AN EXAMPLE OF ANNUAL MAINTENANCE PROCEDURES FOR A STANDARD (RAWS) CLIMATE STATION

Adapted from: *RAWS Field Checklist*

A publication of the National Wildfire Coordinating Group

Revision 2005

Original Document Available at
http://www.fs.fed.us/raws/forms/checklist.shtml

General Procedures

On-site General Inspection:

Thoroughly inspect the station visually, physically, and – as well as possible – electronically.

1. Inspect all guy wires and footings.
2. Use torpedo levels on towers to check for plumb.
3. Check that cables are neatly tied down and secured.
4. Check for vandalism or animal damage.
5. Verify and record all serial numbers of the sensors, antenna, solar panel, and DCP on the Site Documentation Record.
6. Check antenna and cable for physical serviceability.
    - Are any of the elements (prongs) bent or missing? Is the antenna properly aligned? Check with compass and inclinometer.
7. Verify and record the firmware version

Precipitation Gage (Tipping Bucket)

- Disassemble, inspect, and clean the entire tipping bucket.
- Level and tighten tipping bucket platform as needed.
- If installing a new bucket, be sure to remove the rubber band securing the tipping mechanism. RE-INSTALL THE RUBBER BAND ON THE OLD BUCKET TO PREVENT DAMAGE DURING RETURN SHIPPING. Reassemble.

Wind Speed

- Wind speed cups tight and properly aligned.
- Easily and freely spins at a fast walk.
- Verify and record W/S sensor ice skirt size (either 1&190;" or 2").

Wind Direction

- Wind direction vanes true and tight.
- Verify and record crossarm orientation to assure proper installation of wind direction sensor.
- When installing the wind direction sensor, verify that the "arrow" points south (180 degrees) and remove the pin only after securing the sensor in its bracket.

Cables

- Inspect and clean cable ends as necessary.
- Even if not replacing sensor, remove cable, inspect, clean, and retape.
- Document potential cable problems and note need for replacement as necessary.
- In replacing certain cables, note that some cables can be installed in either direction. Be sure that cable is installed with the shielding alignment to prevent water from entering cable.
- If replacing cables, use quality black tiedown straps (white tiedowns break down in sunlight).
- Inspect/replace older straps as necessary.
- When attaching sensors to the cable, make sure the fitting is snug but not tight. All connectors are thoroughly and carefully wrapped with quality environmental tape. BE CAREFUL NOT TO COVER DRAIN HOLES ON THE SENSORS WHILE APPLYING TAPE!

Fuel Temperature/Moisture Sensors

- Part of the process for installing the fuel temperature or fuel moisture/temperature sensor is to rehabilitate the fuel bed. The stick should be facing south, approximately 10" above the fuel bed. The fuel bed should be 3 feet square and 2" deep using typical vegetation found in the area. This is especially important if you have a fuel moisture/temperature sensor. PLEASE REFER TO NFES 2140 "Weather Station Handbook - an Interagency Guide for Wildland Managers" for complete information on appropriate fuel bed conditions.
- Fuel stick dowels in good condition.

Batteries/Solar Panel

- Check the voltage regulator with a volt ohmmeter (VOM).
- Check output of solar panel (both voltage and current) with VOM and clean surface as necessary.

- Check batteries (internal and external) for leakage or corrosion and test with voltage meter or load tester.

Sample Site Visit Documentation Form

Site Documentation Record				
ID:		Name:		Date:
Class:	TX:____:____:____	Chan:	Dist:	
Sensor:	New Serial #	Old Serial #	TB Reset (Y/N) Cal: \50 Last:	
Tipping Bucket			S/P VDC	MA
Wind Speed			Reg VDC	MA
Wind Direction			Battery No Load	Load
RH/AT			Tries: 5M: 10M: 15M:	
Fuel/Temp	Changed	OK	Belt weather: Wet Dry RH	
Battery	Changed	OK	FWD TX:	REV TX:
Fuel Moist/Temp			Lat : : Long : : GPS (Y/N)	
Soil Moist/Temp			BP Limits: Full Zero SM/ST Limits: Full Zero WT/G Limits: Full Zero	
Baro Pressure				
CP S/N			Tower PN: SSN:	
DCP	Chan:	Firmware:	Talker: (Y/N) Up-Date Interval ___:___ Data Size:_____Match: (Y/N) Gust-Chan Up-Date: : Future (Y/N)	
Solar Panel				

Antenna			Run(Y/N) NXmit___:___ NScan___:__ ID Correct: (Y/N) XMit Next ___:__:__ Diff Time: ___	
Weight Gauge		WWV		
LAST DATA			FORCE SCAN	
T/B	BP		T/B	BP
W/S	FM		W/S	FM
W/D	SM		W/D	SM
AT	ST		AT	ST
FT	WD/G		FT	WD/G
RH	WS/G		RH	WS/G
Batt	WT/G		Batt	WT/G
Notes:				