

***NATIONAL WEATHER SERVICE SOUTHERN REGION SUPPLEMENT 01-2004
APPLICABLE TO NWSI 10-2201
March 27, 2014***

***Operations and Services
Readiness, NWSPD 10-22
Backup Operations, NWSI 10-2201***

SOUTHERN REGION BACKUP OPERATIONS

OPR: W/SR11x5 (M. Bailey)

Certified by: W/SR1 (J.Cupo)

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SUMMARY OF REVISIONS: This supplement supersedes Southern Region Supplement 01-2004 dated June 27, 2011.

The following changes were made to this issuance:

1. Drills are now required for EACH office a WFO backs up, at least once a year.
2. Drills are required two times a year for RFCs and CWSUs.
3. MSB/HSB Chief will be notified and keep a record of drills.
4. Added mandatory preparatory activities.
5. Added additional backup duties.
6. Reorganized Supplement.
7. Backup Offices (each WFO, RFC, and CWSU) will now always send an initial ADA message.
8. The ROC will be notified via the ADA message, so notification via phone call is not necessary, unless an emergency.
9. Added WSR-88D Data Backup Options.

<Signed>

March 13, 2014

Steven Cooper
Regional Director

Date

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1. Purpose

Service backup is one means to ensure the NWS maintains continuity of services and essential support for our partners and the public. This document provides instructions for the transfer of essential operational responsibilities from one Weather Forecast Office (WFO), Center Weather Service Unit (CWSU), or River Forecast Center (RFC) to another during backup situations.

Offices and their backups will:

- a. Put forth a robust effort to share tools/info that facilitate good backup service,
- b. Conduct meaningful training that maximizes backup readiness, and
- c. Actively accept backup responsibility from each other, unless compelling operational reasons exist that prevent the backup office from doing so.

Written instructions cannot cover every situation and personnel must use initiative and good judgment to ensure a continuation of essential services. If there are questions about this supplement during an emergency backup situation, contact Southern Region Headquarters (SRH) Regional Operations Center (ROC) at **817-978-1100, ext 147**. This number is the 24-hour phone number for the ROC. If no one answers, leave a message and a call back number, and the Duty Officer will be paged and should return your call within 15 minutes.

2. Definitions

- a. Full Backup - All of a WFO's critical products, services, and responsibilities (e.g., warnings, grids, data collection, etc.) need to be backed up by a designated Backup Office (see Appendix A). A list of critical products is included in Appendix A of NWSI 10-2201.
- b. Partial Backup - Some of a WFO's products, services and responsibilities (e.g., warnings, grids, data collection, etc.) need to be backed up by their Backup Office. For example, if only RiverPro is down, a Backup Office may only need to backup some hydrological products.
- c. Primary Backup Responsibility - If an office is rendered inoperative, the Primary Backup Office will assume the inoperative office's designated duties, as defined in a and b above (Full or Partial Backup).
- d. Secondary Backup Responsibility - If an office is rendered inoperative, and the Primary Backup Office is either rendered inoperative or unable to assume backup responsibility due to circumstances beyond their control, the Secondary Backup Office will assume the designated duties, as defined in a and b above (Full or Partial Backup).
- e. Tertiary Backup Responsibility - If an office is rendered inoperative, and the Primary Backup Office and the Secondary Backup Offices are either rendered

inoperative or unable to assume backup responsibility due to circumstances beyond their control, the Tertiary Backup Office will assume the designated duties, as defined in a and b above (Full or Partial Backup).

As a reminder, tertiary backup is not normally supported for hydrology because it is not hard coded in AWIPS for tertiary backup. However, during exceptional events, WFOs can contact WHFS support for assistance in setting up tertiary backup.

- f. Dual Backup Responsibility - In some situations, both the Primary and Secondary and even Tertiary Backup Offices may share backup responsibilities of the inoperative office.

3. Invoking Service Backup

The Meteorologist-In-Charge (MIC) / Hydrologist-In-Charge (HIC) or designee is authorized to invoke backup operations. The office should communicate their consideration of service backup with the supporting office as far in advance of the actual transfer of services as possible.

Personnel at the disabled site remain the best authorities on the local weather and know best the needs of their partners and customers. They should retain as much responsibility as possible during back-up situations.

An office may invoke full or partial service backup and will coordinate the distribution of workload during significant weather events for a number of situations including:

- Planned outages due to hardware or software updates,
- Unanticipated outages due to hardware or software failures,
- Extended power outages or prolonged communications failures,
- Violent acts of nature or other hazards to an office that might cause a threat to personnel if they did not seek shelter or evacuate the facility,
- Distributing workload during significant weather events to allow an office to focus on the most critical operations by utilizing partial service backup for lower priority products and services, and
- Service backup training and verification of service backup readiness.

3.1 Backup Procedures

- a. For Unplanned Outages
Follow the detailed instruction in Appendix B.
- b. Planned Outages
For planned outages such as an AWIPS upgrade, follow the same procedures in Appendix B, but coordinate with the Backup Office ahead of time (2-3 weeks or more if possible) so appropriate measures can be taken (for example, provide for adequate staff and/or plans to deploy forecasters to a nearby office).

c. Evacuations

Ensure your safety first. Then, notify ALL your backup offices and SRH as soon as possible upon departure and upon return. Call the SRH ROC at 817-978-1100, ext. 147. If no one answers, leave a message with a call-back number and which office you are calling from; the Duty Officer will automatically be paged. If commercial telephone circuits and cellular phone services are out-of-service, the office staff must become resourceful to make contacts, including the use of the Broadband Global Area Network (BGAN) “satellite” phone, if available.

3.2 Unable to Invoke Backup

If a primary backup office is unable to back up their paired office, the disabled office should immediately contact the secondary backup office for assistance. If the secondary office also is unable to provide support, the disabled office should call the tertiary office. If neither can provide support, immediately call the ROC for assistance. It is impossible to dictate instructions for every possible situation, and office staff must utilize initiative and good judgment in their actions. However, if the event involves a life threatening situation, the disabled office should make this point clear to the backup offices. Partner offices should recognize the importance of the NWS warning mission, and do everything at their practical disposal to maintain high impact services in the disabled office’s area of responsibility.

Optimally service backup within SR will be WFO-to-WFO for the provision of all products and services. However, there may be circumstances where it is impossible for one office to effectively provide the complete backup for another office. In such extenuating circumstances, an office requiring backup may need to have its operations divided between the primary, secondary and/or tertiary offices.

Offices who have experienced a rejection of service backup by their backup offices will notify the Southern Region ROC as soon as possible. HSB or MSB Chiefs will, in turn, be informed of these events, and will investigate both the reasonableness of the request as well as the justification for denying the request.

4. Backup Assignments for Offices

Appendix A details the Backup Office pairings for WFOs, RFCs, and CWSUs. The Southern Region ROC will coordinate with the other regions when service backup of ROC Operations is required.

During extreme and/or catastrophic events, the pairings (especially tertiary pairings) may not be feasible due to the event at hand, and SRH will discuss (along with input from the affected WFOs and potential new pairings) plans to potentially alter their backup pairings.

If for any reason backup plans cannot be successfully implemented/invoked, such as both backup offices being down, notify the SRH ROC at 817-978-1100, ext 147 immediately and leave a call back number on the message.

5. **Backup Preparations**

For service backup to be implemented in an orderly and efficient manner, each office will supply its backup offices with the following items twice a year (at least by January and July or as changes occur):

- A current copy of (or a link to) its Station Duty Manual (SDM) or office instructions.
- Copies of AWIPS configuration files or configuration files for other software or systems needed to create and issue products.
- Contact information for partners and other key customers.

Each WFO will post on the SR sharepoint (or equivalent), a copy of their Station Duty Manual (SDM). In addition, each WFO will maintain a copy of their SDM on a CD or other electronic media which will be provided to WFOs assigned back-up responsibility. This will ensure WFOs providing back-up have access to important information in the event they cannot access sharepoint. This will also enable the disabled WFO to have access to their SDM in the event they relocate to an EOC to assist the WFO providing back-up.

Impact-based Decision Support Services (IDSS)

IDSS have become a key means of conveying and delivering potential weather impacts to key decision-makers. The amount of resources employed toward IDSS as well as the tools utilized and support provided varies widely from office to office. Offices should, to the extent possible, attempt to mirror the IDSS by their backup offices and document deficiencies where lack of resources or capability preclude them from providing this support. Disabled offices should retain as much IDSS responsibility as possible as they know the needs of their partners and customers best.

Social Media, NWSChat and Graphicasts

Essential non-AWIPS communications such as Social Media, NWSChat, and graphicasts are an important part of the services NWS offices provides. Since philosophies/content differ substantially from office-to-office, coordination is very important in backing up these activities to try to replicate that capability to the best of your ability during backup. It's important for offices to exchange ideas on how (and under what conditions) these communication platforms will be maintained by the backup office.

Here is a link to a Google site that contains procedures and best practices for social media, NWSChat, and graphicasts: <https://sites.google.com/a/noaa.gov/sr-social-media/home/miscellaneous/service-backup-for-social-media>

6. Drills

6.1 Service Backup

Service backup is a complex operation that requires the staffs at backup offices to be familiar with each other's programs and responsibilities. Management will ensure an adequate degree of awareness by requiring ALL forecast operations personnel to remain proficient in service backup operations. Staff members should review on a regular basis the backup office resources listed in Section 4.

Most AWIPSS builds are quick and do not test the ability of both the forecasters of the backup offices as well as the full suite of functions to determine if a backup was actually successful. In most instances, backups occur without many changes or modification to the forecast for the offices being backed up and no products/services are performed or issued.

WFOs will conduct at least one service backup drill for each backup office they have (i.e., one drill for each of the primary, secondary, and tertiary backup offices), in addition to any routine or scheduled backups that may have been completed during the year due to AWIPS builds, etc.. Notification of offices being backed up by another, even during tests, requires issuing an SRHADASRH administrative message.

A service backup drill should be conducted for at least four hours and include the issuance of a complete set of forecast grids and subsequent public, aviation forecasts any required WARGEN products, and routine hydrologic or fire weather/marine products which would normally be made during the forecast period.

The results of each drill and suggestions for improvement will be submitted by a member of local Management to the SR ROC via a Google Form located at https://docs.google.com/a/noaa.gov/spreadsheet/viewform?usp=drive_web&formkey=dGp5NEc4TUh2MmxIand5ZDltSWVrdlE6MA#gid=0

SRH Meteorological Services Branch (MSB) will keep a record of the backup drills each office conducts every calendar year and assist the office in resolving any significant issues identified during the drill.

It is essential that all forecasters be fully trained to provide service backup. Management should have as many staff members as possible participate in each backup drill. This will ensure office personnel are better prepared, able, and confident to handle these situations and the office maintains the greatest capability to perform service backup successfully.

6.2 Communications Tests

If your office has a BGAN "satellite" phone, you are required to test it with the ROC once per quarter calendar year. Guidance and instructions for the use of the BGAN

should be included in your local office reference materials, including printing them out in case Internet is down. Instructions can also be found at the following SRH page:

<https://sites.google.com/a/noaa.gov/nws-sr-roc/decision-support-services-dss/bgan-instructions>

To initiate a satellite phone test, simply call the ROC during normal ROC hours using your BGAN, identify your office, and note that you are conducting a test using your satellite phone. Conversely, you can call the ROC via landline to have them initiate a test call to your BGAN.

You may include testing the BGAN as part of your drills (see Section 6.1), as well.

The results of these tests (and any issues) will be recorded by SR ROC and shared with Meteorological Services Branch and Systems Operations Division.

7. **Notification and Coordination Procedures**

It is critical to notify the backup office, partners, and SRH ROC when:

- a. backup procedures have been invoked, and
- b. when normal operations are restored.

In cases where an office must seek safer shelter or evacuate, employees will ensure their personal safety first and then complete notification and coordination procedures.

The backup office will issue an administrative message (SRHADASRH) as the primary means of notifying outside partners and the media. The requirement to send an administrative message applies to planned outages and drills as well as unplanned outages. The office may use other communication channels (12Planet, NWSChat) to supplement the administrative message.

It is important to remember that regardless of the message source, the administrative message, *and other sources viewable by the public*, will not specify the reason for invoking service backup. The reason for service backup is kept internal to the NWS. Follow the notification and coordination procedures in Appendices B and C when invoking or terminating backup services.

Local offices should develop mock SRHADASRH messages stored in AWIPS for quick dissemination of such products when called upon to backup an office.

Appendix A
National Weather Service Southern Region Service Backup
Assignments

Weather Forecast Offices:

Disabled Weather Forecast Office	Primary Backup	Secondary Backup	Tertiary Backup
Albuquerque, NM	El Paso	Amarillo	Lubbock
Amarillo, TX	Lubbock	Albuquerque	Midland
Atlanta/Peachtree City, GA	Birmingham	Morristown	Jackson
Birmingham, AL	Atlanta/Peachtree City	Huntsville	Little Rock
Brownsville, TX	Lake Charles	San Antonio/Austin	New Orleans
Corpus Christi, TX	San Antonio/Austin	Houston/Galveston	Mobile
El Paso, TX	Albuquerque	Midland	San Angelo
Fort Worth/Dallas, TX	Shreveport	Norman	Tulsa
Huntsville, AL	Jackson	Birmingham	Morristown
Houston/Galveston, TX	Lake Charles	Corpus Christi	Tallahassee
Jackson, MS	Huntsville	Shreveport	Nashville, Atlanta/PT City
Jacksonville, FL	Tallahassee	Key West	Miami, San Juan
Key West, FL	Miami	Jacksonville	Melbourne
Lake Charles, LA	Houston/Galveston	New Orleans	Tampa
Little Rock, AR	Memphis	Tulsa	Birmingham
Lubbock, TX	Amarillo	San Angelo	Albuquerque
Melbourne, FL	Tampa	San Juan	Key West
Memphis, TN	Little Rock	Nashville	Shreveport
Miami, FL	Key West	Tampa	Jacksonville
Midland, TX	San Angelo	El Paso	Amarillo
Mobile, AL	New Orleans	Tallahassee	Corpus Christi
Morristown, TN	Nashville	Atlanta/Peachtree City	Huntsville
Nashville, TN	Morristown	Memphis	Jackson
New Orleans, LA	Mobile	Lake Charles	Brownsville
Norman, OK	Tulsa	Fort Worth/Dallas	San Antonio/Austin
San Angelo, TX	Midland	Lubbock	El Paso
San Antonio/Austin, TX	Corpus Christi	Brownsville	Norman
San Juan, PR	Miami	Melbourne	Key West
Shreveport, LA	Fort Worth/Dallas	Jackson	Memphis
Tallahassee, FL	Jacksonville	Mobile	Houston/Galveston
Tampa, FL	Melbourne	Miami	Lake Charles
Tulsa, OK	Norman	Little Rock	Fort Worth/Dallas

Appendix A

Continued

River Forecast Centers:

River Forecast Center	Primary Backup	Secondary Backup	Tertiary Backup
Arkansas-Red River Basin (OK)	West Gulf	Southeast	
Lower Mississippi (LA)	Southeast	West Gulf	
Southeast (GA)	Lower Mississippi	Arkansas-Red River Basin	
West Gulf (TX)	Arkansas-Red River Basin	Lower Mississippi	

Center Weather Service Units:

Center Weather Service Unit	Primary Backup	Secondary Backup	Tertiary Backup
Albuquerque, NM	Denver (Longmont)		
Fort Worth, TX	Houston		
Houston, TX	Fort Worth		
Memphis, TN	Atlanta		
Atlanta, GA	Memphis		
Jacksonville, FL	Miami		
Miami, FL	Jacksonville		

Appendix B
WFO Specific Backup Instructions for Unplanned Emergency Outage

A. When an office is rendered inoperative, the inoperative office's staff will do the following:

- (1) **Notify the Appropriate Backup Office of the situation.**
If telephone lines are inoperative, use any means available (National Warning System (NAWAS), etc.) to contact your backup office. Ensure you relay a working contact number if applicable. If you are unable to reach the Backup Office, call SRH ROC for assistance. If commercial telephone circuits and cellular phone services are out-of-service, the office staff must become resourceful to make contacts, such as the use of BGAN. There have been cases where HAM radios were used to ask an amateur radio point-of-contact to call the backup office or SRH. Offices should document actions taken while invoking backup procedures.
- (2) **Consider Posting Notification in 12Planet, and NWsChat.**
- (3) **Prolonged Outages.**
Only for prolonged outages should a member of the office management contact the SRH ROC at 817-978-1100, ext. 147 to discuss with SRH personnel options and plans for possibly sending forecasters to other offices for support. If no one answers, leave a message, **and** a call-back number and which office you are calling from, and SRH personnel will be automatically paged.

B. Once operations are restored:

- (1) **Send SRHADASRH.**
Send the SRHADASRH to ALL notifying your office has resumed normal operations.

See Appendix G: Administrative Message Examples.

Appendix C

WFO Specific Backup Instructions for Supporting an Inoperative Office

A. When an office is backing up an inoperative office, the backup office's staff will do the following:

The Backup Office will assume the operations of the inoperative office and also will notify surrounding offices and contact the SRH ROC. Specifically:

(1) **Send SRHADASRH.**

The Backup Office will send an Administrative Alert message (SRHADASRH) addressed to ALL [in the AWIPS header block text window] notifying other offices, SRH, and the SRH ROC that the backup process has been initiated. This step is to ensure offices are aware of the backup situation.

In the forwarding "TO" line of the ADA, include the three-letter ID of the surrounding offices. Do not specify the reason for the backup in the ADA (the reason is for NWS employees only, and the ADA is a public product). All offices need to ensure SRHADASRH is locally configured to *alarm audibly* on the Advanced Weather Interactive Processing System (AWIPS) Text Workstation.

See Appendix G: Administrative Message Examples.

(2) **Monitor Weather and Emulate the Inoperative Office.**

Monitor the weather across the County Warning Area (CWA) of the inoperative office, issue warnings and other hazardous communications, grids, and other routine products as needed until the office has resumed functions.

If the inoperative office utilizes social media and graphiccasts routinely in their operations, the backup office should try to emulate that capability to the extent possible. Further, all efforts should be made to emulate the disabled office on NWSSchat.

As a reminder, here is the link to the Google site that contains procedures and best practices: <https://sites.google.com/a/noaa.gov/sr-social-media/home/miscellaneous/service-backup-for-social-media>

There are some WFO products and services that do not have a robust backup mechanism in place. These products and services include, but are not limited to, web page, climate services, social media, AHPS, and NWR. During backup operations, the backup office should work with the failed office and SRH to find the best solution to cover every program area of the failed office.

As specified in Directive 10-1701, Section 4.2.3, all products issued by a backup office will contain the product identifiers and mass media headers of the office being backed up. For example, if WFO Midland experiences an outage requiring

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backup, WFO San Angelo will issue the Midland zone forecast using the appropriate Midland product identifier, along with an ISSUED BY NATIONAL WEATHER SERVICE SAN ANGELO TX line. This will ensure proper dissemination. The mass media header format should follow the examples shown in NWSI 10-1701.

Appendix D

RFC Specific Backup Instructions for Both WFOs and RFCs

- a. If an RFC goes into backup, the disabled RFC will call their backup office to notify them. The backup RFC will send an SRHADASRH product to ALL. When returning to normal operations, the previously disabled RFC will inform the backup office of the return to normal operations and also send out an SRHADASRH to notify surrounding offices.
- b. The disabled RFC will notify affected WFOs immediately that they have hydrologic responsibilities until the RFC can commence backup services on their backup system. RFCs should use the RFC backup system during AWIPS system or communication outages. The service backup can originate from the local office or from any NWS office with access to OpsNet.
- c. Until the RFC has established their backup, the WFO staff should be prepared to take over hydrologic responsibilities. During this time, the WFOs will monitor, and adjust existing river forecasts as necessary until the RFC is able to again assume that responsibility. The WFOs will keep the hydrologic forecasts and warnings as accurate as possible. The WFO staff should access any resources practical in this effort, including phone coordination with the servicing RFC.
- d. RFCs will ensure that staff is trained in the use of the RFC backup system, including procedures to serve as the “backup dissemination office” to another RFC.
- e. RFCs will determine the best off-site location to store their portable RFC backup system.
- f. RFCs will periodically upload observed and model data to a SRH server system, as necessary, to initialize the backup forecast system in a reasonable time period. It is recommended that uploads take place at least once per day.
- g. RFCs will use the RFC backup system to generate and disseminate a core suite of hydrologic products to support WFO hydrologic operations. See Appendix A in NWSI 10-2201 for a list of critical products.
- h. RFCs will ensure that the RFC backup system is configured with the latest software (e.g., Community Hydrologic Prediction System (CHPS) and/or NWS River Forecast System (NWSRFS), local applications, etc.) to support hydrometeorological operations at the RFC. If required, ABRFC will provide technical support for the RFCs.
- i. RFCs will conduct a test of the mobile RFC backup system at least twice a year. This will allow staff members to gain experience and confidence with the RFC

Appendix D Continued**RFC Specific Backup Instructions for Both WFOs and RFCs**

backup system.. The results of backup drills and suggestions for improvement will be submitted to the SR ROC via a Google Form located at https://docs.google.com/a/noaa.gov/spreadsheet/viewform?usp=drive_web&formkey=dGp5NEc4TUh2MmxIand5ZDltSWVrdIE6MA#gid=0.

The information will be passed on to the Meteorological Services Branch Chief and the Hydrologic Services Branch Chief. SRH will keep a record of the backup drills each office conducts every year and assist the office in resolving any significant issues identified during the drill.

- j. SRH, in coordination with the Hydrologic Services Branch and the RFCs, will provide information technology support for RFC backup operations.
- k. Primary Backup RFC offices are responsible for running the LDAD dissemination software for the RFC in backup mode. The assignment of RFC backup dissemination offices are as follows:

Office in Backup Mode	Primary Backup Dissemination Office
ABRFC	WGRFC
LMRFC	SERFC
SERFC	LMRFC
WGRFC	ABRFC

Appendix E
CWSU Specific Service Backup Instructions

CWSU backup office pairings are documented in Appendix B of [NWSI 10-803](#) and also located in Appendix A of this Supplement.

CWSU backup requirements are documented in Chapter 9 of [NWSI 10-803](#).

Backup Preparation:

- CWSUs must have access to their backup sites' Station Duty Manual and/or Weather Information Play Book (<http://ocwws.weather.gov/cwsu/index.shtml>).
- CWSUs should ensure they are set up to receive the SRHADASRH product.
- CWSUs should be able to provide scheduled and on demand briefings, Center Weather Advisories (CWAs), and Meteorological Impact Statements

Going into Backup: If a CWSU goes into backup, the disabled CWSU will call their backup office to notify them. The backup CWSU will send an SRHADASRH product to ALL. When returning to normal operations, the previously disabled CWSU will inform the backup office of the return to normal operations and also send out an SRHADASRH to notify surrounding offices.

Backup Drills: CWSUs will conduct two backup drills a year. The results of backup drills and suggestions for improvement will be submitted to the SR ROC via a Google Form located at https://docs.google.com/a/noaa.gov/spreadsheet/viewform?usp=drive_web&formkey=dGp5NEc4TUh2MmxIand5ZDItdSWVrdIE6MA#gid=0.

The information will be passed on to the MSB Chief and the Regional Aviation Meteorologist. SRH will keep a record of the backup drills each office conducts every year and assist the office in resolving any significant issues identified during the drill.

Appendix F
WFO Specific Instructions

The goal of Service Backup is to ensure the continuation of essential products and services and to ensure the offices are familiar with the programs, products, and customers of their backup partner. Familiarity with each other's programs and responsibilities ensures an effective backup process. The following is a list of mandatory and strongly considered activities for backup offices:

Administration (mandatory):

- 1) Exchange Station Duty Manuals (SDM) or office instructions.
- 2) Keep current examples of the various products your backup office issues.
- 3) Make sure the Administrative Alert messages from all affected ISC sites are alarmed on AWIPS.
- 4) Ensure all minor format differences between your products and your backup office's products are completely understood.
- 5) Provide your backup office with a list of emergency managers, storm spotters, and media in your CWA along with necessary phone numbers and email addresses.
- 6) If you have any special NWSChat rooms, share that information with your backup office. Remember that you will need to give backup office personnel permission to enter these rooms (the admins can add all NWS personnel from a specific office through the room management web page). Most office's "EM" rooms are only accessible to that office's staff, not their back-up office's staff, as an example.
- 7) Share web-based capabilities, like Intranet webpages or severe weather email links.
- 8) Share E-19s that provide flood damage information, historical crests, and other hydrological information.
- 9) Share listings of automated gages, sensors, and Automated Surface Observing System (ASOS) units with associated phone numbers, etc.
- 10) Share listings of meteorological, hydrological, and RFC products on AWIPS.
- 11) Share social media practices and recommendations for social media interaction during backup services.

Training (mandatory):

- 12) Conduct seminars and training sessions with your backup office.
- 13) Share local climatology, hydrologic, and meteorological nuances that your office has discovered through experience and any rules-of-thumb or local forecasting techniques.
- 14) Play a vital role in staff training. An example of this may be having a new MIC being assisted by the backup office MIC.
- 15) Share lessons learned from severe weather or unusual weather events/forecasts with your backup office.

Resources (mandatory):

- 16) If your office has an office emergency phone/satellite phone, make sure it is charged and everyone knows where it is located, know how to use it, and that the number is accessible. Ensure necessary phone numbers are preprogrammed into the phone.

Appendix F Continued
WFO Specific Instructions

IT (mandatory):

- 17) Make sure AWIPS is configured to support the duties of your backup office.
- 18) Share any local applications necessary for operations with your backup offices to ensure consistency of local applications.
- 19) BEFORE your backup drills, ensure the GFE service backup works a week or so prior to the backup date. Many times, changes have been made at the backup office but have not been uploaded to the central server. Doing those checks a week or so prior to the scheduled backup, in addition to the training/drills, can really make the backup process easier.
- 20) Severe weather backup operations/WarnGen templates must be shared with backup offices when updated.
- 21) Make sure to have all the **most up to date** maps and backgrounds for any computer programs, such as WarnGen shapefiles, etc.
- 22) Utilize 12Planet and NWSChat during backup events.

Training (strongly recommended):

- 23) The backup office should do a case study within the primary offices domain and coordinate the results with the SOO/WCM/designee of the primary office.
- 24) Develop a forecaster exchange program. Forecasters can be exchanged for a day or two to fully experience the programs of their backup office.

Outreach (strongly recommended):

- 25) Notify emergency managers and other core partners of the backup plan.
- 26) Introduce your backup office to your emergency managers.
- 27) Promote staff participation in backup office visitations.
- 28) Have mutual customer service workshops or customer advisory committee meetings.
- 29) Coordinate active customer service outreach programs.
- 30) Coordinate any focal point activity with your backup office (e.g., severe weather, hurricane, hydrology, AWIPS, marine, aviation, radar, weather radio, climatology, etc.).
- 31) Ensure ham radio operators can help others in other CWAs.

ASOS and Upper Air:

A WFO providing service backup will provide ASOS observation monitoring and quality control as described in NWSI 10-1305.

ASOS and the Upper Air systems automatically connect and/or can be dialed manually to transmit the observations per a network configuration plan including redundant dial backup. This network configuration plan is not a part of this Supplement. If the primary and backup automated communication systems fail and/or manual observations are generated, the responsible WFO will:

- (1) Attempt to manually transmit the observation via Advanced Weather Information Processing System (AWIPS); or

Appendix F Continued WFO Specific Instructions

(2) Work with the service backup WFO responsible for data acquisition to ensure the observations are manually transmitted in a timely manner.

CRS Preparation:

When an office must evacuate, the automated CRS program will be able to continue broadcasting as normal as long as products come into AWIPS from the service backup office and are automatically transmitted to CRS. For those products that are not fully automated, an office should add a short message to the broadcast cycle stating that only limited updates will be available until further notice. **Ensure that no public announcement is made that the office has been evacuated.**

Social Media:

Social media is an integral part of operations. Since philosophies/content differ substantially from office-to-office, coordination is very important in backing up these activities to try to emulate that capability to the extent possible during backup. It's important for offices to exchange ideas on how (and under what conditions) these communication platforms will be maintained by the backup office.

A Google Site has been established to house updated procedures and best-practices:

<https://sites.google.com/a/noaa.gov/sr-social-media/home/miscellaneous/service-backup-for-social-media>

Interactive Forecast Preparation System (IFPS):

Backing up WFO grids is a necessary and important function during service backup to provide continued service to our customers. All grids are required to be prepared and disseminated during service backup. This is accomplished by importing the configuration and digital data for the inoperative site from the national Central Backup Server.

For service backup to function properly, it is critical that all offices share any/all changes to their GFE maps/shapefiles with their backup offices at the time those changes are made. Do not wait to share your updated files with your backup office, otherwise valuable time may be lost in a backup situation to fix those files.

WHFS and other Hydrology Procedures:

The WFO Hydrologic Forecast System (WHFS) support group in OCWWS/HSD at NWS HQ will provide system support for the transfer of critical information from the initiating site to all backup offices. Critical information includes RiverPro Templates, Product Content Control (PCC) files and key information in the WHFS Hydrology Data Base. This file transfer should be performed whenever significant changes are made to critical hydrology information. For coastal and first tier inland offices, this process needs to be performed prior to the start of hurricane season. This process will be initiated by the office opening a trouble ticket with NCF requesting the file transfer to support service backup.

Appendix F Continued
WFO Specific Instructions

Other important hydrologic information that needs to be shared by the local office with the backup offices:

- Relevant parts of the Hydrologic Services Manual (HSM) (including detailed maps, examples of products issued by your office, explanation of special cases or conditions at river points in your HSA, etc.).
- Current E-19s.
- Templates or preformats for hydrologic products, along with instructions.
- Current rating curves.
- List of hydrologic customers, including their phone numbers and what products they use.
- WHFS and HYDROMET at the backup sites needs to have access to all hydrometeorological data needed to perform hydrologic back-up operations, as well as the forecasts generated by the RFC.

The backup office will ensure that AHPS web page service backup is invoked/terminated, as required. Instructions for invoking/terminating AHPS web page service backup support are available at this link:

https://srs/Program/Hydrology/Documents/Common_AHPS.doc

Radar Data Dissemination Backup:

It is now possible to reliably provide service backup for an inoperative office's radar products. The assumptions are that the inoperative office is still on the AWIPS WAN and that the WSR-88D is still functional. If a site has a scheduled, or non-scheduled, outage expected to last for several hours or more, a site's radar backup can act as the transmission site for the downed office's radar data.

More detailed information regarding the setup of radar backup can be found in your site's Radar File Help Sheet maintained by the Radar Operations Center. Each office's Radar Focal Point and ESA should have access to this documentation. Appendix H indicates the radar backup sites for the Southern Region and Appendix I provides WSR-88D data backup options and.

Before entering into or terminating radar backup, site(s) should contact the NCF for support.

Appendix G
Administrative Message Examples

Backup Implementation Example:

NOUS74 KEHU 152104
ADASRH

ALERT ADMINISTRATIVE MESSAGE
NATIONAL WEATHER SERVICE SOUTHERN REGION HEADQUARTERS
404 PM EST SAT MAR 15 2013

TO: MOB...TBW...FFC...BMX...JAX
FROM: NWS WFO TALLAHASSEE

NWS WFO JACKSONVILLE IS BACKING UP WFO TALLAHASSEE. WILL ADVISE
WHEN WE HAVE RETURNED TO NORMAL OPERATIONS.

\$\$

Resumption of Service Example:

NOUS74 KEHU 152153
ADASRH

ALERT ADMINISTRATIVE MESSAGE
NATIONAL WEATHER SERVICE SOUTHERN REGION HEADQUARTERS
453 PM EST SAT MAR 15 2013

TO: MOB...TBW...FFC...BMX...JAX
FROM: NWS WFO TALLAHASSEE

NWS WFO TALLAHASSEE HAS RESUMED NORMAL OPERATIONS.

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Appendix H
NWS Southern Region Radar Backup Assignments

WFO System	Provides Primary “radar” backup for...	and Secondary “radar” backup for ...
ABQ	KEPZ & KHDX	KAMA
AMA	KLBB	KABX & KFDX
BMX	KFFC & KJGX	KHTX
BRO		KEWX & KDFX
CRP	KEWX & KDFX	KHGX
EPZ	KABX & KFDX	KMAF
EWX	KCRP	KBRO
FFC	KBMX & KMXX	KMRX
FWD	KSHV	KTLX, KFDR & KVNK
HUN	KDGX & KGWX	KBMX & KMXX
HGX	KLCH & KPOE	KCRP
JAN	KHTX	KSHV
JAX	KTLH & KEOX	KBYX
KEY	KAMX	KJAX & KVAX
LCH	KBRO & KHGX	KLIX
LIX	KMOB & KEVX	KLCH & KPOE
LUB	KAMA	KSJT & KDYX
LZK	KNQA	KINX & KSRX
MAF	KSJT & KDYX	KEPZ & KHDX
MEG	KLZK	KOHX
MFL	KBYX & TJUA	KTBW
MLB	KTBW	TJUA
MOB	KLIX	KTLH & KEOX
MRX	KOHX	KFFC & KJGX
OHX	KMRX	KNQA
OUN	KINX & KSRX	KFWS & KGRK
SJT	KMAF	KLBB
SJU		KMLB
SHV	KFWS & KGRK	KDGX & KGWX
TAE	KJAX & KVAX	KMOB & KEVX
TBW	KMLB	KAMX
TSA	KTLX, KFDR & KVNK	KLZK

Appendix I
WSR-88D Data Backup Options

Type of Backup	OTR	RMR	WAN Based ORPG Backup Scenario A	WAN Based ORPG Backup Scenario B	VSAT (Total Outage)
When to use	To supplement data received via the SBN on a one-product, one-time basis (i.e. Reflectivity Cross-Section).	To supplement data received via the SBN in larger quantities over a set period of time.	To replace data received via the SBN with data retrieved via RPS List.	If the primary AWIPS that normally transmits the WSR-88D data to the radar central server, SBN, etc, is down (i.e. during hardware or software installs), this capability enables an adjacent WFO AWIPS to restore WSR-88D data transmission to the radar central server, SBN, etc.	Long term outages greater than 48 hours. Can be configured at the WFO or the RDA depending upon outage conditions and location of RDA.
Limitations	While this can add additional products to what is already received via the SBN, it requires the user to issue repeatedly if more than one product is required or a product is required more than one time.	Manipulating RMR Lists is time-consuming and tedious and not easy to do on-the-fly.	Initiating a WAN Dedicated connection will terminate the SBN feed, which means that RPS Lists must be generated for each VCP mode and must include all products required for operations. Accessibility and bandwidth restrictions also apply during this form of backup limiting the size and number of products that may traverse this line.	Same as ORPG Backup Scenario A. In addition, this Scenario will utilize the national baseline RPS lists, so you will be limited to just the products on that list plus a smaller subset of the products on your local lists; the maximum number of products is 65.	Takes time to deploy from the ROC in Norman and takes time to set up and configure.
Support level needed	User	User	FXA or NCF	FXA or NCF	Regional HQ and ROC

ORPG – Open Radar Product Generator
 RMR – Radar Multiple Request
 ROC – Radar Operations Center
 VSAT – Very Small Aperture Terminal (Satellite)
 RPS – Routine Product Set
 RDA – Radar Data Acquisition unit

OTR – One Time Request
 NCF – Network Control Facility
 WAN – Wide Area Network
 SBN – Satellite Broadcast Network
 VCP – Volume Coverage Pattern