue Sep 14 | AWIPS ID: WSWRIW UGC: stZ001>010-150000- VTEC String: /T.EXT.KRIW.BZ.W.0001.040505T0600Z-040916T0800Z/ Headline: ...BLIZZARD WARNING REMAINS IN EFFECT FROM 2 AM WEDNESDAY TO 2 AM MDT THURSDAY... | | | |

| Step | Action | Expected Results | Comments | Pass/Fail | |
|------|---|---|----------|-----------|--|
| 5 | Expand the Blizzard Warning to include five additional zones. Action codes: EXA & CON Add Five Zones: 011>015 ETN: 0001 HazBegins: 2 AM Wed Sep 15 HazDuration: 24 hrs HazExpires: 2 AM Thu Sep 16 ProdExp: 6 PM Tue Sep 14 | <p><u>Segment #1 will contain the following information:</u> UGC: stZ011>015-150000- VTEC String: /T.EXA.KRIW.BZ.W.0001.040505T0600Z-040916T0800Z/</p> <p>Headline: ...BLIZZARD WARNING IN EFFECT FROM 2 AM WEDNESDAY TO 2 AM MDT THURSDAY...</p> <p><u>Segment #2 will contain the following information:</u> UGC: stZ011>015-150000- VTEC String: /T.CON.KRIW.BZ.W.0001.040505T0600Z-040916T0800Z/</p> <p>Headline: ...BLIZZARD WARNING REMAINS IN EFFECT FROM 2 AM WEDNESDAY TO 2 AM MDT THURSDAY...</p> | | | |
| 6 | Expand the Blizzard Warning area to include five additional zones, and extend the time of the entire Blizzard Warning. Action codes: EXB & EXT Add Five Zones: 016>020 ETN: 0001 HazBegins: <u>8 AM Wed Sep 15</u> HazDuration: <u>24 hrs</u> HazExpires: <u>8 AM Thu Sep 16</u> ProdExp: 6 PM Tue Sep 14 | <p>AWIPS ID: WSWRIW</p> <p><u>Segment #1 will contain the following information:</u> UGC: stZ016>020-150000- VTEC String: /T.EXB.KRIW.BZ.W.0001.040915T1400Z-040916T1400Z/</p> <p>Headline: ...BLIZZARD WARNING IN EFFECT FROM 8 AM WEDNESDAY TO 8 AM MDT THURSDAY...</p> <p><u>Segment #2 will contain the following information:</u> UGC: stZ016>020-150000- VTEC String: /T.EXT.KRIW.BZ.W.0001.040915T1400Z-040916T1400Z/</p> | | | |

| Step | Action | Expected Results | Comments | Pass/Fail | |
|------|--|--|----------|-----------|--|
| | | Headline: ...BLIZZARD WARNING EXTENDED FROM 8 AM WEDNESDAY TO 8 AM MDT THURSDAY... | | | |
| 7 | Cancel a portion of the Blizzard Warning. Action codes: CAN & CON Cancel Five Zones: 016>020 ETN: 0001 HazBegins: 8 AM Wed Sep 15 HazDuration: 24 hrs HazExpires: 8 AM Thu Sep 16 ProdExp: Segment 1: t+1 hr Tue Sep 14 Segment 2: 6 PM Tue Sep 14 | AWIPS ID: WSWRIW <u>Segment #1 will contain the following information:</u> UGC: stZ016>020-04hhmm- VTEC String: /T.CAN.KRIW.BZ.W.0001.040915T1400Z-040916T1400Z/ Headline: ...BLIZZARD WARNING IS CANCELLED... <u>Segment #2 will contain the following information:</u> UGC: stZ001>015-150000- VTEC String: /T.CON.KRIW.BZ.W.0001.040915T1400Z-040916T1400Z/ Headline: ...BLIZZARD WARNING REMAINS IN EFFECT FROM 8 AM WEDNESDAY TO 8 AM MDT THURSDAY... | | | |
| 8 | Downgrade Blizzard Warning to a Snow and Blowing Snow Advisory for five zones. Action codes: CAN & NEW & CON Zones: 011>015 ETN: 0001 HazBegins: 8 AM Wed Sep 15 HazDuration: 24 hrs | AWIPS ID: WSWRIW <u>Segment #1 will contain the following information:</u> UGC: stZ011>015-150000- Two VTEC Strings: /T.CAN.KRIW.BZ.W.0001.040915T1400Z-040916T1400Z/ /T.NEW.KRIW.SB.Y.0001.040915T1400Z-040916T1400Z/ | | | |

HazExpires: 8 AM Thu Sep 16
 ProdExp: 6 PM Tue Sep 14

| Step | Action | Expected Results | Comments | Pass/Fail | |
|------|---|--|----------|-----------|--|
| | | Two Headlines: ...BLIZZARD WARNING IS CANCELLED... ...SNOW AND BLOWING SNOW ADVISORY IN EFFECT FROM 8 AM WEDNESDAY TO 8 AM MDT THURSDAY... | | | |
| | | <u>Segment #2 will contain the following information:</u> UGC: stZ001>010-150000- VTEC String: /T.CON.KRIW.BZ.W.0001.040915T1400Z-040916T1400Z/ | | | |
| | | Headline: ...BLIZZARD WARNING REMAINS IN EFFECT FROM 8 AM WEDNESDAY TO 8 AM MDT THURSDAY... | | | |
| 9 | Issue a new Blizzard Warning for 5 zones. Check for proper incrementing of ETN, and if headline time is rounded to the nearest 15 minutes. Action code: NEW Zones: 016>020 ETN: 0002 HazBegins: 6 PM Tue Sep 14 HazDuration: <u>12:25 hrs</u> HazExpires: <u>6:25 AM Wed Sep 15</u> ProdExp: 6 PM Tue Sep 14 | AWIPS ID: WSWRIW UGC: stZ016>020-150000- VTEC String: /T.NEW.KRIW.BZ.W.0002.040504T2200Z-040505T1025Z/ | | | |
| | | Headline: ...BLIZZARD WARNING IN EFFECT FROM 6 PM THIS EVENING TO 630 AM MDT WEDNESDAY... | | | |

| Step | Action | Expected Results | Comments | Pass/Fail | |
|------|--|--|----------|-----------|--|
| 10 | Correct a typo in the previously issued Blizzard Warning. Action code: COR Zones: 016>020 ETN: 0002 HazBegins: 6 PM Tue Sep 14 HazDuration: 12:25 hrs HazExpires: 6:25 AM Wed Sep 15 ProdExp: 6 PM Tue Sep 14 | AWIPS ID: WSWRIW UGC: stZ016>020-150000- VTEC String: /T.COR.KRIW.BZ.W.0002.040504T2200Z-040505T1025Z/ Headline: ...BLIZZARD WARNING IN EFFECT FROM 6 PM THIS EVENING TO 630 AM MDT WEDNESDAY... | | | |
| | | | | | |

TEST #WWY Winter Weather Advisory

Application Software: WWA

Overall Outcome: Pass [] Fail []

TESTED BY: _____ DATE: 9/21/04 ITERATION: _____ Time Start: _____ Time End: _____

The purpose of this test is to verify operational issuance of a Winter Weather Advisory for multiple counties, and properly apply the seven VTEC action codes. The headline information will match the information provided in the VTEC string.

| Step | Action | Expected Results | Comments | Pass/Fail |
|------|--|---|----------|-----------|
| 1 | Issue a new Winter Weather Advisory for 10 zones. Action code: NEW Zones: 001>010 ETN: 0001 Issuance Date: Tue Sep 21 HazBegins: 8 AM Wed Sep 22 HazDuration: 18 Hrs HazExpires: 2 AM Thu Sep 23 ProdExp: 6 PM Tue Sep 21 | AWIPS ID: WSWRIW UGC: stZ001>010-220000- VTEC String: /T.NEW.KRIW.WW.Y.0001.040922T1400Z-040923T0800Z/ | | |
| | | Headline: ...WINTER WEATHER ADVISORY IN EFFECT FROM 8 AM WEDNESDAY TO 2 AM MDT THURSDAY... | | |
| 2 | Update the Winter Weather Advisory. Action code: CON Zones: 001>010 ETN: 0001 HazBegins: 8 AM Wed Sep 22 HazDuration: 18 Hrs HazExpires: 2 AM Thu Sep 23 ProdExp: 6 PM Tue Sep 21 | AWIPS ID: WSWRIW UGC: stZ001>010-220000- VTEC String: /T.CON.KRIW.WW.Y.0001.040922T1400Z-040923T0800Z/ | | |
| | | Headline: ...WINTER WEATHER ADVISORY REMAINS IN EFFECT FROM 8 AM WEDNESDAY TO 2 AM MDT THURSDAY... | | |

| Step | Action | Expected Results | Comments | Pass/Fail | |
|------|--|---|----------|-----------|--|
| 3 | Extend the end time of the Winter Weather Advisory. Action code: EXT Zones: 001>010 ETN: 0001 HazBegins: 8 AM Wed Sep 22 HazDuration: <u>24 hrs</u> HazExpires: <u>8 AM Thu Sep 23</u> ProdExp: 6 PM Tue Sep 21 | AWIPS ID: WSWRIW UGC: stZ001>010-220000- VTEC String: /T.EXT.KRIW.WW.Y.0001.040922T1400Z-040923T1400Z/ Headline: ...WINTER WEATHER ADVISORY EXTENDED FROM 8 AM WEDNESDAY TO 8 AM MDT THURSDAY... | | | |
| 4 | Shorten the Winter Weather Advisory end time Action code: EXT Zones: 001>010 ETN: 0001 HazBegins: <u>2 AM Wed Sep 22</u> HazDuration: 24 hrs HazExpires: <u>2 AM Thu Sep 23</u> ProdExp: 6 PM Tue Sep 21 | AWIPS ID: WSWRIW UGC: stZ001>010-220000- VTEC String: /T.EXT.KRIW.WW.Y.0001.040505T0600Z-040923T0800Z/ Headline: ...WINTER WEATHER ADVISORY REMAINS IN EFFECT FROM 2 AM WEDNESDAY TO 2 AM MDT THURSDAY... | | | |
| 5 | Expand the Winter Weather Advisory to include five additional zones. Action codes: EXA & CON Add Five Zones: 011>015 ETN: 0001 HazBegins: 2 AM Wed Sep 22 HazDuration: 24 hrs HazExpires: 2 AM Thu Sep 23 ProdExp: 6 PM Tue Sep 21 | <u>Segment #1 will contain the following information:</u> UGC: stZ011>015-220000- VTEC String: /T.EXA.KRIW.WW.Y.0001.040505T0600Z-040923T0800Z/ Headline: ...WINTER WEATHER ADVISORY IN EFFECT FROM 2 AM WEDNESDAY TO 2 AM MDT THURSDAY... <u>Segment #2 will contain the following information:</u> UGC: stZ011>015-220000- VTEC String: /T.CON.KRIW.WW.Y.0001.040505T0600Z-040923T1400Z/ | | | |

| Step | Action | Expected Results | Comments | Pass/Fail | |
|------|---|---|----------|-----------|--|
| | | Headline: ... WINTER WEATHER ADVISORY REMAINS IN EFFECT FROM 2 AM WEDNESDAY TO 2 AM MDT THURSDAY... | | | |
| 6 | Expand the Winter Weather Advisory area to include five additional zones, and extend the time of the entire Winter Weather Advisory. Action codes: EXB & EXT Add Five Zones: 016>020 ETN: 0001 HazBegins: <u>8 AM Wed Sep 22</u> HazDuration: <u>24 hrs</u> HazExpires: <u>8 AM Thu Sep 23</u> ProdExp: 6 PM Tue Sep 21 | AWIPS ID: WSWRIW <u>Segment #1 will contain the following information:</u> UGC: stZ016>020-220000- VTEC String: /T.EXB.KRIW.WW.Y.0001.040922T1400Z-040923T0800Z/ Headline: ... WINTER WEATHER ADVISORY IN EFFECT FROM 8 AM WEDNESDAY TO 8 AM MDT THURSDAY... <u>Segment #2 will contain the following information:</u> UGC: stZ016>020-220000- VTEC String: /T.EXT.KRIW.WW.Y.0001.040922T1400Z-040923T1400Z/ Headline: ... WINTER WEATHER ADVISORY EXTENDED FROM 8 AM WEDNESDAY TO 8 AM MDT THURSDAY... | | | |
| 7 | Cancel a portion of the Winter Weather Advisory. Action codes: CAN & CON Cancel Five Zones: 016>020 ETN: 0001 HazBegins: 8 AM Wed Sep 22 HazDuration: 24 hrs HazExpires: 8 AM Thu Sep 23 ProdExp: Segment 1: <u>t+1 hr</u> Tue Sep 21 Segment 2: 6 PM Tue Sep 21 | AWIPS ID: WSWRIW <u>Segment #1 will contain the following information:</u> UGC: stZ016>020-04hhmm- VTEC String: /T.CAN.KRIW.WW.Y.0001.040922T1400Z-040923T1400Z/ Headline: ... WINTER WEATHER ADVISORY IS CANCELLED... | | | |

| Step | Action | Expected Results | Comments | Pass/Fail | |
|------|--|---|----------|-----------|--|
| | | <u>Segment #2 will contain the following information:</u> UGC: stZ001>015-220000- VTEC String: /T.CON.KRIW.WW.Y.0001.040922T1400Z-040923T1400Z/ | | | |
| | | Headline: ...WINTER WEATHER ADVISORY REMAINS IN EFFECT FROM 8 AM WEDNESDAY TO 8 AM MDT THURSDAY... | | | |
| 8 | Upgrade Winter Weather Advisory to a Winter Storm Warning for five zones. Action codes: UPG & NEW & CON Zones: 011>015 ETN: 0001 HazBegins: 8 AM Wed Sep 22 HazDuration: 24 hrs HazExpires: 8 AM Thu Sep 23 ProdExp: 6 PM Tue Sep 21 | AWIPS ID: WSWRIW <u>Segment #1 will contain the following information:</u> UGC: stZ011>015-220000- Two VTEC Strings: /T.UPG.KRIW.WW.Y.0001.040922T1400Z-040923T1400Z/ /T.NEW.KRIW.WS.W.0001.040922T1400Z-040923T1400Z/ | | | |
| | | Two Headlines: ...WINTER STORM WARNING IN EFFECT FROM 8 AM WEDNESDAY TO 8 AM MDT THURSDAY... | | | |
| | | <u>Segment #2 will contain the following information:</u> UGC: stZ001>010-220000- VTEC String: /T.CON.KRIW.WW.Y.0001.040922T1400Z-040923T1400Z/ | | | |
| | | Headline: ...WINTER WEATHER ADVISORY REMAINS IN EFFECT FROM 8 AM WEDNESDAY TO 8 AM MDT THURSDAY... | | | |

| Step | Action | Expected Results | Comments | Pass/Fail | |
|------|--|---|----------|-----------|--|
| 9 | Change the Winter Weather Advisory to a Snow Advisory for five zones. Action codes: CAN & NEW & CON Zones: 006>010 ETN: 0001 HazBegins: 8 AM Wed Sep 22 HazDuration: 24 hrs HazExpires: 8 AM Thu Sep 23 ProdExp: 6 PM Tue Sep 21 | AWIPS ID: WSWRIW <u>Segment #1 will contain the following information:</u> UGC: stZ006>010-220000- Two VTEC Strings: /T.CAN.KRIW.WW.Y.0001.040922T1400Z-040923T1400Z/ /T.NEW.KRIW.SN.Y.0001.040922T1400Z-040923T1400Z/ Two Headlines: ... WINTER WEATHER ADVISORY IS CANCELLED... ... SNOW ADVISORY IN EFFECT FROM 8 AM WEDNESDAY TO 8 AM MDT THURSDAY... <u>Segment #2 will contain the following information:</u> UGC: stZ001>005-220000- VTEC String: /T.CON.KRIW.WW.Y.0001.040922T1400Z-040923T1400Z/ Headline: ... WINTER WEATHER ADVISORY REMAINS IN EFFECT FROM 8 AM WEDNESDAY TO 8 AM MDT THURSDAY... | | | |

| Step | Action | Expected Results | Comments | Pass/Fail | |
|------|--|---|----------|-----------|--|
| 10 | Issue a new Winter Weather Advisory for 5 zones. Check for proper incrementing of ETN, and if headline time is rounded to the nearest 30 minutes. Action code: NEW Zones: 016>020 ETN: 0002 HazBegins: 10 PM Tue Sep 21 HazDuration: <u>11:35 hrs</u> HazExpires: <u>9:35 AM Wed Sep 22</u> ProdExp: 6 PM Tue Sep 21 | AWIPS ID: WSWRIW UGC: stZ016>020-220000- VTEC String: /T.NEW.KRIW.WW.Y.0002.040505T0200Z-040505T1335Z/ Headline: ...WINTER WEATHER ADVISORY IN EFFECT FROM 10 PM THIS EVENING TO 930 AM MDT WEDNESDAY... | | | |
| 11 | Correct a typo in the previously issued Winter Weather Advisory. Action code: COR Zones: 016>020 ETN: 0002 HazBegins: 10 PM Tue Sep 21 HazDuration: 11:35 hrs HazExpires: 9:35 AM Wed Sep 22 ProdExp: 6 PM Tue Sep 21 | AWIPS ID: WSWRIW UGC: stZ016>020-220000- VTEC String: /T.NEW.KRIW.WW.Y.0002.040505T0200Z-040505T1335Z/ Headline: ...WINTER WEATHER ADVISORY IN EFFECT FROM 10 PM THIS EVENING TO 930 AM MDT WEDNESDAY... | | | |

Appendix E VTEC OT&E NWS Forecaster Survey Form

Valid Time Event Code (VTEC) and Watch by County (WBC)

Workload/Service Assessment

Questionnaire

Click the **Submit** button upon completion of the questionnaire.

Forecaster Demographics

Office ID

Position

- Senior Forecaster Forecaster Intern
- HMT WFO Management (MIC, SOO, WCM, SH)

VTEC Training (check all that apply)

- Recorded VTEC Primer
- VTEC teletraining
- WWA teletraining
- Local WFO (Train-the-Trainer)

WWA Experience

- 0 to 6 Months 6+ to 12 Months 12+ Months

WarnGen Experience

- Less than 1 year 1-3 years 3+ Years

RiverPro Experience

- Less than 1 year 1-3 years 3+ Years

Shift Experience

- Less than twice a month 2-8 times a month Regular part of shift rotation

Forecaster Experience

- Less than 3 Years 3+ to 6 Years 6+ to 12 Years 12+ Years

Product Creation

Products Created This Shift (Check all that apply)

- 1. Convective warnings/statements (TOR, SVR, FFW, SMW, SVS, MWS, FFS)
- 2. Convective Watch (TOR, SVR)
- 3. Winter Weather (Snow, Freezing rain, etc.)
- 4. Non-Precipitation Hazard (High winds, Fog, etc.)
- 5. Marine (CFW)
- 6. WWA Hydro (FFA, etc.)
- 7. River Flooding (FLW, FLS)
- 8. Other. Fill in comment section below.

Comments:

VTEC Awareness

How did the implementation of VTEC affect your creation of the above product?

Response

Description

- 1. Not at all. Created the product as I did before VTEC.
- 2. Somewhat. Thought twice about how I created the product.
- 3. Neutral.
- 4. A good deal. Had to stop creation process to make sure I would generate the right code.
- 5. Considerably. Had to do the product over because VTEC was not correct.

Comments:

Have you had to change the way you create Watch, warning and advisory products since VTEC was introduced?

Response

Description

- 1. Yes. Used other creation software before VTEC.
- 2. No. This is how I created products before VTEC.

Comments if No:

Software Operational Effectiveness Response Scale

How effective was WWA in allowing you to do your job?

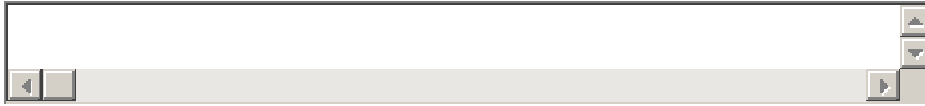
- | Response | Description |
|--------------------------|---|
| <input type="checkbox"/> | 1. Highly effective. Helped production of most products. Significant positive impact. |
| <input type="checkbox"/> | 2. Somewhat effective. Helped production of some products. Slight positive impact. |
| <input type="checkbox"/> | 3. Neutral. No discernable impact. |
| <input type="checkbox"/> | 4. Somewhat ineffective. Hindered production of some products. Slight negative impact. |
| <input type="checkbox"/> | 5. Highly ineffective. Hindered production of most products. Significant negative impact. |

Comments:

How effective was WarnGen in allowing you to do your job?

- | Response | Description |
|--------------------------|---|
| <input type="checkbox"/> | 1. Highly effective. Helped production of most products. Significant positive impact. |
| <input type="checkbox"/> | 2. Somewhat effective. Helped production of some products. Slight positive impact. |
| <input type="checkbox"/> | 3. Neutral. No discernable impact. |
| <input type="checkbox"/> | 4. Somewhat ineffective. Hindered production of some products. Slight negative impact. |
| <input type="checkbox"/> | 5. Highly ineffective. Hindered production of most products. Significant negative impact. |

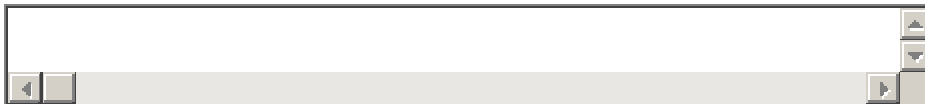
Comments:



How effective was RiverPro in allowing you to do your job?

- | Response | Description |
|--------------------------|---|
| <input type="checkbox"/> | 1. Highly effective. Helped production of most products. Significant positive impact. |
| <input type="checkbox"/> | 2. Somewhat effective. Helped production of some products. Slight positive impact. |
| <input type="checkbox"/> | 3. Neutral. No discernable impact. |
| <input type="checkbox"/> | 4. Somewhat ineffective. Hindered production of some products. Slight negative impact. |
| <input type="checkbox"/> | 5. Highly ineffective. Hindered production of most products. Significant negative impact. |

Comments:



Workload Response Scale

Does the implementation of VTEC contribute to a decrease or increase in your overall workload?

- | Response | Description |
|--------------------------|---|
| <input type="checkbox"/> | 1. Significant decrease in workload to create products and answer resulting public inquiries. |
| <input type="checkbox"/> | 2. Slight decrease in workload to create products and answer resulting public inquiries. |
| <input type="checkbox"/> | 3. Neutral. No change in workload due to VTEC implementation. |
| <input type="checkbox"/> | 4. Slight increase in workload to create products and answer resulting public inquiries. |

- 5. Significant increase in workload to create products and answer resulting public inquiries.

Comments:

Appendix F VTEC and WBC OT&E NWS Partner Survey Form

Valid Time Event Code (VTEC)

Partner Questionnaire - Daily July 14, 2004

A. Did VTEC positively impact your use of NWS products today?

1. Yes. Products containing VTEC were successfully used.
2. No. We were required to manually intervene because VTEC was not correct or other issues.

If no, please provide product name, office, issuance time, and brief description of error in comment block below.

Comments:

B. Did you uncover any NWS product(s) with VTEC code that did not comply with NWS Instruction 10-1703 today?

Choice: Yes or No

If yes, please provide product name, office, issuance time, and brief description of error in comment block below.

Comments:

C. How effective were NWS product(s) containing VTEC in assisting you to do your job?

1. Highly effective. Helped production of most products. Significant positive impact.
2. Somewhat effective. Helped production of some products. Slight positive impact.
3. Neutral. No discernable impact.
4. Somewhat ineffective. Hindered production of some products. Slight negative impact.
5. Highly ineffective. Hindered production of most products. Significant negative impact.

Comments:

D. Open Comments:

**Partner Questionnaire – End of OT&E
July 14, 2004**

A. On a scale of 1 to 5, how has the introduction of VTEC in NWS products impacted resources (human, computing, operations concept) in your organization (1 - no impact and 5 - high impact)?

Choose: 1 2 3 4 5

Comments:

B. On a scale of 1 to 5, how do you view the implementation of VTEC in NWS products as a contribution to your organization (1 - very positive and 5 - very negative)?

Choose: 1 2 3 4 5

Comments:

C. Does the implementation of VTEC contribute to a decrease or increase in your organization's overall workload?

1. Significant decrease in workload to create products and answer resulting public inquiries.
2. Slight decrease in workload to create products and answer resulting public inquiries.
3. Neutral. No change in workload due to VTEC implementation.
4. Slight increase in workload to create products and answer resulting public inquiries.
5. Significant increase in workload to create products and answer resulting public inquiries.

Comments:

D. Open Comments:

Appendix G WBC OT&E Test Case Scenarios

Watch By County Static Test Schedule

Eastern Region

September 8, 2004 8 am – 1 pm EDT

Offices: CHS, CAE, ILM, MHX, RAH, GSP

Test Watches: Tornado Watch (8 am)

Severe Thunderstorm Watch (10 am)

**Special Test Objectives: CHS and ILM will extend the Severe
Thunderstorm Watch in time (EXT) one
hour (12 pm – 1 pm)**

September 9, 2004 8 am – 12 pm EDT

Offices: PBZ, RLX, RNK, LWX, PHI, AKQ

Test Watches: Tornado Watch (8 am)

Severe Thunderstorm Watch (10 am)

**Special Test Objectives: PBZ will issue backup WCNs for RLX
for the Tornado Watch**

Central Region

September 14, 2004 8 am – 12 pm CDT

Offices: DDC, GLD, TOP, ICT, EAX, SGF

Test Watches: Tornado Watches (8 am)

2 Severe Thunderstorm Watches (10 am)

**Special Test Objectives: EAX will issue backup WCNs for SGF
for the Severe Thunderstorm Watch**

September 16, 2004 8 am – 12 pm CDT

Offices: LSX, ILX, PAH, LOT, SGF

Test Watches: Tornado Watch (8 am)

Severe Thunderstorm Watch (10 am)

Special Test Objectives: AFWA will issue backup WOUs for SPC

Southern Region

September 21, 2004 8 am – 12 pm CDT

Offices: LCH, OUN, FTW, HGX, SHV

Test Watches: Severe Thunderstorm Watch (8 am)

2 Tornado Watches (10 am)

**Special Test Objectives: OUN and LCH will add counties (EXA)
to the Tornado Watch area**

September 23, 2004 8 am – 12 pm CDT

Offices: AMA, LUB, SAT, SJT

Test Watches: Tornado Watch (8 am)

Severe Thunderstorm Watch (10 am)

Western Region

September 28, 2004 8 am – 12 pm MDT

Offices: GTF, BYZ, GGW, BOI, BIS

Test Watches: Severe Thunderstorm Watches (8 am)

Severe Thunderstorm Watch (for BOI at 9 am)

2 Tornado Watches (10 am)

September 30, 2004 8 am – 12 pm MST

Offices: VEF, PSR, FGZ, TWC

Test Watches: Severe Thunderstorm Watch (8 am)

Severe Thunderstorm Watch (10 am)

Make Up Dates

October 5 and October 7

Appendix H WBC OT&E Message Archive and Metrics

H.1 Watch By County Message Archive Instructions

The Watch By County Message Archive site was created with two main purposes. First, the site provides a location to review old Watch Outline Updates, Watch County Lists, and Watch County Notifications, that would otherwise be purged from AWIPS systems. Second, the site provides an automated method of identifying specific errors or inconsistencies in Watch County Notifications, in addition to a simple presentation of such error metrics.

- Access the website
<http://www.nws.noaa.gov/os/watch/>

Under **Technical Information**, select the hyperlink **Watch by County Message Archive**

- The **National Weather Service Watch By County Message Archive** page will open:



- Hyper linked sections are labeled as follows:
 - Browse the Watch By County Archive
 - Browse for Watch County Notification Errors
 - Browse the Watch County Notification Metrics (or view charts: by Region or by Site)
- **Watch by County Archive Page** – Generate a list of issued Watch County Notification (WCN) products by site, watch number, and specified range of dates.

- The following options are available:
 - **Choose site(s)** – Generate the list of WCN products by chosen site(s) (Click on desired site id to select individual sites or hold the CTRL key and click on desired site ids to select multiple sites).
 - **Choose Watch Number(s)** – Generate the list of WCN products by chosen watch number(s) (Click on desired watch number to select individual watches or hold the CTRL key and click on desired watch numbers to select multiple numbers).
 - **Choose date(s)**
 - **All Dates** – Generate the list of all WCN products for the watch numbers selected.
 - **Range of Dates** – Generate the list of WCN products issued during the selectable **Start Date** and **End Date** interval.
 - **Submit** – Generate the list of products (click on submit button).

Products are listed with respective Watch and Sequence Numbers (hyper linked), Site ID, and Date. Select the hyper link to view product.

- **Watch County Notification Errors Page** – Generate a list of issued WCN products by site, specified range of dates, and error type.



- The following options are available:
 - **Choose site(s)** – Restrict the list of products by chosen sites (Press and hold the CTRL key to select multiple sites).
 - **Choose date(s)**
 - **All Dates** - Generate the list of all WCN products for the watch numbers selected.
 - **Range of Dates** - Generate the list of WCN products issued during the selectable **Start Date** and **End Date** interval.
 - **Choose error type(s)** – Generate list of products by chosen error type (Click on desired site id to select individual sites or hold the CTRL key and click on desired site ids to select multiple sites).
 - **Submit** – Generate the list of products (click on submit button).

Posted near the top of the generated error report is the **Number of errors** tally. WCN products are grouped by **Error type** and listed with respective **Watch and Sequence Numbers** (hyper linked), **Site ID**, and **Date**. Select the hyper link to view product. The errors flagged within each product are highlighted in red text; flagged errors are hyper linked to a brief explanation of the problem.

H.2 Watch County Notification (WCN) Message Metrics Instructions

- Access the website
<http://www.nws.noaa.gov/os/watch/>

Under **Technical Information**, select the hyperlink **Watch by County Message Archive**

- The **National Weather Service Watch By County Message Archive** page will open:



- Hyper linked sections are labeled as follows:
 - Browse the Watch By County Archive
 - Browse for Watch County Notification Errors
 - Browse the Watch County Notification Metrics (or view charts: by Region or by Site)
- **Watch County Notification Metrics Page –**



- The following options are available:
 - Grouping
 - Metric
 - Interval
 - Error Type
 - Dates

In addition, the page displays a chart that shows the percentage of good products.
- **Grouping:**
 - **None** - an aggregate statistic for all WFO sites over time.
 - **Site** - statistics for each individual WFO site over time.
 - **Region** - statistics for each Region over time.

- **Error Type** - statistics for the frequency of different error types over time.
- **Metric:**
 - **Good Products (percent)** - percentage of good products over time.
 - **Products with Errors (percent)** - percentage of products with errors over time.
 - **Errors Per Product** - average number of errors per product over time.
 - **Total Errors** - total number of errors over time.
 - **Product Count** - total number of products issued over time.
- **Interval (beginning from the specified start date to the specified end date):**
 - **All** - aggregate statistic for a given interval.
 - **By Day** – daily statistics.
 - **By Week** - weekly statistics.
 - **By Month** - monthly statistics.
- **Error Type:**
 - **Critical Errors** - statistics for critical errors only.
 - **All Errors** - statistics for all errors.
- **Dates:**
 - **All** - aggregate statistic for all products ever issued.
 - **From May 1, 2004** - statistics from May 1, 2004 (*The website is defaulted to start with this date*).
 - **Start Date/End Date** – establishes a range of dates for which statistics are generated.
 - **Update** – displays the most current data from the selected start date.
- **To View Charts –**
 - **By Region** – An Excel file that includes graphs for each individual region, one graph for All WFOs (National), and a frequency chart for each type of error:
 - **Regional** – Denoted by Region Name, charts the *Percentage of Products with Errors* and the *Product Count* over time.
 - **National** – Denoted by “ALL WFOs,” charts the *Percentage of Products with Errors*, *Product Count* and the *Number of WFOs* issuing products over time.
 - **Error Chart** – Denoted by “Error Chart,” displays the frequency of each type of error by month.
 - **By Site** – An Excel file that includes two graphs for each individual site.
 - **Graph 1** - Denoted by “Site ID’1,” charts the *Percentage of Products with Errors* and the *Product Count* over time.
 - **Graph 2** – Denoted by “Site ID’2,” charts the *Errors Per Product* and *Product Count* over time.

When opening all Excel Files, select **Enable Macros** to run the file.