

## CHAPTER 2 – MONTHLY DATA COLLECTION AND TRANSMISSION

### 2.1 FPU Data File Exchange Requirements and Tasks:

#### 2.1.1. NWSREP Responsibilities:

As NWSREP your major responsibility will be to manage the exchange of the red plastic data keys with your Observers. You must mail a new key to all your Observers on or about the 25<sup>th</sup> of each month as a matter of priority. This will ensure each Observer will again have a key in his possession on or about the day he mails you his monthly file.

The Observer is instructed to download FPU data anytime in the first five calendar days of the month, yet not before 12AM on the first day of the month. You should work a monthly Data Key Log Sheet (see template below) to journal the date on which you mailed each of your Observers their new data key. You will need to log the date you have opened the envelope containing the Observer’s reporting key (3<sup>rd</sup> column in Log Sheet). The term ‘Reporting Key’ refers to any key an Observer sends you, filled with the most recent month’s records, but has yet to be uploaded via Coastal’s Key Reader to produce a Comma Separated Value (CSV) file. The term ‘New Key’ applies to a data key only after the key was uploaded and produced a CSV file, and you have logged the key to the ‘upload column’ in the Data Key Log Sheet (see table, third column).

**Data Key Log Sheet**

Month Ending	COOP Station Name	Mailed-out 'New Key' to Observer?	Verify the 'Reporting Key'?	Upload 'Reporting Key' to Coastal Key Reader?	Transfer CSV file to NWS workstation?
<b>J U N E  3 0  2 0 0 5</b>	Hilldale Lake	June 25 <sup>th</sup>	July 6 <sup>th</sup>	July 6 <sup>th</sup>	July 25 <sup>th</sup>
	Stanley 2E	June 25 <sup>th</sup>	July 8 <sup>th</sup>	July 8 <sup>th</sup>	July 25 <sup>th</sup>
	Cladstone	June 25 <sup>th</sup>	July 5 <sup>th</sup>	July 5 <sup>th</sup>	July 25 <sup>th</sup>
	Elm	June 25 <sup>th</sup>	July 7 <sup>th</sup>	July 7 <sup>th</sup>	July 25 <sup>th</sup>
	Kirkville	June 25 <sup>th</sup>	<b>Not In Yet:</b> Phoned him on 7/20, he'll send 2 <sup>nd</sup> key.	<b>NOT as of 7/25.</b>	<b>NOT as of 7/25!</b>
Londbranch Reservoir	June 25 <sup>th</sup>	July 5 <sup>th</sup>	July 5 <sup>th</sup>	July 25 <sup>th</sup>	

**Important:** If you have not received the Observer’s data key by the 10<sup>th</sup> day of month, phone the Observer to inform him you are missing his key, and ask if he had any difficulties or was simply behind in mailing. On the 20<sup>th</sup> review the Data Key Log Sheet to identify any key still missing, if so, phone that Observer a second time. If the Observer does not have a phone, or Institution Observer’s automated phone attendant prevents direct conversation, then mail a letter to the attention of the Observer, to have him mail the Data Key.

**Note:** Data keys are to be unlabeled when you mail them to the Observer, and the Observer is not required to label any key at any time.

**Note:** Each Data Key generates just one data file. The data file is automatically given a filename by Coastal's Key Reader software. You may not rename any data file either in the current month's, or the past months' HPD directory sub-folders.

**Note:** Keep at least one 'blank' Data Key in the WFO at all times. **For NWSREPs who manage 10 or more FPU systems, a practical minimum number of spare Data Keys, might be five (5).**

Your next major responsibility is to transmit the monthly FPU precipitation records to the NCDC before the 30<sup>th</sup> or last day of each month. For rare occasions, when the Observer was unable to mail the key or was instructed by the WFO to postpone a download to data key, the date of your transmitting the FPU file may be extended by one or two weeks. The intention here is to limit unnecessary FTP transmissions and to simplify your data key tracking work.

### 2.1.2. Observer Responsibilities:

**Data Key Exchange:** Emphasize to your Observer how his major responsibility is to be the full-time 'keeper' of the FPU Data Key. He will need the Data Key at the start of each month to download precipitation for mailing to you in the WFO. His full-time awareness of the location of this small red plastic Data Key is essential.

The Observer needs to understand how you will use the United States Postal Service (USPS) standard mailing class to send a 'blank' Data Key to the Observer's preferred mailing address. This new Data Key will be mailed each month in the usual NWS marked envelope and will be scheduled to arrive in Observer's mail no later than the 1st day of the month.

To meet this 1<sup>st</sup> day of month schedule you need to anticipate how each Observer actually receives USPS mail. Where is his/her USPS delivery location?

- a. residence ?
- b. rural highway 'box' ?
- c. PO Box at local Post Office?

**Monthly Data Collection:** Observer shall download the data to the Data Key any time after 12:00 AM local time on the first day of the month, through the 5<sup>th</sup> day of the month. For additional information on how to download data, the Observer should refer to his printed copy of the *FPU Observer Instruction* guide.

The 'new key' is likely to have already arrived a day or two before the Observer downloads the monthly records and so he will have two keys in his possession. The Observer should realize that he may use either key to download as they are both considered available 'blanks'. However, once data is downloaded to the key, the Observer needs to immediately package it to the NWS-addressed mailer envelope, to reduce risk of Observer mailing his other key, the one that is 'blank' and intended for his next monthly download.

At the time you install FPU equipment and conduct a familiarization tutorial with the Primary Observer (and Secondary Observer, if possible), make sure he is knowledgeable of the NWS operations and maintenance policy as outlined in the W-OS7 issued, '*FPU Observers Guide*'. Encourage their dialogue, solicit their questions, and offer them additional instruction if needed to bring them to a qualified level of experience after two or three months' handling of the FPU system.

An Observer who is qualified to operate the FPU recording gauge will have demonstrated proficiency in the following tasks:

- Download to Data Key (i.e., dry run) on the day FPU is installed. As NWSREP, observe his level of familiarity with key pad control points and the data key receptacle.
- Possess a printed copy of the *FPU Observer Instructions*, (April 18, 2005) and be able to locate and describe the purpose of the: keypad, display, data key receptacle, and a list of the operator notation codes (i.e., 104 'Routine Gauge Check').
- Timely operational download to Data Key on the first five (5) calendar days of the month. The Observer may not download prior to the first day of the month!
- Timely mailing of Data Key to WFO by the 10<sup>th</sup> day of month. Observer shall mail you his Reporting Key on same day that he downloaded his data.
- Possess a filled-in copy of the *Mailing Address/WFO POC Sheet* (Appendix C, *FPU Observer Instructions*, Apr 2005).
- Identify a secure location where s/he will keep the Data Key during the month.

## 2.2. General Month-by-Month Responsibilities and Timeline

### 2.2.1. Mail All Observers a Key:

On or about the 25<sup>th</sup> of each month mail each Observer a data key.

Note: Data Keys you mail to the Observer shall not be affixed with any type of label or marking.

Write down to the monthly Log Sheet (Sec 2.1.1) the date you mailed-out the new keys.

### 2.2.2 Log-in Each Reporting Key as Received by NWSREP:

All Observers should have mailed you their Reporting Key with the understanding that you have to have them received and positively accounted for between the 10<sup>th</sup> and 15<sup>th</sup> of each month. If any key is missing on the 15<sup>th</sup>, first search your office's incoming mail station, for possible mis-distributed / misplaced envelopes.

Receipt of the Observer's Reporting Key: Check the envelope's self-address to positively identify the location of the COOP Station Observer sending you the enclosed red plastic data key. Check the same mailing envelope to ensure it contains:

- a. Red plastic data key,
- b. Possible FPU Event Log, or related printed correspondence.

The same day you open the envelope holding the Observer's mailed key, log the date to the 3<sup>rd</sup> column of your Data Key Log Sheet, in the column titled, 'Verify the Reporting Key.'

Strive to have all Observers' keys logged as received by the NWSREP, and uploaded to the Coastal Key Reader by the 10<sup>th</sup> of the month. For offices with ten or more FPU stations by the 20<sup>th</sup> of month, strive to have all keys logged as received by NWSREP and uploaded to Coastal's Key Reader.

Write down to the monthly Log Sheet (Sec 2.1.1) the date you received his Reporting Key.

Phone the Observer if his mailing has not arrived by the 10<sup>th</sup> day of month.

Upload each Reporting Key to the stand-alone Coastal Reader PC on the same day you receive the key.

Write down to the monthly Log Sheet the date you uploaded the key's contents.

### 2.2.3. Instructions to Create the Precipitation Data Files:

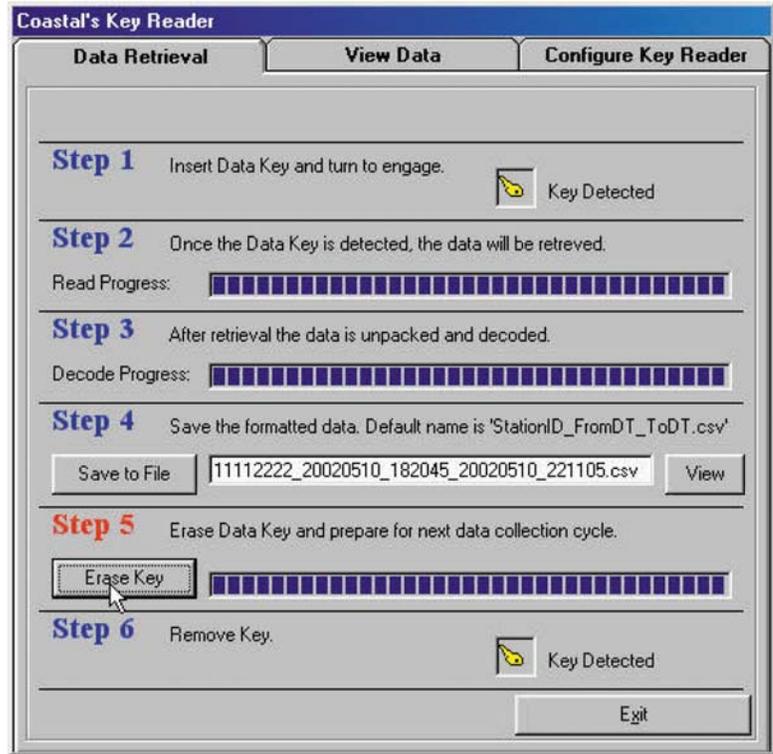
- A. Insert the Data Key into the Key Reader receptacle, turn the key to the right.
- B. The Coastal Key Reader's display will now feature a status panel, with 6 dialogue windows (see figure, below) and the system will automatically start reading the key, the

panel’s “Step 1”, will indicate ‘Key Detected’, and the program will automatically advance to “Step 2”.

C. If you see the Key Detected symbol light-up (‘Step 1’), but the program says that the key is empty, then look for the key reader’s AC adapter’s power cord to see if it is plugged in.

D. The program should progress through the same ‘Data Retrieval’ panel’s “Step 2” and “Step 3” (see graphic, below), without any operator input necessary.

E. At “Step 4” on the Data Retrieval panel (see graphic, right), a filename will display in the white background, text editor window. The standard filename will automatically post to the window – this is the convention - so do not alter this filename!



F. With “Step 4” you may click on “View” to examine a data key’s contents in a ‘Notepad’ pop-up window. See Section 2.2.7 for information on how to decode data fields. Then, click **Save to File** button to save the key’s entire contents to a single file in the Coastal-PC/Laptop. The file will be saved to a directory path you have configured in Coastal’s Key Reader software (i.e., C:\hpd\2005\jun\ ).

Do **not** ‘Save to File’ if the Reporting Key is missing 15 or more days of the collection month. Phone the Observer to inquire into the problem and ask Observer to download to his New Key and mail you it at his earliest convenience. When key is received, mail the Observer a New Key because he has none.

Realize how in this “Step 4”, the entire contents of a given Data Key are allocated and named into a single file by the Coastal Key Reader program. No additional operator commands are necessary.

**Example:** 41008778\_20050415\_231905\_20050702\_065958.csv

The filename convention is:

coopidno\_yyyymmdd\_hhmmss\_yyyymmdd\_hhmmss.csv

Here the ‘coopidno’ is an 8-digit coop id number where the first 4 digits are the state number (4100 is Texas) and the last 4 are the actual site id number for that station within the state. (e.g., 41008778, is assigned to Swan 4NW, TX)

“yyyymmdd” marks the date of the key’s oldest (first) data element on the key, and also later, the youngest (last) data element.

“hhmmss” marks the time of the key’s oldest (first) data element on the key, and also later, the youngest (last) data element.

- F. You may click the View Data tab (middle tab at panel’s top) to skim the data file inside the Notepad utility, or click the Exit button to leave the program.
- G. Do not erase the key prior to removing it.
- H. To finish the process, turn the key to the left, and remove it.
- I. Close the Coastal Key Reader program.

In the above process you have successfully uploaded your Observer’s Data Key records into your standalone-PC/laptop. This Coastal Key Reader computer may also be referred to as the ‘Coastal-PC’ or ‘Stand-Alone PC/Laptop’ in this manual.

**Note:** When seeking to examine the individual 15-minute data elements, use only the Coastal’s Key Reader panel (graphic above), by clicking on the middle tab ‘View Data’ at the top of the screen. Never open a file by going to Windows Explorer and double clicking the filename because this will open the file and immediately render a change to the cells’ data format settings! The most obvious corruption is a change to each record’s date field. Also, for data that end with a ‘.n0’ or ‘.00’ after the decimal point, the Excel-CSV will be permanently truncate these trailing ‘0’ numerals and alter the permanent data record!

#### **2.2.4. Filename and Storage Standard:**

The following COOP Program standard for filename and file allocation folder-name convention shall apply to each WFO handling the exchange of FPU data files for the NWS and NESDIS.

This standard will apply to both platforms in the WFO where you handle FPU data files:

- a. Coastal-PC (i.e., Stand-alone PC/Laptop)
- b. NWS-network station’s (i.e., AWIPS) directory for “HPD” (i.e., C:\hpd\month)

When you upload the Data Key to your workstation, the Coastal’s Key Reader software will automatically produce just one data file with a long numeric filename. Each data file will hold the entirety of the most current reporting month, and also include the prior month’s data.

The file shall be saved to a dedicated permanent directory, with a sub-directory structure that is organized by year and month as follows: C:\hpd\2005\jun\

Store, and do not delete the CSV data files for at least 12 months. Also, never rename files that are being stored.

**Example:** coopidno\_yyyymmdd\_hhmmss\_yyyymmdd\_hhmmss.csv

**41008778\_20050415\_101459\_20050702\_094414.csv**  
(Station ID\_\_OldestDate\_\_Time\_\_YoungestDate\_\_Time.CSV)

**Important:** Never rename a Coastal Key Reader generated filename! And never duplicate, i.e., ‘copy-cat’, an assigned filename if you generate a mark-up or work-file document for personal use!

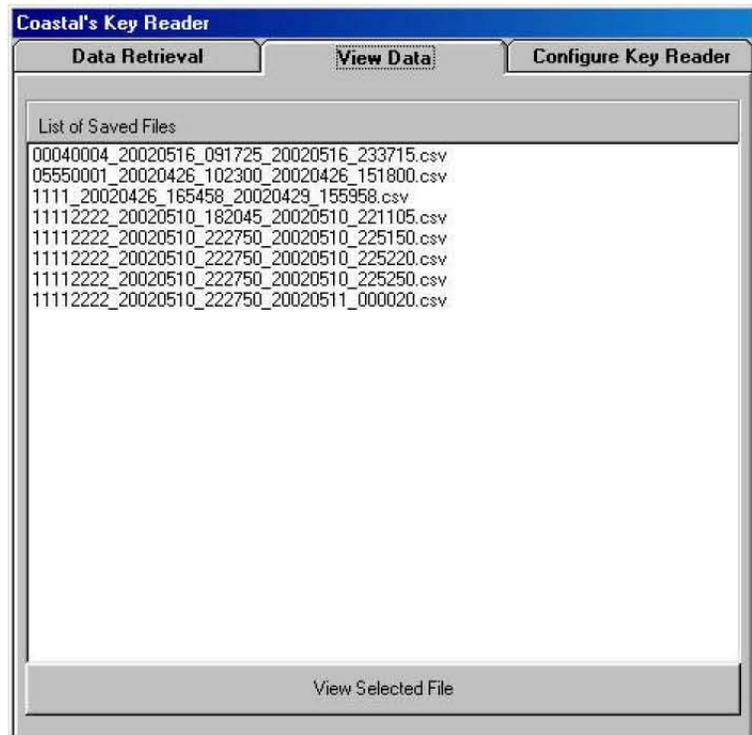
**Filename Format:** The first eight characters give the Station ID number (i.e., 41-8778); the next block gives the date of the **oldest 15-minute** data element (Apr 15, 2005) in the data file; the middle section (3<sup>rd</sup> block of the filename) gives the local time of the oldest 15-minute data element. The next block gives the date of the **youngest 15-minute** data element (July 2, 2005), and the final section (5<sup>th</sup> block) gives the local time of the youngest 15-minute data element.

### 2.2.5. Setting the Data Folder-name in Coastal-PC:

At any time in the month you may call-up a CSV file to view its contents.

Simply click-on the ‘View Data’ tab (graphic, right). It will link you directly to the C: drive folder-name you last established as your Saved Data Folder. The View Data screen opens to that folder-name (e.g., c:\hpd\2005\jun\ ) and lists all the CSV files.

Use the mouse to select a CSV file, it will highlight in dark blue, then move the cursor to the View Selected File tab on the bottom bar of the same panel. Click it, to open up the Notepad text file viewer to examine the 15-minute data elements.

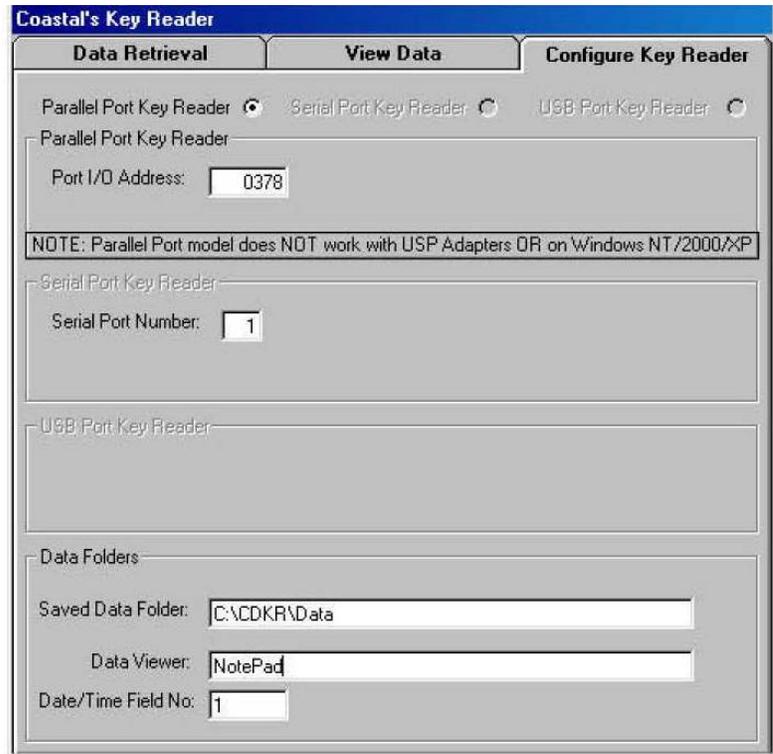


You may update your HPD data directory folder-names at any time by calling-up the right-most tab, ‘Configure Key Reader’ (see graphic, right) and finding the Data Folders section at the bottom of its panel.

**Important:** If you have not yet done so, go to the 'Configure Key Reader' tab and modify the 'Saved Data Folder' default from, C:\CDKR\Data\ to our COOP Program convention: C:\HPD\2005\Month\ .

Below the 'Saved Data Folder' user entry window, you will find the 'Data Viewer:' entry window (see graphic, right). Here we are told the name of the text file viewer in use. It should appear as 'Notepad'. Always keep this as the default text file viewer.

Also, never change the 'Date/Time Field No:' setting. Keep '1' as the default.



**2.2.6 Examine CSV to Confirm Collection Month is Present:**

Give a quick, one minute or so, visual inspection of your Observer's CSV file's contents, to confirm the Reporting Key was holding data records for the collection month. Confirm there is data from the start of the month as accounted for by the 12AM record from the first day of the month: **2005/05/31,23:59:58,1,14.13,9.70,12.16,10.35,12.49**, is valid for the month of June.

Example:

2005/05/31,23:44:58,1,14.13,9.85,12.16,10.35,12.49  
**2005/05/31,23:59:58,1,14.13,9.70,12.16,10.35,12.49**  
 2005/06/01,00:00:01,2,-0.02,0.00,19.70,7.37,0.00  
 2005/06/01,00:14:58,1,14.13,9.65,10.30,9.70,12.49

Scroll to the end of the CSV file and locate the end of the collection month. Confirm there is data from end of the month as accounted for by the first 15-minute record past 12 Midnight of the last day of the month: **2005/07/01,00:14:58,1,17.19,19.00,19.35,19.20,12.49**, is valid for the month of June.

Example:

2005/06/30,23:44:58,1,17.20,19.25,19.50,19.35,12.50  
 2005/06/30,23:59:58,1,17.19,19.30,19.50,19.35,12.49  
 2005/07/01,00:00:01,2,0.02,0.00,24.00,16.90,0.00  
**2005/07/01,00:14:58,1,17.19,19.00,19.35,19.20,12.49**  
 2005/07/01,00:29:58,1,17.19,18.75,19.35,19.20,12.49  
 2005/07/01,00:44:58,1,17.19,18.51,19.35,19.20,12.48

In this way you have confirmed the Observer submitted a valid station record for the collection month being reported.

**Note:** If the beginning and ending lines (fifteen minute records) contain missing data, or skipped readings, then the NWSREP shall note the discrepancy, inquire with the Observer, and then e-mail your RCPM to report the event. Include the CSV file as an e-mail attachment.

**Note:** Your CSV data will appear in Notepad similar to this synthesized example, below. Here the WFO-MLB opted to install a Battery Voltage tracking utility to over-write the Stream Level field. The battery voltage configuration is available from the NWS Headquarters Office of Operational Systems website: <http://www.nws.noaa.gov/ops2/Surface/implementation> by accessing the link “FPU Configuration File with Battery Voltage Tracking Code“.

```

08005612_20050416_202958_20050701_074458 - Notepad
File Edit Format Help
Zeno Version String: V1.966-2637-GMA
Primary/Secondary Station IDs: 800/5612
Date,Time,Msg Num,RainOrNote,ThDegC,Tmax,Tmin,BatV
6-4-1,-----,2-1-2,8-4-3,8-4-4,8-4-5,8-4-6,8-4-7
2005/04/16,20:29:58,1,12.94,20.90,22.17,21.14,12.57
2005/04/16,20:44:58,1,12.94,20.80,22.17,21.14,12.57
2005/04/16,20:59:58,1,12.94,20.70,22.17,21.14,12.56
2005/04/16,21:14:58,1,12.94,21.00,21.05,20.65,12.56
2005/04/16,21:29:58,1,12.94,21.15,21.05,20.65,12.55
2005/04/16,21:44:58,1,12.94,21.05,21.05,20.65,12.55
2005/04/16,21:59:58,1,12.94,21.02,21.05,20.65,12.55
2005/04/16,22:14:58,1,12.93,20.90,21.15,20.82,12.55
2005/04/16,22:29:58,1,12.93,20.95,21.15,20.82,12.54
2005/04/16,22:44:58,1,12.93,21.00,21.15,20.82,12.54
2005/04/16,22:59:58,1,12.93,21.00,21.15,20.82,12.53
2005/04/16,23:14:58,1,12.94,21.05,21.02,20.90,12.53
2005/04/16,23:29:58,1,12.93,20.96,21.02,20.90,12.53
2005/04/16,23:44:58,1,12.93,20.85,21.02,20.90,12.52
2005/04/16,23:59:58,1,12.93,20.60,21.02,20.90,12.52
2005/04/17,00:00:01,2,0.00,0.00,27.84,15.80,0.00
2005/04/17,00:14:58,1,12.93,20.50,21.15,20.59,12.51
2005/04/17,00:29:58,1,12.93,20.40,21.15,20.59,12.51
2005/04/17,00:44:58,1,12.93,20.25,21.15,20.59,12.51
2005/04/17,00:59:58,1,12.91,20.20,21.15,20.59,12.50
2005/04/17,01:14:58,1,12.94,20.00,20.50,20.14,12.50
2005/04/17,01:29:58,1,12.94,19.76,20.50,20.14,12.50
2005/04/17,01:44:58,1,12.94,19.55,20.50,20.14,12.49
2005/04/17,01:59:58,1,12.94,19.35,20.50,20.14,12.49

```

After you have examined the CSV file for proper dates and times to verify the full reporting month is present, you may wish to confirm the Message Numbers (i.e., 1, 2, 3 or 4) are consistent, and the 15-minute report (rainfall in hundredths of an inch) contain data and not 'zeroes', and you need not analyze the 24-hour report (Msg Num = 2) because it is not to be used by your office or the NCDC.

Date	Time	Msg Num	Rain Or Note	ThDegC	Tmax	Tmin	StrmLvl
Year/Mo/Day	HH:MM:SS	1 = 15min 2 = 24 hour 4 = Notation	Precip Bucket Level or 3-digit notation code	Temp C 15 min	Temp C Max	Temp C Min	Feet
2002/09/10	22:29:58	1	6.80	27.10	27.80	27.20	135.00
2002/09/10	22:44:58	1	6.80	27.10	27.80	27.20	135.00
2002/09/10	22:59:58	1	6.80	26.95	27.80	27.20	135.00
2002/09/10	23:14:58	1	6.82	26.65	27.15	26.94	135.00
2002/09/10	23:29:58	1	6.82	26.50	27.15	26.94	135.00
2002/09/10	23:44:58	1	6.81	26.05	27.15	26.94	135.00
2002/09/10	23:59:58	1	6.82	26.15	27.15	26.94	135.00
2002/09/11	00:00:01	2	0.02	0.00	32.85	26.05	0.00
2002/09/11	00:14:58	1	6.81	26.08	26.84	26.05	135.00
2002/09/11	00:29:58	1	6.81	26.25	26.84	26.05	135.00
2002/09/11	00:44:58	1	6.81	26.10	26.84	26.05	135.00
2002/09/11	00:59:58	1	6.81	26.00	26.84	26.05	135.00
2002/09/11	01:14:58	1	6.81	25.80	26.30	25.99	135.00
2002/09/13	04:14:58	1	6.73	26.85	26.90	26.10	135.00
2002/09/13	04:29:58	1	6.73	26.90	26.90	26.10	135.00
2002/09/13	04:44:58	1	6.74	26.90	26.90	26.10	135.00

### 2.2.7. Transfer CSV Files from Coastal-PC to AWIPS Workstation:

Do not transfer any CSV files from the Coastal-PC (i.e., Stand-alone/Laptop) until the 15-25<sup>th</sup> of the month. Only when you have received all Observers' reporting keys, as accounted for by the *Data Key Log Sheet* (Sec 2.1.1), go to the Coastal-PC's 'Programs' menu and select Windows Explorer. Locate the various drives and folders in the left pane of the Windows Explorer, and locate the (C: ) drive to expand its folders, and click on the HPD folder icon to expand the sub-folder icons, then click on the 2005 folder icon to expand the 12 sub-folder icons, one for each month. Click on the JUN folder to display its data files within the right-side pane of Windows Explorer. Select all the CSV files you need to copy to the (A: ) drive. Then press and hold the CTL key, press the mouse button, and drag the files to the (A: ) drive icon to complete the copy to the diskette.

Remove the 3.5 inch disk from the Coastal-PC and insert it to the 3.5 inch disk port on the NWS-Network station. Locate any file directory manager on the Unix operating system that will allow you to copy the CSV files from the 3.5 inch disk to the NWS-Network station's C: drive. Prior to the copy-down, ensure the NWS-Network station's file structure was updated for the current collection month according to the convention stated in Section 2.2.4 of this manual (e.g., C:\HPD\2005\Month\).

**Portable Media:** For this procedure you will require one formatted, 1.44 MB high density 3.5 inch disk that is blank or empty of any files. Use the Coastal-PC's Windows Explorer program (Win 95/98/ME) to structure the blank diskette. Create an 'HPD' folder, followed immediately by a '2005' sub-folder and under the 2005 sub-folder, create a sub-folder for the collection month, i.e., 'June'.

**Note:** One formatted 3.5 inch disk can hold a maximum of only four (4) CSV files because each CSV file is approximately 250 kB large. Ensure your WFO always keeps an inventory of several 10-pack boxes of the formatted 1.44MB high density disks (i.e., Maxell brand) reserved specifically for the Fischer-Porter Upgrade (FPU) data transfer process. [ [Zipping the typical monthly CSV file will reduce its size from 266kB to 42kB. Be careful not to accidentally zip your entire folder \(i.e., /hpd/2005/june\) .\]](#)

**Note:** Never rename the CSV files when you copy them to disk or copy them into the network workstation. See the important note in the next section, Sec 2.2.5.

### 2.2.8 Examine CSV on NWS-Network Station:

The best practice for handling a recently received Reporting Key, is to make a check of the CSV file contents, early on, right after uploading the key to Coastal's Key Reader. In that way, any problems with missing data, or a Reporting Key with internally corrupted date/time headings can be diagnosed soon enough for you to document the problem and phone the Observer if needed. The NWSREP with more than 20 FPU stations however, may need to conduct a second or follow-up check, of certain CSV files after he has transferred them to the NWS-network workstation.

To examine contents on the NWS-Network workstation you will not have the Coastal's Key Reader software as an application helper. In addition, you shall not open the CSV file at any time within an Excel application! So caution is advised, to use the Windows resident application

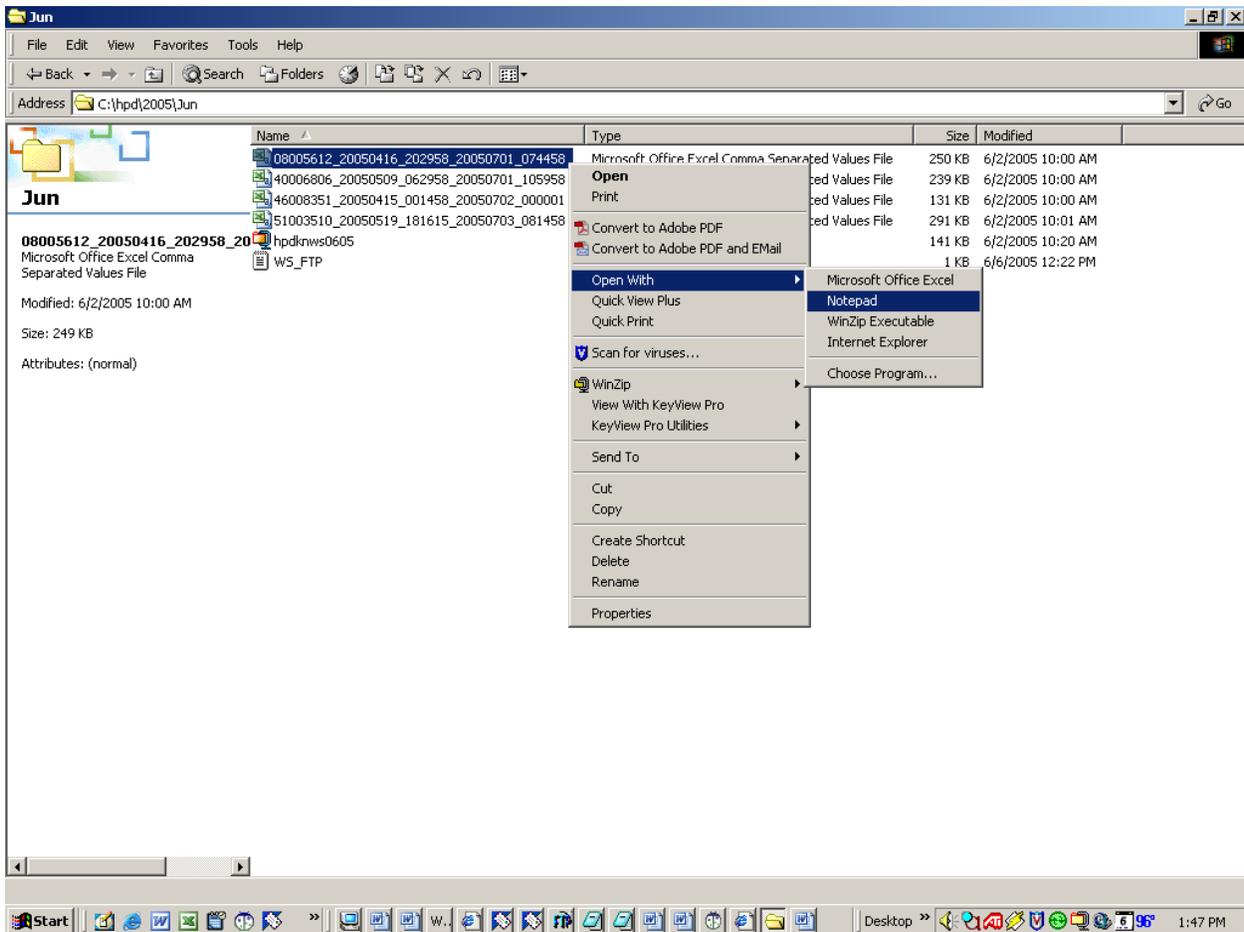
text file viewer “Notepad”, that should be resident on the NWS-Network workstation program files directory.

Follow these Windows procedures to call up the Notepad application to view the contents of any CSV data file.

Access your Network station’s file directory containing these FPU data files and carefully single click the right-mouse-button to select the CSV file for a controlled application opening within **Notepad** and not Excel.

**Important:** Be careful not to double click the CSV file as this will open it within the Excel spread-sheet applications program and you risk losing the date/time data format!

Now, click the right-mouse-button once to expand the drop down menu (see graphic, below), and notice the option “Open With”. Slide the cursor to the word, ‘Notepad’, it is the second application listed on this pop-out menu. Single click on it to open a Notepad text screen viewer window and conduct your examination of the 15-minute data records as you have done earlier in Section 2.2.7 of this manual.



**2.2.8. Zip Compress FPU Data File :**

On or about the 15<sup>th</sup> of the month, go to the Data Key Log Sheet and take inventory of the Data

Keys you have transferred to the NWS-network workstation. When all the Observers have sent their Data Keys, and you have transferred the data files from the Coastal-PC to the NWS-Network workstation, you are ready to 'zip' together all the CSV data files into a single file.

Use only the NWS-network workstation to zip together all CSV files from the observed month.

- A. Using Windows Explorer, select all files in folder by selecting one file in the folder and then using (Ctrl-A),
- B. Right-Click on files and select "add to ZIP "
- C. The file should now be named hpdkxxxMMyy.zip

You must always use this NCDC filename convention, hpdkxxxMMyy.zip , for all files transmitted to NCDC. Code explanation: >kxxx= is your 4-letter WFO identification (e.g., kmeg for Memphis, TN), and >MM= is the data-month (i.e., 06), and >yy= is the data-year (i.e., 05).

**Keys Delivered Late to WFO:** If any Observers have not yet sent you their Data Key, phone and remind them, and wait until the 25<sup>th</sup> of the month. Then, on or about the 25<sup>th</sup> of the month use WinZIP to bundle-zip the full complement of CSV files into one ZIP file.

In certain rare cases of lateness, you may postpone the ZIP process and FTP transmission for six weeks beyond the 15<sup>th</sup>. August 31, 2005, is the absolute last day (i.e., the cut-off date) to transmit June 1-30, 2005, data to NCDC, for data to receive the necessary quality control for inclusion into the monthly publications and archive databases.

#### **NCDC Advice on Zip Compression:**

- a. The CSV data file must contain the **entire** month's data being reported in the file name of the zip file.
- b. For example, a ZIP file named **hpdkxxx0605.zip** must contain all data for the month of February. The Observers shall download the data logger to their key only after midnight on May 31, 2005. Since NCDC will be processing the June data, if any data is missing, it will not appear in the publication or archive databases, and will be marked "missing".

**Note:** Do not right-click on the folder and "add to zip" as this will include the folder name on your PC as the path name when it extracts and your data will not be processed.

**Note:** Make sure that the "save full path info" is not checked under the Folder Option. This will create a separate sub-folder and your data will not be processed.

The files must be zipped with a file compression utility such as winzip or pkzip. Do not send a self-extracting executable file (.exe).

**2.2.10. Transmit FPU Data to NCDC:**

Between the 15<sup>th</sup> or 25<sup>th</sup> of month, you should have zipped all your station files together on your NWS-network workstation (Sec 2.2.9, above). Now you are ready to start an FTP session.

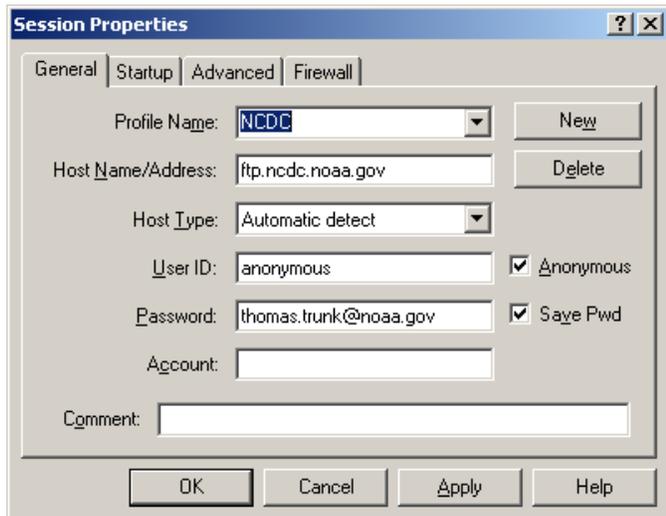
Double-click the desktop icon for WsFTPLE (i.e., Ipswich WSFTP95.exe) on your network workstation. If there is no icon, run the executable file that is located in C:\Program\_Files\WS\_FTP Windows\. The Session Properties ‘General’ panel will open immediately (graphic, below). Confirm it is configured properly with each NWSRSEP to use ‘anonymous’ as his User ID, and each NWSREP shall use his NWS-network e-mail address as his Password.



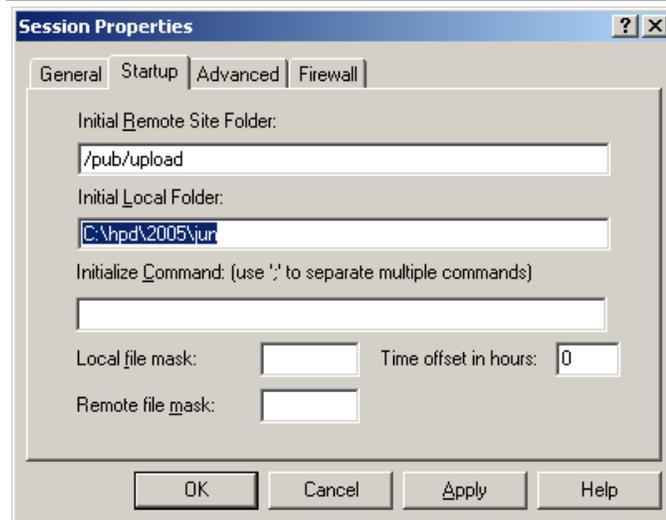
Host Name / Address: <ftp.ncdc.noaa.gov>  
 anonymous  
[your.name@e-mail.address](mailto:your.name@e-mail.address).

The general session properties do not change, except for the Password field, which most often will show the e-mail address of the worker who has transmitted Upper-Air data to NCDC (twice daily) most recently. So, now update the Password: dialogue box with your name.

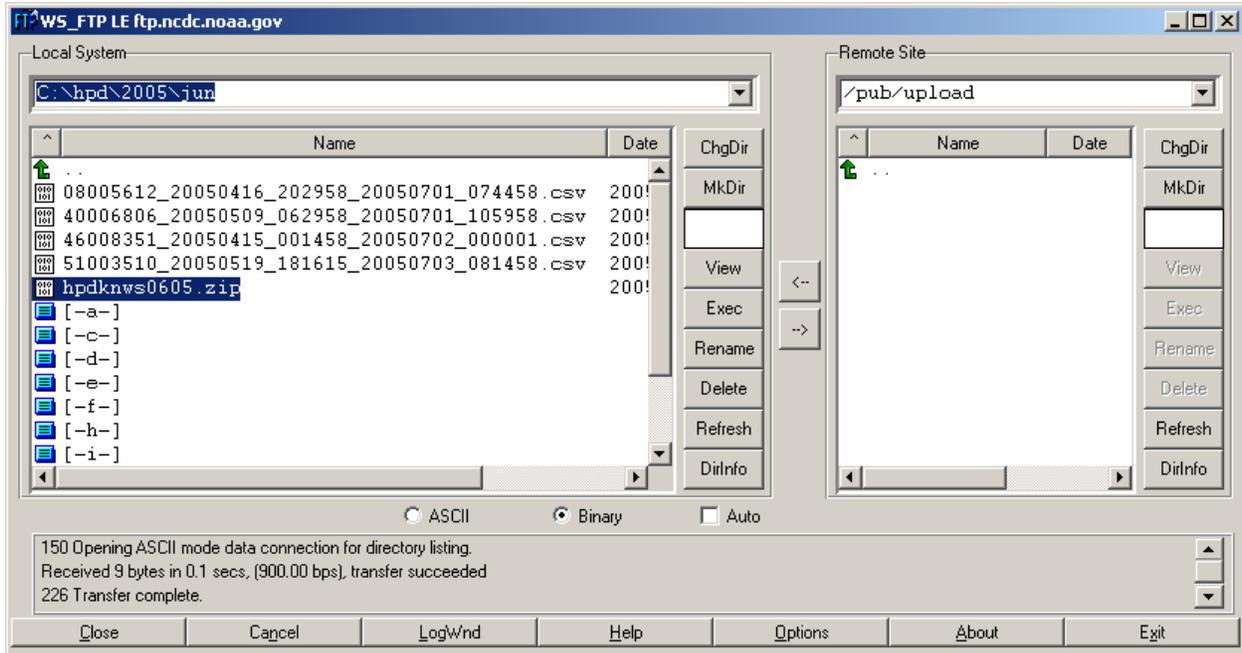
Click on the Apply button on the lower portion of the ‘General’ panel to enter your password (do not click on OK, yet call-up the ‘Startup’ tab immediately to the right of ‘General’ in the same Session Properties screen.



Place your mouse cursor inside the second dialogue box, marked ‘Initial Local Folder:’ (see graphic, right) and update the default local folder from C:\hpd\2005\may, to C:\hpd\2005\jun, by typing in the letters ‘jun’ (below) and clicking on the button Apply.



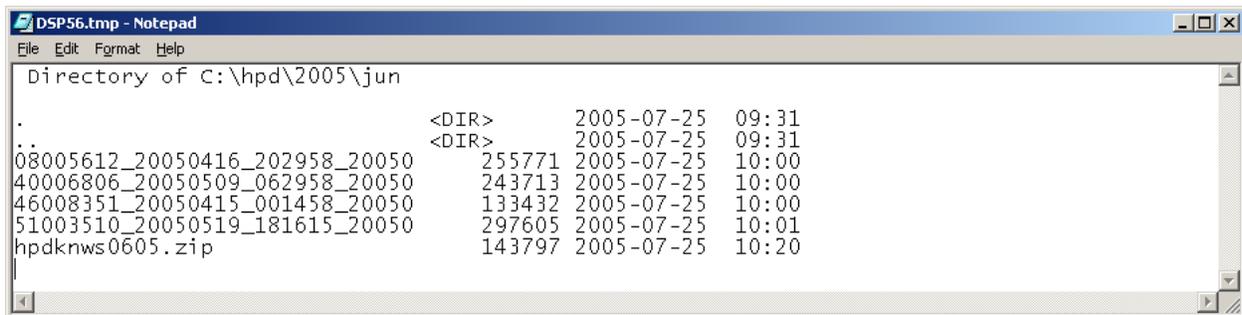
Finally, while still in ‘Session Properties’, click on the OK, expect sound-effects (i.e., train-whistle), and the program will quickly update your FTP user-control panel (see graphic, below) as the Session Properties windows closes shut.



The FTP twin-pane user-control panel (see, above) is a standard design with the left-pane titled ‘Local System’, and the right-pane titled, ‘Remote Site’. Your Observers monthly data files are visible in the Local System’s left-pane view arranged by filename as they appear in your NWS-network (AWIPS) workstation. The NCDC directory path for data file ingestion appears in the right-pane, under the title, Remote Site.

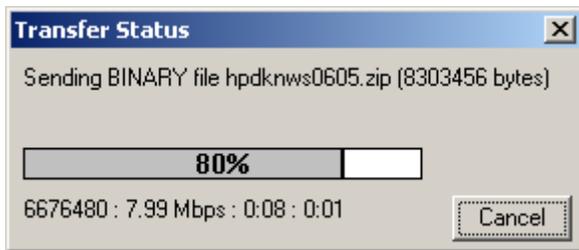
**Note:** Verify that your ZIP filename is properly coded and spelled: **hpdkxxxMMyy.zip** is the proper code, where ‘kxxx=’ is your 4-letter WFO identification (e.g., kmeg for Memphis, TN), and ‘MM’ codes for data-month (i.e., 06), and >yy= codes for data-year (i.e., 05). For zip files the year ‘yy’ is always on the end of the filename!

**Note:** Always ensure to give the ZIP filename the same month designation as the Collection Month of the newly observed data to be transmitted to NCDC! You may wish to call-up a full view of the filenames and properties of CSV and ZIP files. Now, click on the ‘DirInfo’ tab, it is the lowest tab in the vertical menu-bar of the median, to open the viewer (graphic, below).



Ensure that the Local System window displays the relevant month=s FPU zip files (e.g., hpdkxxx0605.zip) along with the CSV filenames of each COOP station that sends you monthly FPU data. The Remote Site window shows no files having been uploaded as of this session.

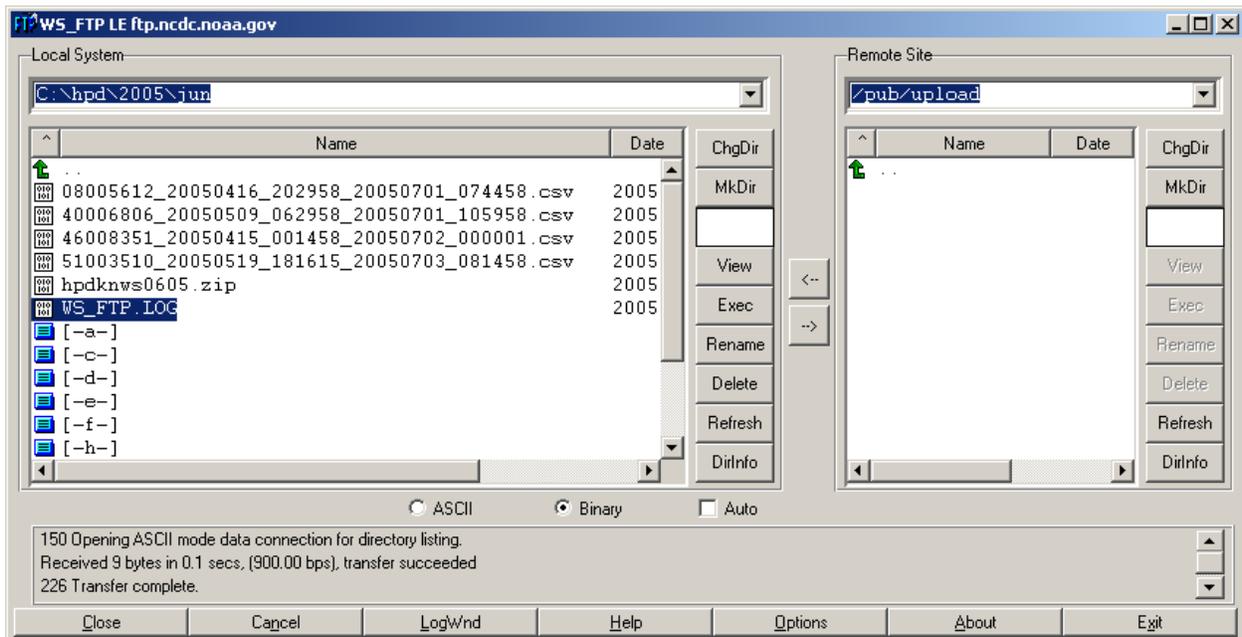
- A. **Select** the ZIP file (e.g., hpdknws0605.zip) you will send to NCDC. This is the one file that encapsulates all your FPU stations' precipitation data for the most recent collection month (e.g., June 1-30, 2005). Click (single click with left mouse button) the ZIP filename in the left-side window.
- B. Locate the two small square buttons [←] and [→] that **control** the direction of FTP file transfer. They are located in the vertical median of the twin-pane panel.
- C. Click on the right pointing button [→] and you will **transmit** your monthly FPU-ZIP file to the NCDC's data ingest port. Your task is now completed.



At the 100% transfer complete, audio effects will sound (i.e., several rapid chirps).

- D. Click on '**Exit**', on the menu bar at the bottom-right of the twin-pane panel.

Click on the receipt file that arrived upon successful transmission, titled "WS\_FTP.LOG", (highlighted in the graphic, below).



Select the WS\_FTP.LOG in your subfolder C:\hpd\2005\jun\ with mouse cursor (so it highlights), then click on the 'View' tab, to the right, the fourth tab from top of the center median. To produce an 'FTP transmission receipt'. Note the date and time 10:32 July 25, 2005.



At NCDC an automated program (Cron job) will be looking for the "hpdknws0605" and the "zip" when it runs twice daily. Any files located will be automatically processed.

**Note:** If the FPU data is transmitted a second time (i.e., zip filename) the first transmitted file=s data will be overwritten.

**Note:** NWSREPs should e-mail or phone Stuart Hinson (NCDC), on 828-271-4437, if there are any questions on the prescribed FPU data compression and FTP transmission procedures.

**Remember:** If you have two or more COOP Stations who routinely send you monthly Data Keys, then Zip compress each COOP Station=s CSV files together into a single Zip file.

### 2.2.11. Confirm NCDC Has Ingested Your Monthly FPU Report:

Before the last day of each month access the NCDC tracking site to check on the ingest time-stamp and data availability percentage calculated for the FPU report you transmitted to NCDC:

WEBSITE: <http://www.ncdc.noaa.gov/nwsonly/hpdingest/orefpusites>  
 USER NAME: NWSUSER  
 PASSWORD: IHIDFMP

If any problems are encountered with data or with FTP transmission of data to NCDC, then inform NCDC and OS7, via e-mail.

### 2.3. Inform the RCPM of any FPU Event Log item reported by Observer

Phone the Observer and inquire into the nature of the event s/he reported on the *FPU Event Log Worksheet*. Analyze and understand the history of installation, implementation, calibration data, maintenance actions, and seasonal weather conditions that might have contributed to the reported event. Does the event involve a faulty or broken system component that could be resolved with a maintenance visit? E-mail or Fax your RCPM a scanned copy of the FPU Event Log Worksheet and propose the action you will take to resolve this issue.

See Chapter 4, Maintenance, of this FPU Operations Manual, for general policy on trouble shooting and procedures for ordering replacement parts.

## 2.4 Quality Assurance Checklist:

The following recommended 'best practices' were adapted from National Weather Service Training Center (NWSTC) instructor, Mike Wyatt's course materials.

### 2.4.1. Log-in the Data Keys that Arrive each Month

- a. Establish a Data Key Log Sheet template; update and print it monthly
- b. Consider a QA Log Sheet for broader, more general FPU responsibilities
- c. Establish firm time-table, routine
- d. Establish criteria for acceptance.

### 2.4.2. Transmit to NCDC

- a. Assure all FPU data files are FTP'd to NCDC in sufficient time to meet the deadline of the 25<sup>th</sup> day of Month.
- b. Do not e-mail the FPU data files.
- c. Check the NCDC Inventory web site to confirm NCDC receipt of all of your FTP'd files. <http://www1.ncdc.noaa.gov/nwonly/hpdingest/fpusites/> (see Section 2.2.11 of this Manual).

### 2.4.3. Set a 'Best Practice Policy' for your WFO to handle all the FPU stations.

- a. Establish expectations with Cooperative Institutions.
- b. Establish consistency.
  - Schedule firm cut off for routine receipt
  - Follow-up on missing Keys consistently.
  - Establish deadlines, patterns with Observers

### 2.4.4. Perform Quality Assurance Review:

- a. Properly identified the date/time of the start and end points of the data file? Confirm the data possesses proper filename, station number, Year /Month/ Day ?
- b. Any data missing problems, any garbled data?, any zeros data filling the pages?
- c. If a problem in the data file does this problem fit a pattern from the same Observer?
- d. Have there been quality improvements (observer) for same site?
- e. Log problems at the WFO to establish patterns.
- d. Read and take action on any FPU Event Log Form that is submitted by the Observer. --- Do you need to check the File to confirm Notation codes are properly entered? (If they are not entered, then advise the NCDC via e-mail)
- f. Determine QC corrective procedures. Is there something NCDC can do, recover?
- g. Schedule QC-Does NCDC need to be specially notified about this Station's data?
- h. Follow-up with your Observer, and with NCDC if needed.

### 2.4.5 Records Retention Guidelines from OS7

The following FPU data records and FPU meta-data shall be kept on hand in the WFO:

- A. Electronic copy of the month=s FPU files (CSV) shall be stored for at least 12 months on an NWS-network workstation. Do build a primary storage folder or archive on a laptop PC.

- B. Print or electronic copy of the '*Data Key Log Sheet*' for 12 months.
- C. Print copy of Observer-submitted *FPU Event Log Worksheets* and print of any e-mail correspondence on subject matter shall be kept for 12 months.
- D. Print copy of any *FPU Trouble Report* forms and print of any e-mail correspondence on subject matter, shall be kept for 12 months.
- E. Print or electronic copy or electronic bookmark for each of the FPU documents that appear in Appendix E, of this *FPU Operations Manual*. This includes the relevant administrative and procedural directives for the FPU program (i.e., CSSA Manual, ILSP, CLS, NDS 10-13XX, Coastal Environmental Systems (CES) Technical Manual, CES CD-ROM for PC Reader, CES CD-ROM for Technical Manual, and Memos Issued by NWSHQ).

## 2.5 Monthly Timeline of FPU Tasks:

Day of Month	Countdown to FTP X-mission	Task to perform.
Jun 25 <sup>th</sup>	T – 31 days	Access the \nwsonly\ website to confirm NCDC has screened your WFO stations monthly files.
25 <sup>th</sup>	T – 31	Mail each of your Observers their new Data Key.
July 1 <sup>st</sup>	T - 24	Prepare a new Data Key Log Sheet for month ending June 30 <sup>th</sup> .
3 <sup>rd</sup>	T – 22	Log first Data Key arrival into your <i>Data Key Log Sheet</i> . Did the Observer enclose any operational log-sheet or notes?
3 <sup>rd</sup>	T – 22	Upload each Data Key to the non-Network PC, on same day it arrives. Examine CSV file's date/time headings to confirm proper month.
10 <sup>th</sup>	T – 15	Upload any outstanding 'Reporting Keys' and update the <i>Data Key Log Sheet</i> . Identify any missing (late) keys. Check WFO mail station for mis-directed Data Keys. Phone the Observer to prompt for the missing (late) key.
15 <sup>th</sup>	T – 10	Check WFO mail station for mis-directed Data Keys. Upload any outstanding 'Reporting Keys' and update the <i>Data Key Log Sheet</i> .
15 <sup>th</sup>	T – 10	Take inventory of CSV files on the Stand-Alone PC. Examine the date/time fields to ensure the first and last days of the reporting month are present with no missing data.
20 <sup>th</sup>	T – 5	Upload any outstanding 'Reporting Keys' and update the <i>Data Key Log Sheet</i> . There should be no missing or late keys now. Check WFO mail station for mis-directed Data Keys. Phone the Observer a second time (first time was on the 10 <sup>th</sup> ) to prompt them to mail it.
25 <sup>th</sup>	T – 0	Confirm all Data Keys were received and accounted for in the stand-alone PC/laptop (then update the <i>Log Sheet</i> if necessary). Transfer all CSV files via 3.5" floppy from the isolation station (PC/laptop) to the

		NWS-Network Workstation.
<b>25<sup>th</sup></b>	T - 0	ZIP all the CSV files submitted this month, into a single bundled ZIP file.
<b>25<sup>th</sup></b>	T - 0	<u>Important:</u> Ensure the filename is spelled properly. <u>Example:</u> <b>hpdkxxx0605.zip</b> Where the <b>kxxx</b> is the WFO site ID (e.g., kohx); the <b>06</b> is the data-filled month (June); and <b>05</b> represents year 2005.
<b>July25<sup>th</sup></b>	T - 0	FTP Transmit the <b><u>June 2005</u></b> FPU-ZIP file to NCDC.
<b>25<sup>th</sup></b>	T - 0	Access the \nwsonly\ website to confirm NCDC has screened your WFO stations monthly files.
<b>25<sup>th</sup></b>	T - 0	Mail each of your Observers their New Key.

T = Denotes your FTP monthly transmission to NCDC.

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ANNEX OF WsFTPLe SETUP INSTRUCTIONS FROM THE NCDC (2003)

## FTP Graphical User Interface Procedures

### 1. Introduction to FPU Data File Procedures:

These step-by-step instructions are directed to WFO meteorologists and technicians so the FPU files will be routinely electronically transmitted to the National Climatic Data Center (NCDC) in Asheville, North Carolina. Questions may be directed to Mr. Stuart Hinson (NCDC), on 828-271-4437.

These procedures require the WFO workstation to have the **WS\_FTPLe** utility installed and operational. Procedures use standard Windows operating system terminology.

In this Appendix the term Hourly Precipitation Data (HPD) refers to FPU data that was saved to a ZIP file.

### 2. Ensure Proper Zip Filename:

After all FPU data files for the month have been saved to the WFO=s designated archive directory, then zip all FPU data into one file with filename that contains the processing month, that is the month of transmission. For a file being transmitted in January 2003 use hpdxxxx0103.zip.

Use the ZIP filename convention. For example, WFO Ft. Worth uses: hpdkfdw0103.zip, where >xxxx= is your 4-letter WFO identification (e.g., kfdw for Ft. Worth, TX), and >mm= is for data month (Jan), and >yy= is for data year (2003).

### 2. Set-up FTP Profile in WS\_FTPLe:

- A. After you setup WS\_FTPLe, you need to set up an FTP Profile for NCDC:
- B. Double-Click the WS\_FTPLe icon on the desktop
- C. Click "New"
- D. In the "General" Tab:
- E. Profile Name: FTP NCDC
- F. Host Name/Address: ftp.ncdc.noaa.gov
- G. Host Type: Automatic Detect

- H. User ID: anonymous
- I. Password: your.name@e-mail.address
- J. In the "Start-Up" Tab:
- K. Initial Remote Site Folder: /pub/upload
- L. Initial Local Folder: C:[Folder with HPD File] (Ex: C:\hpd\2002\Jan\)
- M. In the "Advanced" Tab:
- N. Make sure the "Passive Transfers" box IS checked.
- O. VERY IMPORTANT! Make sure the Binary mode radio button is selected (Bottom-middle of window)
- P. CONNECT (at bottom left) <<<*from older WsFTP software (pre 2003).*>>>

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\*\*\* Notes from older (2002 and earlier) WsFTP software: \*\*\*

- 1. All files are hidden. You will not see any files, including yours.
- 2. On the right hand side, double click
- 3. On the left-hand side, click the green ^-- arrow until you get to the C:\ drive push the ---> arrow in the middle center of the screen to move the data file to NCDC.
- 4. ZIP files are in binary format.
- 5. select "options at the bottom center of the screen and select "Save Current Folders as Connection Folders"

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**3. FTP Transmit the Zip File to NCDC :**

- A. Select (Highlight by left-single clicking) the file you want to send on the Left side
- B. "Push" the arrow ( ---> ) buttons (in the middle) to "push" the data from the PC side (left) to the NCDC side (right).
- C. ALL DONE!

An automated program (Cron job) will be looking for the "hpdxxxx" (4-digit NWSFO ID) and the ".zip" when it runs twice daily. Any files found will be automatically processed

NOTES: You may FTP your HPD data file to NCDC anytime after the end of the month. If you send your data a second time, it will overwrite any existing data already sent. All ORE data are due at NCDC the 15<sup>th</sup> of month. (E.g., March 2002 data should be received by April 30.)

There might be more than one way to compress and FTP data to NCDC. Scripting allows automatic data handling and quicker data preparation with less manual work. Please contact NCDC if you plan to change procedures so the data can be monitored for quality.