AWIPS SOFTWARE INSTALLATION NOTE 78
Operations Division
W/OPS12: JCS

SUBJECT:	AWIPS Release OB9
PURPOSE:	Provides installation instructions and related information for the software release.
SITES AFFECTED:	All Weather Forecast Offices (WFO), River Forecast Centers (RFC), regional headquarters and National Centers for Environmental Prediction (NCEP).
AUTHORIZATION:	The authority for this note is Request for Change (RC) 11233.
VERIFICATION STATEMENT:	This procedure was tested and verified on test platforms at the National Headquarters in Silver Spring, MD (NMTW, NMTR, and NHOR), and the following operational platforms: Central Region Headquarters in Kansas City, MO (BCQ); Southern Region Headquarters in Ft. Worth, TX (EHU); Eastern Region Headquarters in Bohemia, NY (VUY); Pacific Region Headquarters in Honolulu, HI (PBP), Weather Forecast Offices (WFO) Pueblo, CO (PUB), Grand Junction, CO (GJT); Midland, TX (MAF); Salt Lake City, UT (SLC); Seattle, WA (SEW); Detroit, MI (DTX); Cleveland, OH (CLE); Miami, FL (MFL); New York, NY (OKX); Albany, NY (ALY); River Forecast Centers (RFC) Northwest in Portland, OR (PTR), California/Nevada in Sacramento, CA (RSA); and the Radar Operations Center in Norman, OK (OSFW).
ESTIMATED COMPLETION DATE:	All sites should complete installation by April 30, 2009. The installation date must be scheduled on the NWS Oracle AWIPS Schedule calendar.
TIME REQUIRED:	Pre-installation procedures take about 20 minutes. Main installation procedures take about 3 hours. Post installation procedures take about 1 hour, but the RFC optional steps could take an additional 1 to 2 hours.
ACCOMPLISHED BY:	Electronic Systems Analysts (ESA) or their designee.
EQUIPMENT AFFECTED:	AWIPS
SPARES AFFECTED:	None.
PARTS/MATERIALS REQUIRED:	AWIPS OB9 Software Installation DVD.
SOURCE OF PARTS/MATERIALS:	Raytheon
DISPOSITION OF REMOVED PARTS/MATERIALS:	Not Applicable.
TOOLS AND TEST EQUIPMENT REQUIRED:	None.

DOCUMENTS AFFECTED: File this note in EHB-13, Section 3.1. Discard all previous software installation instructions prior to Build OB8.2 (AWIPS Software Installation Instruction Note 72) in Section 3.1.

PROCEDURE: These instructions are written for both RFC and WFO systems. As a result, some instructions may only be applicable to RFC systems, WFO systems or individual sites. Each step or section is clearly marked. **All steps are required unless otherwise directed in the instructions.**

Script log output files for this release are available at https://www.ops1.nws.noaa.gov/Secure/awips_softwre.htm

TECHNICAL ASSISTANCE: For questions or problems pertaining to this note, contact the Network Control Facility (NCF) at (301) 713-9344 and ask for OB9 installation support.

REPORTING INSTRUCTIONS: Report the completed modification using the Engineering Management Reporting System (EMRS) according to the instructions in EHB-4, Maintenance Documentation, Part 4, and Appendix F. Include the following information on the EMRS report:

Maintenance Description (block 5): **Install AWIPS Release OB9**

Equipment Code (block 7): **AWIPS**

Serial Number (block 8): **001**

Maintenance Comments (block 15): **Installed Release OB9 I.A.W. AWIPS Software Installation Note 78.**

Mod No. (block 17a): **S78**

A sample EMRS report is provided as attachment **I**.

Dominic Bosco

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Date: 2009.03.11 09:15:44 -04'00'

Mark S. Paese
Director, Operations Division

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Attachment B - Main Installation Instructions
Attachment C - WarnGen Template Changes
Attachment D - NDM Files Updated in OB9
Attachment E - Procedure for Installing the AWIPS-Provided PGI Fortran Compiler
Attachment F - High-resolution Precipitation Nowcaster (HPN)
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ATTACHMENT A - Pre-Installation Instructions

The identity of the system can be determined by checking the `$SITE_TYPE` variable. Each AWIPS also has a unique site name, determined by checking the `$SITE_IDENTIFIER` variable.

A.1 General Information

The OB9 installation includes new software at all sites.

A.1.1 Prerequisites

There are no prerequisites for the OB9 release.

A.1.2 WarnGen Information (WFO Systems Only)

Information about the changes in the templates is included in Attachment C. This attachment should be provided to the WarnGen focal point at each WFO.

A.1.3 Backup Localization Information

During the installation, all backup localizations will be removed. Therefore, backup localizations must be run as per section B.3.8 prior to using D2D or WarnGen in backup mode.

A.2 Pre-Installation Procedures

Complete Sections A.2.1 through A.2.3 prior to beginning the core installation in Attachment B.

A.2.1 Coordinate Installation Date

Coordinate the installation with backup sites, uplink sites, hub site pairs, and Center Weather Service Units (CWSU), as applicable.

1. AWIPS will be unavailable for operational use during the installation. Coordinate with backup sites to arrange for service backup as needed.
2. Weather Wire uplink sites must ensure that the backup Weather Wire site(s) are not upgrading to this release concurrently. Contact the AWIPS Regional Focal Point to request assistance with this coordination.
3. Wide area network (WAN) hub sites must ensure that the corresponding hub site pair is not concurrently doing similar upgrades. Hub site pairs are BOX/CTP, EAX/TSA, MPX/ILN, FFC/LIX, STO/PQR and SLC/FWD. Contact the AWIPS Regional Focal Point to request assistance with this coordination.
4. Sites with connections to CWSUs must coordinate the installation of this release with those sites, since there will be a disconnection during the release installation.

A.2.2 Download Files from the NOAA1 Server

Download the required OB9 National Data Management (NDM) files and other files that will be used in the installation. These files are placed in a safe directory until the main install day. Attachment D contains a list of the files downloaded in this step.

1. From a Linux Workstation, open a terminal window and log into **DX1** as `root`.
2. As user `root` from **DX1,** type the following commands:

```
mv /local/install/* /tmp
mkdir -p /data/local/nationalData
chown fxa:fxalpha /data/local/nationalData
chmod 775 /data/local/nationalData
cd /data/local/nationalData
mv /data/local/nationalData/* /tmp
```

NOTE: For the following `sftp` command, type **`yes`** to any system prompts about adding the RSA key.

```
sftp ftpawips@165.92.25.137      (Type in password !SAWIPS4 when prompted.)
cd pub/ndm/OB9
mget *                           (12 files are downloaded)
exit
chown fxa:fxalpha *
chmod 775 *
```

NOTE: If the site has made localized changes to any of the NDM files listed in Attachment D, it is necessary to merge modifications into the downloaded files before the day of the install. Send changes that are applicable to Fran Curnow (frances.curnow@noaa.gov).

A.2.3 Check Software Installation DVD

Verify that the installation DVD is mountable and readable. If any errors are encountered mounting the DVD or reading files using the commands, contact the NCF at (301) 713-9344, and request OB9 install support.

1. Insert the AWIPS OB9 Software DVD into the DX1 DVD-ROM drive.
2. As user `root` from **DX1**, type the following commands to mount and check the DVD:

   ```
   mount /dev/cdrom
   cd /media/cdrecorder
   dd if=/dev/cdrom of=/dev/null      (Takes about 12 minutes.)
   ```

   Verify records in is equal to records out.
3. Once the procedure has successfully completed, eject the DVD and store until installation day.

   As user `root` from **DX1**, type the following commands:

   ```
   cd /
   eject /dev/cdrom
   ```

The pre-install steps are complete. On the scheduled install day, proceed to Attachment B for the main installation.

ATTACHMENT B - Main Installation Instructions

B.1 Preparation Instructions for the OB9 Software Upgrade

B.1.1 Time to Complete Install

It generally takes around 3 hours to complete the installation scripts.

B.1.2 Notify the NCF

Before starting the installation, open a trouble ticket with the NCF by calling (301) 713-9344. If problems are encountered during the install, contact the NCF and ask for OB9 install support.

B.1.3 Prepare AWIPS for Software Upgrade

1. Initiate service backup, if needed.
2. Terminate all D2D sessions and logout of the LX workstations.
3. Logout of all text workstations, and terminate any local and AWIPS applications open.
4. **(PACE sites)** Switch off PACE input during the installation.
5. **(ASOS sites)** Prevent ASOS from dialing into LDAD by turning off the dial-in phone lines on the LDAD.
6. **(Radar sites)** Send a message indicating radar unavailability during the installation.
7. **(RRS Sites)** Disconnect the Ethernet cable from the back of the RWS and pull the Upper Air modem from the AWIPS modem rack to prevent RRS from transmitting data to the local AWIPS system while it is down. RRS will automatically go to the second dial backup site after three failed dial attempts to the local system.
8. Sites with data feeds to the FAA should contact the FAA to notify them of the installation.
9. Weather Wire uplink sites should contact Dyncorp, and ensure a backup uplink site is not expected to be in service backup.
10. Sites with a CWSU connection should request that the CWSU logout of their D2D application. Unplug the wire to the CWSU.
11. Login to any workstation as root, open a terminal window, and login to DX1 (as root).
12. Run the script to move the NDM files into the proper location.

    As user `root` on **DX1**, type:

    ```
    script –a –f /local/install/moveob9files.out
    cd /data/local/nationalData
    ./moveob9files.sh          (Takes < 1 minute.)
    exit
    ```

13. In order to support the new Dual Polarization functionality, a copy of the current D2D Procedures will be saved off during the install. The current backup directories on **LX1** and **LX2** must be removed prior to the main installation script.

    As user `root` on **DX1**, type:

    `ssh lx1`

    `rm -rf /awips/fxa/backup` (Removes backup directory if it exists.)

    `exit` (Returns to DX1)

    `ssh lx2`

    `rm -rf /awips/fxa/backup` (Removes backup directory if it exists.)

    `exit` (Returns to DX1)

14. Insert the OB9 AWIPS Software DVD into the **DX1** DVD drive.

15. As user `root` on **DX1**, type the following command to mount the DVD:

    `mount /dev/cdrom`

B.1.4 Remove Test Software

As a general rule, sites testing software via ATAN should remove that software before continuing the installation.

B.1.5 Deactivate Satellite Files from Custom Files

The installation changes the mapping of data keys to the depict keys, which are used in D2D to display satellite products. Therefore, current custom overrides (if any) need to be deactivated prior to proceeding.

In `/data/fxa/customFiles`, rename variations of `satDataKeys.txt` and `satDepictKeys.txt` to add an `ob832` extension to each file. For example, use the command below to deactivate the `satDataKeys.txt`:

`mv satDataKeys.txt satDataKeys.txt.ob832`

B.1.6 Check for Stale NFS Mounts on AWIPS Devices

Stale mounts are often caused by powering off external devices that host verification directories, such as `/data/verify` and `/data/BOIverify`, without first un-mounting them on AWIPS devices. In most cases, it is NOT necessary to power off these external devices for AWIPS software upgrades.

In a terminal window, log into each AWIPS device and issue the **`df`** command.

If the prompt does not return within a few seconds, a stale mount likely exists. If this occurs on any device, contact NCF Installation Support before proceeding to the next section. Unresolved stale mounts can cause a significant delay in software installations.

B.2 Installation Procedure for the OB9 Software Upgrade

This section is the core installation. Complete each step as directed.

1. Execute the following script to install AWIPS application software updates. Ignore any `signature: NOKEY` warnings from the FSI installation.

   As user `root` on **DX1**, type:

   `script –a –f /local/install/installLinuxOB9.out`

   `cd /media/cdrecorder`

   `./installLinux_OB9` (Takes 70 to 100 minutes.)

   `exit`

2. Start the security patch installation script. This will start parallel installations in the background on all hosts for the security patches. Processes will be monitored in step 8 for completion.

   As user `root` on **DX1**, type:

   `script –a –f /local/install/installPatchesOB9.out`

   `cd /media/cdrecorder`

   `./installPatches_OB9` (Takes 1 to 3 minutes to kick off other scripts)

   `exit`

3. Execute the following script to install the Hydrology software. Ignore any `chmod` messages.

   As user `root` on **DX1**, type:

   `script –a –f /local/install/installOHOB9.out`

   `cd /media/cdrecorder`

   `./installOH_OB9` (WFO systems about 3 minutes; RFC systems 3 to 6 minutes)

   `exit`

4. **(WFO Systems only)** Execute the ADAPT and NWRWAVES scripts. Ignore `climate_HP.tar.gz` and `wwa_hp.tar.gz` error messages. Since the two scripts are short, use one output file for both scripts.

   As user `root` on **DX1**, type:

   `script –a –f /local/install/installAPTNWROB9.out`

   `cd /media/cdrecorder`

   `./installADAPT_OB9` (Takes < 1 minute.)

   `cd NWRWAVES`

   `./installNWRWAVES.sh` (Takes < 1 minute.)

   `exit`

5. Execute the AX script to update the Archive Server.

   As user `root` on **DX1**, type:

   `script –a –f /local/install/installAXOB9.out`

```
cd /media/cdrecorder
./installAX_OB9          (Takes 10 minutes for RFCs; only a few seconds at WFOs)
exit
```

6. **(Select systems only)** Execute the NMAP script.

NOTE:	Only the following sites should install the NMAP software: ACR, AFC, AFG, AJK, ALR, BCQ, EHU, FWR, GUM, HFO, KRF, MFL, MSR, NHCR, NHCW, NHDA, NHOR, NHOW, ORN, PBP, RHA, SJU, SPCW, TAR, TBDR, TIR, TUA, VHW, VRH, VUY, WNAW, WNOR, and WNOW.

As user `root` on **DX1**, type:

```
script –a –f /local/install/installNMAPOB9.out
cd /media/cdrecorder
./installNMAP_OB9                (Takes 5 to 10 minutes.)
exit
```

7. Check the status of the security patch installation script that was started in step 3. It takes approximately 15 minutes for the security patches to be installed on all hosts. The logs for each machine are located in `/data/fxa/INSTALL/ob9_sec_patches`. As user `root` on **DX1**, type:

```
cd /media/cdrecorder
./monitorPatches_OB9
```

Repeat the command in 5 minute intervals until all hosts report completed. If any system completes with errors, contact the NCF before proceeding.

CAUTION

Do not proceed until all hosts report completed.

8. Execute the post-install script. As user `root` on **DX1**, type:

```
script –a –f /local/install/postinstallOB9.out
cd /media/cdrecorder
./postinstall_OB9                (Takes 30 to 35 minutes.)
exit
```

9. **(Select systems only)** Execute the GFE Core script at sites that have different site IDs from localization IDs. For example, Southern Region Headquarters has a localization ID of FWD (Ft Worth WFO) and a site ID of EHU. In this case, the correct command to be used is
   `./masterGFEInstall FWD EHU`

NOTE:	Only the following sites should complete this step: BCQ, COMT, EHU, FSLC, NHCR, NHCW, NHDA, NHOR, NHOW, NMTR, NMTW, NTCA, NTCB, NTCC, NTCD, OSFW, PBP, SFMG, SPCW, TBDW, TBDR, TBW3, TBW4, VHW, VRH, VUY, WNAR, WNAW, WNCF, WNOR, and WNOW.

   As user `root` on **DX1**, type:

   `script –a –f /local/install/gfeCOREOB9.out`

   `cd /media/cdrecorder/gfe`

   `./masterGFEInstall LOCALIZATIONID SITEID` (Takes 5 to 10 minutes.)

   `exit`

   Operational WFOs and RFCs will complete step 10. Proceed to step 11 (for WFO Systems) or step 13 (for RFC Systems).

10. Execute the GFE Core script. The Localization ID (LLL) must be in upper case. As user `root` on **DX1**, type:

    `script –a –f /local/install/gfeCOREOB9.out`

    `cd /media/cdrecorder/gfe`

    `./masterGFEInstall LLL` (Takes 5 to 10 minutes.)

    `exit`

11. **(WFO Systems only)** Execute the IFPS install script. As user `root` on **DX1**, type:

    `script –a –f /local/install/installIFPSOB9.out`

    `cd /media/cdrecorder/ifps`

    `./installIFPS` (Takes about 5 minutes.)

    `exit`

12. **(WFO Systems only)** Execute the AVNFPS script. As user `root` on **DX1**, type:

    `script –a –f /local/install/installAVNFPSOB9.out`

    `cd /media/cdrecorder`

    `./installAVNFPS.sh /media/cdrecorder` (Takes < 1 minute.)

    `exit`

13. Unmount the DVD from the DX1 DVD-ROM drive. As user `root` on **DX1**, type:

    `cd /`

    `eject /dev/cdrom`

14. Remove the DVD from the DX1 CD-ROM drive.

B.3 Post Install

B.3.1 Restore the System

Complete or review the following steps to return the system to full operation.

1. Permit users to logon to AWIPS.
2. **(PACE sites)** Turn the PACE input back on.
3. **(ASOS sites)** Turn on the dial-in phone lines to allow ASOS to access LDAD.
4. **(Radar sites)** Send a message regarding the return to service of the radar.
5. **(RRS Sites)** Reconnect the Ethernet cable from the back of the RWS and reseat the Upper Air modem in the AWIPS modem rack.
6. Baseline crons (such as the px1cron) were delivered during the install. Verify crons such as climate are set to the proper run time.
7. Start the Mozilla browser and verify that servers and processes are processing normally.
8. Verify that radar products are being stored locally. Sites that send radar products should verify radar products are disseminated via the WAN by checking the following site: http://weather.noaa.gov/monitor/radar
9. Restore the CWSU connection, if applicable, and relay to CWSU staff of system availability.
10. Local devices can be reconnected to AWIPS as needed.

B.3.2 Notify the NCF

Contact the NCF and close the trouble ticket that was opened for the installation.

B.3.3 (WFO Systems Only) Update Customized WarnGen Templates

Additional information is included in Attachment C.

B.3.4 Review the OB9 GFE Changes Web Page

There are several changes to the Graphical Forecast Editor (GFE) application in OB9. The Forecast Decision Training Branch is maintaining a web page that documents the changes that are needed for each type of site. The GFE focal point must check the following site and make changes as needed: http://www.nws.noaa.gov/os/vtec/GFEOB9Changes.html

B.3.5 Verify New LDM Software

1. The LDAD Local Data Manager was upgraded to version 6.6.5-2. Restart the LDM process, and verify the software has been installed and customizations (if any) have been restored.
2. As user `root` from **LS2**, type:

```
su – ldm
ldmadmin stop
ldmadmin mkqueue -c
ldmadmin start
```

ps –ef | grep ldm

3. Verify the `ldm` process has restarted.

exit (returns to `root` on **LS2**)

ls -al /usr/local/ldm

4. Verify the link is pointing to `ldm-6.6.5.`

rpm -qa ldm

5. Verify the return is `ldm-6.6.5-2.AWIPS.OB9`.

ls -al /usr/local/ldm/etc

6. Verify local customizations have been restored.

ls -al /usr/local/ldm/data

7. Verify file `ldm.pq` has been recreated by the process restart.
8. As user `root` from **LS3**, type:

ls -al /usr/local/ldm

9. Verify the link is pointing to ldm-6.6.5.

rpm -qa ldm

10. Verify the return is ldm-6.6.5-2.AWIPS.OB9.

ls -al /usr/local/ldm/etc

11. Verify local customizations have been restored.

B.3.6 Update Customized Satellite File Changes (optional)

Customized satellite files were deactivated in Section B.1.5 as previous versions are incompatible. New customized versions can be created from the new baseline file to restore desired features as needed.

B.3.7 Procedure Patching

All sites that use procedures to display radar and volume browser data need to complete Attachment H to convert procedures to the new format/structure.

B.3.8 Run Backup Localization

A backup localization needs to be run (as user `fxa`) on each workstation before D2D and WarnGen can be used in backup mode. An example of the command to use is:

cd /awips/fxa/data/localization/scripts

./mainScript.csh f -WS *BBB LLL*

(Where *BBB* is the backup site and *LLL* is the local site ID.)

B.3.9 Modifications for permanent EKA SBN WAN routing

Due to microwave interference from AT&T, Satellite Broadcast Network (SBN) reception at WFO Eureka, CA (EKA) is now severely degraded. Since AT&T is legally licensed for the microwave spectrum they are using, this degradation will be permanent. As a result, NOAA has authorized a redesign of EKAs SBN data routing to use the CPSBN servers from their two WAN hubs. Consequently, the OB9 CP startup scripts were modified at all sites to look for and use a site-specific `acq_send_parms`. Any site that was previously using a site-specific `acq_send_parms` file can find the backed up copy at `/awips/data/acq_send_parms.sbn.LLL.preob9` (where *LLL* is the local site ID).

B.3.10 Check WHFS Crons

The OHD cron tables are defined for the DX1 and PX1 servers. During the installation, the OHD cron table for PX1 was saved off and replaced with OB9 baseline crons. The pre-OB9 version of `whfs_crontab_px1` in `/awips/hydroapps/whfs/local/bin` was saved to `whfs_crontab_px1.ob83` and the `whfs_crontab_px1.baseline` was copied to `whfs_crontab_px1`. Several new entries were added to the PX1 crontab, but no changes were made to the DX1 crontab. Compare the differences between the `.ob83` copy and the new cron and resolve any local differences as deemed appropriate.

New entries in PX1 baseline cron table:

```
run_SSHP_HPN_preprocess

run_SSHP_var

run_SSHP_SAC_state_update
```

B.3.11 Provide Comments (optional)

Send any comments, problems, or suggestions for improvements to the installation instructions to Sanford Garrard sanford.garrard@noaa.gov of the AWIPS Support Branch at NWS Headquarters in Silver Spring, MD.

ATTACHMENT C - WarnGen Changes

This attachment should be provided to the WarnGen focal point at each WFO.

Legacy (vintage OB8.3.1) customized WarnGen templates may be used temporarily after OB9 is installed. However, local customized changes should be merged with the new baseline templates as soon as practical. The OB9 WarnGen template changes affect fifteen templates. Almost all of the templates have major changes which implement Call-to-Action (CTA) markers. CTA markers are related to the future implementation of the Common Alerting Protocol (CAP) in NWS products.

Some additional changes made to the WarnGen code were also included in the OB8.3.2 release.

C.1 Templates Affected

The following templates were delivered to `/data/fxa/nationalData`:

`wwa_dam_break.preWWA`

`wwa_eww.preWWA`

`wwa_eww_svs.preWWA`

`wwa_ffw.preWWA`

`wwa_flflood_sta_county.preWWA`

`wwa_flflood_sta.preWWA`

`wwa_flood_adv.preWWA`

`wwa_flood_adv_sta.preWWA`

`wwa_flood_sta.preWWA`

`wwa_flood_wrn.preWWA`

`wwa_mar_wx_sta.preWWA`

`wwa_specmarine.preWWA`

`wwa_svr.preWWA`

`wwa_svrwx_sta_county.preWWA`

`wwa_tor.preWWA`

C.2 Implementation Strategy

Almost all of the commonly used WarnGen templates have major changes delivered in OB9. Therefore, the best method to implement the OB9 template changes would be to backup the site specific templates from `/data/fxa/customFiles`. Next, the baseline OB9 templates should be copied from `/data/fxa/nationalData` to `/data/fxa/customFiles`. The site specific changes should be made to the templates in `/data/fxa/customFiles`.

See http://www.nws.noaa.gov/os/vtec/WGCTA.html for more specific information.

After making the site specific template changes, localization needs to be run (as user `fxa`) on each workstation before WarnGen can be used. The following commands should be used:

```
cd /awips/fxa/data/localization/scripts
./mainScript.csh f –wwa
```

C.3 Description of Template Changes

The following template changes are included with the release:

1. Almost all WarnGen templates were changed to contain a marker that delineates the CTA section of the product. The marker is part of the planned NWS implementation of the Common Alerting Protocol (CAP). The marker allows NWS customers to find the CTAs using automated methods. The only commonly used template without the marker is the standalone Marine Weather Statement (template file `wwa_mws_nosmw.preWWA`). The marker consists of the text "PRECAUTIONARY/PREPAREDNESS ACTIONS…" that appears on a line by itself above the CTA section of the product. This change is documented in AWIPS Development Change Specification DCS 3494.

   Additional information on the required format of the CTA marker as well as specific OB9 examples can be found at http://www.nws.noaa.gov/os/vtec/WGCTA.html.

2. The WarnGen Areal Flood Warning and Areal Flood Advisory were changed to include a dash delimited list of county names in the segment heading. The list of county names is required by NWS Instruction 10-922 (effective July 17, 2007). The problem is documented in AWIPS Discrepancy Report DR 17349.

3. WarnGen followup statements in CWAs covering two time zones sometimes erroneously include two time zones in the headline, even if the warning covers only one time zone. The problem is corrected in the OB9 templates. The problem is documented in AWIPS Discrepancy Report DR 20216.

4. The WarnGen non convective (dam break) Flash Flood Warning template allows a different dam name to be selected when extending the warning in time (EXT). The dam name is locked in the OB9 template. The problem is documented in AWIPS Discrepancy Report DR 19942.

5. The WarnGen non convective (dam break) Flash Flood Warning template produces incorrect wording for the primary cause Ice Jam Break. The wording is corrected in the OB9 template. The problem is documented in AWIPS Discrepancy Report DR 18971.

6. The WarnGen non convective (dam break) Flash Flood Warning template produces incorrect wording for the primary cause Glacial Lake Dam Outburst. The wording is corrected in the OB9 template. The problem is documented in AWIPS Discrepancy Report DR 18970.

C.4 Line by Line Differences Between OB8.3.1 and OB9 WarnGen Templates

The following is annotated output (annotations in bold italics) from the Linux diff command showing the line by line differences between OB8.3.1 WarnGen templates and OB9 templates. Lines beginning with < are from OB8.3.1 and line beginning with > show the corresponding OB9 lines.

******* wwa_dam_break.preWWA *******

```
78,79c78,79
< {<PCAUSE>=GLACIAL LAKE= glacial lake dam outburst |
< <VAR |lead=A GLACIAL LAKE DAM OUTBURST |var=textCause>
---
> {<PCAUSE>= GLACIER-DAMMED LAKE OUTBURST= glacier-dammed lake outburst |
> <VAR |lead=GLACIER-DAMMED LAKE OUTBURST FLOODING |var=textCause>
87,88c87,88
< {<PCAUSE>=ICE JAM= ice jam break |
< <VAR |lead=AN ICE JAM BREAK |var=textCause>
```

```
---
> {<PCAUSE>=ICE JAM= ice jam |
> <VAR |lead=ICE JAM FLOODING |var=textCause>
114c114,116
< {****** CALLS TO ACTION (choose 1 or more) ****** [lock X.eq.X]| }
---
> { ****** CALLS TO ACTION (choose 1 or more) ****** [lock X.eq.X]| }
>
> {= ^No call to action |}
321a324,327
> { [$$CTA_TAG!.eq.TRUE] |
> PRECAUTIONARY/PREPAREDNESS ACTIONS...
> }
>
353a360,363
> { [$$CTA_TAG!.eq.TRUE] |
> \&\&
> }
>
```

******* wwa_eww.preWWA *******

```
187c187,193
< {******* CALLs TO ACTION (CHOOSE 1 OR MORE) ******* |}
---
> { ****** CALLS TO ACTION (CHOOSE 1 OR MORE) ****** | }
>
> { [$$CTA_TAG!.eq.TRUE] |
> PRECAUTIONARY/PREPAREDNESS ACTIONS...
> }
>
> {= ^No call to action |}
198c204
< {= CTA - Take cover now |
---
> {= Take cover now |
204c210
< {= CTA - Safe places to be |
---
> {= Safe places to be |
212d217
<
215a221,224
> { [$$CTA_TAG!.eq.TRUE] |
> \&\&
> }
>
```

******* wwa_eww_svs.preWWA *******

```
186c186,195
```

```
< {******** CALLs TO ACTION (CHOOSE 1 OR MORE) ******* |}
---
> { ****** CALLS TO ACTION (CHOOSE 1 OR MORE) ****** |}
>
> <VAR |test=$$CTA_TAG!.eq.TRUE |test=$$ACT_VAL!.eq.CON
>      |value=TRUE |value=FALSE |var=cta_tag>
>
> { [$$cta_tag!.eq.TRUE] |
> PRECAUTIONARY/PREPAREDNESS ACTIONS...
> }
>
> {= ^No call to action [show $$ACT_VAL!.eq.CON]|}
197c206
< {= CTA - Take cover now [show $$ACT_VAL!.eq.CON]|
---
> {= Take cover now [show $$ACT_VAL!.eq.CON]|
203c212
< {= CTA - Safe places to be[show $$ACT_VAL!.eq.CON] |
---
> {= Safe places to be[show $$ACT_VAL!.eq.CON] |
229d237
<
231a240,243
> { [$$cta_tag!.eq.TRUE] |
> \&\&
> }
>
```

******* wwa_ffw.preWWA *******

```
161a162,167
> { [$$CTA_TAG!.eq.TRUE] |
> PRECAUTIONARY/PREPAREDNESS ACTIONS...
> }
>
> {= ^No call to action |}
>
258a265,268
> { [$$CTA_TAG!.eq.TRUE] |
> \&\&
> }
>
```

******* wwa_flflood_sta_county.preWWA *******

```
11a12
> <AREA |file=wwa_timezone |area=wwa_counties |timezone>
266c267,276
< {= automated list of drainages |
---
> <VAR |test=$$CTA_TAG!.eq.TRUE |test=$$ACT_VAL!.eq.CON
```

```
>      |value=TRUE |value=FALSE |var=cta_tag>
>
> { [$$cta_tag!.eq.TRUE] |
> PRECAUTIONARY/PREPAREDNESS ACTIONS...
> }
>
> {= ^No call to action [show $$ACT_VAL!.eq.CON]|}
>
> {= automated list of drainages [show $$ACT_VAL!.eq.CON]|
448d457
<
450a460,463
> { [$$cta_tag!.eq.TRUE] |
> \&\&
> }
>
```

******* wwa_flflood_sta.preWWA *******

```
11a12
> <AREA |file=wwa_timezone |area=wwa_counties |timezone>
34,36c35,37
< {<PCAUSE>= A GLACIAL LAKE DAM OUTBURST= glacial lake dam outburst |
< <VAR |lead=A GLACIAL LAKE DAM OUTBURST |var=textCause>
< <VAR |value=A GLACIAL LAKE DAM OUTBURST IS CAUSING FLOODING
AT...!**LOCATIONS**!|var=textCause2>
---
> {<PCAUSE>= GLACIER-DAMMED LAKE OUTBURST= glacier-dammed lake outburst |
> <VAR |lead=GLACIER-DAMMED LAKE OUTBURST FLOODING |var=textCause>
> <VAR |value=A GLACIER-DAMMED LAKE OUTBURST IS CAUSING FLOODING
AT...!**LOCATIONS**!|var=textCause>
46c47
< <VAR |value=HIGH RELEASES FROM !**dam or reservoir name**! ARE CAUSING
FLOODING AT...!**LOCATIONS
---
> <VAR |value=HIGH RELEASES FROM !**dam or reservoir name**! ARE CAUSING
FLOODING AT...!**LOCATIONS>
49,50c50,51
< {<PCAUSE>=AN ICE JAM BREAK= ice jam break |
< <VAR |lead=AN ICE JAM BREAK |var=textCause>
---
> {<PCAUSE>=ICE JAM= ice jam |
> <VAR |lead=ICE JAM FLOODING |var=textCause>
61c62
< <VAR |value=SNOWMELT TRIGGERED BY THE ERUPTION OF !**volcano name**! IS
CAUSING FLOODING IN...!**
---
> <VAR |value=SNOWMELT TRIGGERED BY THE ERUPTION OF !**volcano name**! IS
CAUSING FLOODING IN...!**>
64c65
< {****** CALLS TO ACTION (choose 1 or more) ****** [lock X.eq.X]| }
```

```
---
> { ****** CALLS TO ACTION (choose 1 or more) ****** [lock X.eq.X]| }
66c67,72
< {= automated list of drainages |
---
> <VAR |test=$$CTA_TAG!.eq.TRUE |test=$$ACT_VAL!.eq.CON
>      |value=TRUE |value=FALSE |var=cta_tag>
>
> {= ^No call to action [show $$ACT_VAL!.eq.CON] |}
>
> {= automated list of drainages [show $$ACT_VAL!.eq.CON] |
247a254,257
> { [$$cta_tag!.eq.TRUE] |
> PRECAUTIONARY/PREPAREDNESS ACTIONS...
> }
>
279a290,293
> { [$$cta_tag!.eq.TRUE] |
> \&\&
> }
>
```

******* wwa_flood_adv.preWWA *******

```
67a68
> &<LINE_DEL|-><AREA |file=wwa_counties |format=simple
|item_format=[0,st][99,-]>
91a93,98
> { [$$CTA_TAG!.eq.TRUE] |
> PRECAUTIONARY/PREPAREDNESS ACTIONS...
> }
>
> {= ^No call to action |}
>
149a157,160
> { [$$CTA_TAG!.eq.TRUE] |
> \&\&
> }
>
```

******* wwa_flood_adv_sta.preWWA *******

```
9a10
> <AREA |file=wwa_timezone |area=wwa_counties |timezone>
117c118,127
< {= automated list of drainages |
---
> <VAR |test=$$CTA_TAG!.eq.TRUE |test=$$ACT_VAL!.eq.CON
>      |value=TRUE |value=FALSE |var=cta_tag>
>
> { [$$cta_tag!.eq.TRUE] |
```

```
> PRECAUTIONARY/PREPAREDNESS ACTIONS...
> }
>
> {= ^No call to action [show $$ACT_VAL!.eq.CON] |}
>
> {= automated list of drainages [show $$ACT_VAL!.eq.CON] |
176a187,190
> { [$$cta_tag!.eq.TRUE] |
> \&\&
> }
>
```

******* wwa_flood_sta.preWWA *******

```
9a10
> <AREA |file=wwa_timezone |area=wwa_counties |timezone>
128c129,138
< {= automated list of drainages |
---
> <VAR |test=$$CTA_TAG!.eq.TRUE |test=$$ACT_VAL!.eq.CON
>      |value=TRUE |value=FALSE |var=cta_tag>
>
> { [$$cta_tag!.eq.TRUE] |
> PRECAUTIONARY/PREPAREDNESS ACTIONS...
> }
>
> {= ^No call to action [show $$ACT_VAL!.eq.CON] |}
>
> {= automated list of drainages [show $$ACT_VAL!.eq.CON] |
214a225,228
> { [$$cta_tag!.eq.TRUE] |
> \&\&
> }
>
```

******* wwa_flood_wrn.preWWA *******

```
70a71
> &<LINE_DEL|-><AREA |file=wwa_counties |format=simple
|item_format=[0,st][99,-]>
99a101,106
> { [$$CTA_TAG!.eq.TRUE] |
> PRECAUTIONARY/PREPAREDNESS ACTIONS...
> }
>
> {= ^No call to action |}
>
186a194,197
> { [$$CTA_TAG!.eq.TRUE] |
> \&\&
> }
```

```
>
```

******* wwa_mar_wx_sta.preWWA *******

```
182c182
< {  *****Call to Action SECTION*****...(Choose 1) | }
---
> { ****** CALLS TO ACTION (CHOOSE 1 OR MORE) ****** | }
186a187,195
> <VAR |test=$$CTA_TAG!.eq.TRUE |test=$$ACT_VAL!.eq.CON
>      |value=TRUE |value=FALSE |var=cta_tag>
>
> { [$$cta_tag!.eq.TRUE] |
> PRECAUTIONARY/PREPAREDNESS ACTIONS...
> }
>
> {= ^No call to action [show $$ACT_VAL!.eq.CON] |}
>
241a251,254
> { [$$cta_tag!.eq.TRUE] |
> \&\&
> }
>
```

******* wwa_specmarine.preWWA *******

```
157c157,163
< {  *****Call to Action SECTION*****...(Choose 1) | }
---
> { ****** CALLS TO ACTION (CHOOSE 1 OR MORE) ****** | }
>
> { [$$CTA_TAG!.eq.TRUE] |
> PRECAUTIONARY/PREPAREDNESS ACTIONS...
> }
>
> {= No call to action |}
196a203,206
> { [$$CTA_TAG!.eq.TRUE] |
> \&\&
> }
>
```

******* wwa_svr.preWWA *******

```
213c213,219
< {******** CALL TO ACTIONS (CHOOSE 1 OR MORE) ******* |}
---
> { ****** CALLS TO ACTION (CHOOSE 1 OR MORE) ****** | }
>
> { [$$CTA_TAG!.eq.TRUE] |
> PRECAUTIONARY/PREPAREDNESS ACTIONS...
```

```
> }
>
> {= ^No call to action |}
288d293
<
290a296,299
> { [$$CTA_TAG!.eq.TRUE] |
> \&\&
> }
>
```

******* wwa_svrwx_sta_county.preWWA *******

```
11a12
> <AREA |file=wwa_timezone |area=wwa_counties |timezone>
245c246,255
< {******** CALL TO ACTIONS (CHOOSE 1 OR MORE) ******* |}
---
> { ****** CALLS TO ACTION (CHOOSE 1 OR MORE) ****** | }
>
> <VAR |test=$$CTA_TAG!.eq.TRUE |test=$$ACT_VAL!.eq.CON
>      |value=TRUE |value=FALSE |var=cta_tag>
>
> { [$$cta_tag!.eq.TRUE] |
> PRECAUTIONARY/PREPAREDNESS ACTIONS...
> }
>
> {= ^No call to action [show $$ACT_VAL!.eq.CON]|}
432d441
<
434a444,447
> { [$$cta_tag!.eq.TRUE] |
> \&\&
> }
>
```

******* wwa_tor.preWWA *******

```
168c168,174
< {******* CALL TO ACTIONS (CHOOSE 1 OR MORE) ******* |}
---
> { ****** CALLS TO ACTION (CHOOSE 1 OR MORE) ****** | }
>
> { [$$CTA_TAG!.eq.TRUE] |
> PRECAUTIONARY/PREPAREDNESS ACTIONS...
> }
>
> {= No call to action |}
245a252,255
> { [$$CTA_TAG!.eq.TRUE] |
> \&\&
```

```
> }
>
```

ATTACHMENT D - NDM Files Downloaded in OB9

The following National Data Management (NDM) files are downloaded from the NOAA1 server for the OB9 installation:

```
dataInfo.manual
depictInfo.manual
productButtonInfo.txt
redbookHPCMenus.txt
rps-SPGOP-tcp.storm
tdwrFsiScanOrder.txt
tdwrProdList.txt
textCategoryClass.txt
textNNNhelp.txt
arsrRadars.txt
asrRadars.txt
moveob9files.sh
```

ATTACHMENT E - Procedure for Installing the AWIPS-Provided PGI Fortran Compiler

These installation procedures apply only to River Forecast Centers (RFC), and are optional for the RFCs.

With OB9, AWIPS is upgrading the PGI Fortran compiler to version 7.2-4. The AWIPS program maintains one active license subscription for each RFC. A compressed tarfile ("tarball") containing the upgraded compiler is included on the OB9 distribution media. These procedures provide general guidance on installing the new compiler version and setting up the licensing.

The RFCs that have installed the AWIPS-provided Fortran compiler have installed it on different hosts and in different directories. Given that variation, sites will probably have to modify these procedures to suit their particular configurations.

Note the following file and directory sizes:

1. pgilinux-724.tar.gz	262,907,691	bytes
2. expanded tarball	853,925,652	bytes
3. completed installation	249,810,387	bytes

The tarball (item 1) can be expanded from the DVD. The directory hierarchy holding the expanded tarball (item 2) and the hierarchy holding the completed installation (item 3) will both be present during installation, but they need not be on the same file system (aka disk partition). The expanded tarball can be deleted after installation is complete.

User actions other than commands are enclosed in angle brackets (<>).

Commands are indicated by a leading sharp sign (#).

Unless otherwise indicated, all commands should be executed from a `root` login on the **AX** machine.

Assumptions:

Installing on **AX**.

Temporary install directory is `/data/local/tmpPgiInstallDir`.

Installation directory is `/opt/pgi`.

E.1 Procedure

If there is an existing PGI Fortran installation on the AX, start by removing its license manager. Note that if there is other licensed software running on the AX, the site will have to consult the documentation for that software to ensure that it will run with the new license manager. Execute the following four commands to shut down the old license manager and remove it.

```
# cd /etc/init.d
# ./lmgrd stop
# chkconfig --del lmgrd
# rm /etc/init.d/lmgrd
```

If there is an existing PGI Fortran installation in `/opt/pgi`, delete it or move it aside before proceeding.

Insert the DVD into the DVD drive on the **AX** machine.

```
# mount /media/cdrecorder
# export TMPDIR=/data/local/tmpPgiInstallDir
# mkdir $TMPDIR
# cd $TMPDIR
# tar zxf /media/cdrecorder/pgilinux-724.tar.gz
# ./install
```

<Respond to the prompts. The following information is correct for most RFC installations:

Single system install.

Do not install ACML (suppport for AMD processors).

Do not install MPICH1 (message passing library for parallel computing). >

```
# cd
# rm -rf $TMPDIR
# eject /dev/hda
```

<Remove the DVD from the drive>

```
# cd /opt/pgi/linux86/7.2/bin
# ./lmutil lmhostid > hostid.txt
```

The `lmutil` command executed above will emit copyright information and the "FLEXnet host ID" of the installation host. Email the machine's host name (usually `ax-<siteId>`) and the FLEXnet host ID to stowell.davison@noaa.gov. He will request a license key file from PGI and stage the file in `ax:/home/ncfuser/davison/license.dat`. That may take a couple of days. Davison will notify the site when the `license.dat` file is ready. Inspect the file to be sure that the host name and the FLEXnet host ID in the first line of the file are correct.

```
# export PGI=/opt/pgi
# cp /home/ncfuser/davison/license.dat $PGI/license.dat
# chmod 0444 $PGI/license.dat
```

<The lmgrd license manager daemon is installed in the next few steps. It is possible, although not likely, that the site is running other license-managed software that may be controlled by a previously-installed version of lmgrd. In that case, do not execute the following steps. Consult the software documentation to find out how to get lmgrd to support all licensed software at the site.>

```
# cp $PGI/linux86/7.2/bin/lmgrd.rc /etc/rc.d/init.d/lmgrd
# cd /etc/init.d
# chkconfig --add lmgrd
# ./lmgrd start
```

That completes the installation process.

E.2 User Setup

Users of the PGI Fortran compiler should set the following environment variables:

```
export PGI=/opt/pgi
```

```
export MANPATH=$MANPATH:$PGI/linux86/7.2/man
export LM_LICENSE_FILE=$PGI/license.dat
export PATH=$PGI/linux86/7.2/bin:$PATH
```

Any PATH elements referring to an old PGI Fortran installation should be removed from the PATH definition .

E.3 Library cleanup

Some RFCs may run the executables they build on the machine where the compiler is installed. If this is not the case, then `libpgc.so` will need renamed so that built executables will statically link `libpgc` instead of dynamically linking it. If this does not occur, then the binary will expect the library to be on the runtime machine, which will not be the case.

```
cd /opt/pgi/linux86/7.2/lib
mv libpgc.so  libpgc.so.orig
```

Attach a keyboard and monitor to the device in order to monitor or perform a Linux Rescue procedure.

ATTACHMENT F - High-resolution Precipitation Nowcaster (HPN)

These installation procedures apply only to River Forecast Centers (RFCs), and they are optional for the RFCs.

In OB9, the High-resolution Precipitation Nowcaster (HPN) was added to the High-resolution Precipitation Estimator (HPE) as part of OB8.3. The following installation notes should be considered.

F.1 RFCs Not Running HPE

As part of its requirements, HPN produces a 1-hour precipitation accumulation forecast near the top of the hour in support of the Site Specific Hydrologic Predictor (SSHP). If RFCs would like to use this forecast grid and are not currently producing HPE grids, they should follow the procedures and recommendations below:

F.1.1 Cron Modification

For OB8.3, AWIPS Software Note 75, section B.3.8 indicated the following parts of the whfs_crontab_px1 file were optional for RFCs:

```
DHRgather (WFO only, optional at RFCs)
DSPgather (WFO only, optional at RFCs)
purge_hpe_files (WFO only, optional at RFCs)
```

Specifically, this section was recommended to be commented out at RFCs:

```
# High-resolution Precipitation Estimator (HPE) radar data gather crons
# (at WFOs only, optional at RFCs)
# Checks for new Digital Hybrid Reflectivity (DHR) and
# Digital Storm total Precipitation (DSP) products every minute
#
*/1 * * * * /awips/hydroapps/precip_proc/bin/DHRgather
*/1 * * * * /awips/hydroapps/precip_proc/bin/DSPgather
#
# HPE purge script (does not access PostgreSQL db)
#
8,38 * * * * /awips/hydroapps/precip_proc/bin/purge_hpe_files
```

While there are no changes to this crontab file for OB9, RFCs should uncomment these lines in this crontab file so HPE (and therefore HPN) will start and produce HPE/HPN grids if RFCs wish to have the grid for SSHP produced.

This cron will then run every minute to call the DHRgather and DSPgather scripts and every half hour at 8 and 38 minutes past the hour to call the purge_hpe_files scripts.

F.1.2 Token Modification

RFCs should use/modify the /awips/hydroapps/.Apps_defaults_site file to change these tokens from their defaults to the following:

```
hpe_rate_save_grib          : nosave
hpe_brate_save_grib         : nosave
hpe_tp1h_save_grib          : nosave
hpe_btp1h_save_grib              : nosave
nowcast_d2d_display_grib    : OFF
```

This is only if RFCs are not already producing HPE grids and if they don't want to save them in GRIB1 format nor display them in D-2D.

If the above tokens are set to save and the nowcast_d2d_display_grib token is set to ON, it is highly recommended changing the following token as well to this value:

```
hpe_runfreq          :  15
```

This will reduce the HPE/HPN run frequency to approximately every 15 minutes at RFCs instead of every 5 at WFO sites. This would greatly impact the number of grids produced as discussed in the next section.

F.2 RFCs Running HPE

For OB9, RFCs running HPE and saving them for display in AWIPS D2D could potentially experience disk space problems as the estimated file storage requirements increased significantly with the addition of HPN grids to HPE. The following represents the estimated increases in disk space for the HPE/HPN grids:

WFO:

```
/awips/hydroapps – 0.414 GB
/data/fxa        - 3.5 GB
```

RFC:

```
/awips/hydroapps – 2.85 GB
/data/fxa        - 23.3 GB
```

If RFCs do not wish to display the HPE/HPN grids via D2D and have set the options for the grib files to not be saved in the paragraphs above, then only the storage requirements for the /awips/hydroapps partition applies. This is recommended so disk space in the /data/fxa partition does not pose a problem.

If RFCs do wish to display the HPE/HPN grids via D2D and have set the options for the grib files to be saved instead (or are already doing so), then it is highly recommended to set the hpe_runfreq token to 15 minutes instead of the default value of 5. This will reduce the amount of space needed in the /data/fxa partition from the 23.3 GB value to roughly 7 GB without overly impacting the HPE/HPN grids.

F.3 Other Token Settings to Consider

- When HPE is active the default behavior is to have the `xmrg` files saved as GRIB1 files. These HPE tokens could be set to `nosave` if the site does not require the GRIB1 files:

```
dhrmosaic_save_grib:  nosave
bdhrmosaic_save_grib    :  nosave
ermosaic_save_grib      :  nosave
ebmosaic_save_grib      :  nosave
```

These could be set in other combinations depending on site configuration.

- HPE default behavior is to display its grids to D-2D. If this is not desired, then sites can change those tokens to `OFF`:

```
dhrmosaic_d2d_display_grib    : OFF
ermosaic_d2d_display_grib     : OFF
ebmosaic_d2d_display_grib     : OFF
bdhrmosaic_d2d_display_grib   : OFF
```

This will greatly reduce the amount of disk storage space required within the `/data/fxa` partition.

- Upon installation, HPN will be turned on by default. Sites not wishing to have the HPN grids created can turn them off by setting the `run_nowcaster` token accordingly:

```
hpe_run_nowcast         : OFF
```

ATTACHMENT G - Preturnkey HazardsTable in GFE (AK only)

These installation procedures apply only to Alaska Region Sites.

In order for Alaska to keep the CWF and CWF_Pacific running with the OB8.3 functionality under OB9, the following changes need to be made at each site:

1. Add an `allowedHazard()` function into the CWF_AR_Overrides and CWF_Pacific_AR_Overrides text utility file. The entry should be after the `def__init__(self)` function and indented the same amount.
2. The contents of the `allowedHazard()` function should be:

```
def allowedHazards(self):
  allActions = ["NEW", "EXA", "EXB", "EXT", "CAN", "CON", "EXP"]
  marineActions = ["NEW", "EXA", "EXB", "EXT", "CON"]
  tropicalActions = ["NEW", "EXA", "EXB", "EXT", "CON", 'CAN', 'UPG',
'EXP']

  return [
      ('HF.W', marineActions, 'Marine'),   # HURRICANE FORCE WIND WARNING
      ('SR.W', marineActions, 'Marine'),      # STORM WARNING
      ('GL.W', marineActions, 'Marine'),      # GALE WARNING
      ('SE.W', marineActions, 'Marine'),      # HAZARDOUS SEAS
      ('UP.W', marineActions, 'IceAccr'),  # HEAVY FREEZING SPRAY WARNING
      ('RB.Y', marineActions, 'Marine'),   # ROUGH BAR
      ('SI.Y', marineActions, 'Marine'),   # SMALL CRAFT ADVISORY
      ('SC.Y', marineActions, 'Marine'),       # SMALL CRAFT ADVISORY
      ('SW.Y', marineActions, 'Marine'),       # SMALL CRAFT ADVISORY
      ('BW.Y', marineActions, 'Marine'),       # BRISK WIND ADVISORY
      ('FG.Y', marineActions, 'Fog'),        # DENSE FOG ADVISORY
      ('SM.Y', marineActions, 'Smoke'),      # DENSE SMOKE ADVISORY
      ('UP.Y', marineActions, 'IceAccr'),    # FREEZING SPRAY ADVISORY
      ('AF.Y', marineActions, 'Ashfall'),    # VOLCANIC ASHFALL ADVISORY
      ('TO.A', marineActions, 'Convective'), # TORNADO WATCH
      ('SV.A', marineActions, 'Convective'), # SEVERE THUNDERSTORM WATCH
      ('LO.Y', marineActions, 'LowWater'),   # LOW WATER ADVISORY
      ]
```

3. The `allowedHazard()` override will make the CWF and CWF_Pacific formatters use the same hazard types as OB8.3.

4. The MakeHazard procedure that comes with OB9 contains additional hazards that Alaska will not be generating for OB9, such as Gale Watch. It is optional, but it may be a good idea to remove these unused hazards from the Alaska version of MakeHazard.

NOTE: Since Alaska Region does not currently use VTEC in the CWF, and does not plan to use VTEC in the CWF until after the Alaska's switch to MWW, the ROU codes that were taken out of the CWF in OB9 but still in OB8.3 do not need to be reactivated. This allows the OB9 version of HazardsTable to be used to maintain OB8.3 compatibility -- just as long as VTEC is not enabled for the CWF. Conversations with Duane Carpenter and Aimee Fish in May/June 2008 indicate that they do not plan on enabling VTEC in the CWF prior to their MWW activation. If this plan changes, then additional work will be necessary to bring back the ROU VTEC codes.

Here is an example of the regional overrides CWF_AR_Overrides.TextProduct file with the changes. The actual file may contain other regional overrides.

```
# ----------------------------------------------------------------------
# This software is in the public domain, furnished "as is", without
# technical  support, and with no warranty, express or implied, as to
# its usefulness for any purpose.
#
# CWF_AR_Overrides
#
#  This file provides any product specific regional overrides for the
#  CWF product.  This file is under configuration control by
#  the region and should not be edited by the site.
#
# Definition Section:
#   Overrides:
#   Additions:
#
# Methods:
#   Overrides:
#   Additions:
#
# ----------------------------------------------------------------------

import string, time, re, os, types, copy, AFPS
import TextRules, SampleAnalysis
```

```
# Define Regional overrides of Product Definition settings and
# default values of additional Regional Definition settings
#  ( This Definition section must be before the Class definition)

#***** THIS NEXT LINE IS REQUIRED *****
Definition = {}

########################################################
# Override VariableList if desired
#
#VariableList = []
#
# AR Definitions:
# Definition statements must start in column 1

### Regional settings of baseline options: ###

#Definition["displayName"] = "CWF_AR"

### New Regional Definitions not in the baseline ###

# END AR definitions
############################################################

#*************************************************************************
# MAKE NO CHANGES HERE
# The minimum contents of this file are the above Definition = {} line
# plus following class definition and the __init__ method with only
# the "pass" line in it.

class CWF_AR_Overrides:
    """Class NNN_FILETYPE - Version: IFPS"""

    def __init__(self):
```

```
        pass

    def allowedHazards(self):
        allActions = ["NEW", "EXA", "EXB", "EXT", "CAN", "CON", "EXP"]
        marineActions = ["NEW", "EXA", "EXB", "EXT", "CON"]
        tropicalActions = ["NEW", "EXA", "EXB", "EXT", "CON", 'CAN',
'UPG',
          'EXP']

        return [
   ('HF.W', marineActions, 'Marine'),      # HURRICANE FORCE WIND WARNING
   ('SR.W', marineActions, 'Marine'),      # STORM WARNING
   ('GL.W', marineActions, 'Marine'),      # GALE WARNING
   ('SE.W', marineActions, 'Marine'),      # HAZARDOUS SEAS
   ('UP.W', marineActions, 'IceAccr'),  # HEAVY FREEZING SPRAY WARNING
   ('RB.Y', marineActions, 'Marine'),   # ROUGH BAR
   ('SI.Y', marineActions, 'Marine'),   # SMALL CRAFT ADVISORY
   ('SC.Y', marineActions, 'Marine'),       # SMALL CRAFT ADVISORY
   ('SW.Y', marineActions, 'Marine'),       # SMALL CRAFT ADVISORY
   ('BW.Y', marineActions, 'Marine'),       # BRISK WIND ADVISORY
   ('FG.Y', marineActions, 'Fog'),        # DENSE FOG ADVISORY
   ('SM.Y', marineActions, 'Smoke'),      # DENSE SMOKE ADVISORY
   ('UP.Y', marineActions, 'IceAccr'),    # FREEZING SPRAY ADVISORY
   ('AF.Y', marineActions, 'Ashfall'),    # VOLCANIC ASHFALL ADVISORY
   ('TO.A', marineActions, 'Convective'), # TORNADO WATCH
   ('SV.A', marineActions, 'Convective'), # SEVERE THUNDERSTORM WATCH
   ('LO.Y', marineActions, 'LowWater'),   # LOW WATER ADVISORY
            ]


# End MAKE NO CHANGES HERE
#*********************************************************************
    # Add methods here making sure to indent inside the class statement
    # AR CWF Overrides ------------------------
```

```
    # It is helpful to put a debug statement at the beginning of each
    # method to help with trouble-shooting.
    #def _method(self):
        #self.debug_print("Debug: _method in CWF_AR_Overrides")
```

ATTACHMENT H - Procedure Patching

For sites that use procedures to display radar and volume browser data, complete the steps below to convert to the new structure/format for procedures. Any local Volume Browser customizations should be reintegrated before proceeding with the patching.

1. Set permissions on all procedures. As user `root` on **DX1**, type:

   `cd /data/fxa`

   `chmod -R 775 userPrefs`

2. Back up procedures. As user `fxa` on **LX1**, type:

   `script –a –f /tmp/procedurepatchOB9.out`

   `/awips/fxa/bin/backUpProcedures`

   Type **`y`** at the prompts.

3. Convert the copy of the backed up procedures to the new format. As user `fxa` on **LX1**, type:

   `/awips/fxa/bin/patchBackUpProcs -c`

   Type **`go`** at the prompt.

   `exit` (Exits script log output file.)

   At this point, the OB8.3.1 format of the procedures continues to be active at each workstation. The backed up set of procedures is in the new OB9 format. The next script is a toggle script that swaps the procedures on only one workstation, so that the new OB9 format can be checked out before activating on all workstations.

4. Swap from the OB8.3.1 to the OB9 formatted procedures on one workstation to check OB9 format of procedures. This example uses LX1, but it can be any workstation that is available for testing. As user `fxa` on **LX1**, type:

   `/awips/fxa/bin/selectProcs b`

   The b switch configures the workstation to use the backup procedures.

5. On the workstation used in step 4, start a D2D session and verify the backup procedures are active. Activate the new procedure directory by selecting User ID from the **File** -> **Select User ID** menu. The best way to verify is to look on the D2D title bar and confirm there is a `bu___` prefix to the user name. If the prefix is not displayed, make sure the workstation in step 4 and step 5 is the same.

6. Perform a brief “sanity check” on the OB9 formatted procedures. The procedures should display the same as OB8.3.1 as the changes are in the code rather than the display. If the procedures look okay, proceed to the next steps to activate the OB9 formatted procedures on all workstations.

7. Swap from the OB9 back to the OB8.3.1 formatted procedures on the workstation used in steps 4 and 5. This example uses LX1. As user `fxa` on **LX1**, type:

   `/awips/fxa/bin/selectProcs`

   The absence of the b switch will configure the workstation to use the regular procedures.

8. Run the script to make the OB9 formatted procedures the active procedures on all workstations and put the OB8.3.1 formatted procedures as the backup procedures. As user `fxa` on **LX1**, type:

   `/awips/fxa/bin/installPatchedProcs`

   If an error displays saying the procedures have already been swapped, rerun the command with an **`r`** argument.

This completes the procedure patching process.

ATTACHMENT I - Sample EMRS Report