# Requirements for Reporting During Maintenance of Real-time Current Stations

**Procedure Number:** SOP # 6.3.1.2
**Created:** January 28, 2011
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1. **Title** SOP # 6.3.1.2 Requirements for Reporting During Maintenance of Real-time Current Stations

2. **Purpose** This SOP addresses the required communications during maintenance, repair and/or replacement of CO-OPS real-time current measurement stations. The submission and transmittal of documentation and metadata requirements are also described. These procedures are designed to ensure that critical coordination takes place and proper station documentation is provided for each type of maintenance event and is submitted to the appropriate teams within CO-OPS. Accurate and timely metadata ensures that the highest quality data and products are available for CO-OPS users. These procedures also ensure that changes to communication paths are made as soon as possible so that data dissemination can resume.

3. **Background/History** CO-OPS uses in house field crews and a variety of partners and contract firms to maintain real-time current stations at PORTS installations around the US. Complete station documentation of maintenance and repair activities is a requirement for contract payments. Equally important, field-submitted documentation is the source of all metadata needed to completely describe the data used for CO-OPS products. These procedures for coordination and documentation will ensure that the CO-OPS currents metadata database is complete, and supported by the latest, highest quality documentation provided by field personnel and contractors.

4. **Scope/Applicability** This SOP applies to all CO-OPS personnel and CO-OPS contracted personnel performing maintenance of real-time current stations. All CO-OPS field parties and field contractors are required to coordinate with CORMS and the OD Data Monitoring and Assessment Team (DMAT) during maintenance and to submit documentation to DMAT and Contract Task Managers.

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5. **Main Processes**
   - Pre-Maintenance Notification
   - On-site Communication
   - Critical Metadata Submission
   - Final Station Documentation
   - Monthly Reporting

6. **Detailed Sub-Processes/Checklists**:

**Pre-Maintenance Notification**: It is the responsibility of the Field Party Chief (either IDIQ contractor or CO-OPS personnel) to send an e-mail notice as soon as possible and at least 1 business day before planned maintenance. This email shall contain the maintenance date and approximate time of the work, and be sent to the Task Manager with cc to nos.co-ops.dmat@noaa.gov and the appropriate Instrument Lab, either CIL (CIL@noaa.gov) for east coast stations or SIL (SIL@noaa.gov) for west coast stations. This email notification ensures that CO-OPS staff will be available for consultation and initial data review during maintenance.

The e-mail shall contain:

- station name and ID
- type of maintenance activity
- sensor manufacturer, model, frequency
- sensor serial number
- The 3 pressure sensor coefficients (Pressoffset , Presscale, Presscale2) for Sontek ADP's

**Schedule Changes:** It is the responsibility of the Field Party Chief to send an e-mail notice to the Task Manager with cc to nos.co-ops.dmat@noaa.gov, containing notice of changes / delays in the maintenance schedule.

**On-site Communication and Procedures**: It is the responsibility of the Field Party Chief to perform the following tasks:

- **Notify CORMS** - Call 301.713.2540 or email CORMS@noaa.gov when on site, but before beginning work. Briefly describe the work which will be performed. The Field Party Chief should provide CORMS with their contact information (name and phone number).
- **Complete the Checklist** - Use applicable real-time current station maintenance checklist to perform and document maintenance activity.
- **Notify CORMS** - Call 301.713.2540 or email CORMS@noaa.gov when maintenance or install is complete. Ask CORMS to confirm data flow.
- **Verify Data Flow** - Wait onsite or in the general vicinity until receiving notification from CORMS via phone call that data communications have been restored and current data are available on CO-OPS centralized systems (DAS or database). CORMS will send an email asking for data review to verify quality before dissemination is restored.
- **Notify Instrument Lab** - Email CIL@noaa.gov or SIL@noaa.gov that maintenance is complete, and data are flowing.
- **Contact Task Manager** - If data flow cannot be confirmed within one hour

**Critical Metadata Submission**: Following the maintenance events listed below, it is the responsibility of the Field Party Chief (either IDIQ contractor or CO-OPS personnel) to send an e-mail notice containing the listed critical metadata to the Task Manager with cc to nos.co-ops.dmat@noaa.gov and CIL@noaa.gov or SIL@noaa.gov as soon as possible, and not later than 24 hours after the following maintenance event:

- **Replacement of a current sensor** - include sensor manufacturer, frequency and serial number(s), bin size, number of bins, blanking distance, measurement coordinate system, pressure coefficients (Sontek ADP only), and position (latitude/longitude).
- **Replacement of an IP modem or phone** additional cc to CORMS@noaa.gov and nos.co-ops.isd.ops@noaa.gov – include all applicable: old phone number, new phone number, IP address, IP phone number, IP serial number, IMEI/ESN Number for BOTH the old and new IP modems.
- **Changes to sensor setups and/or changes to communication settings (remote or on site)** - additional cc to CORMS@noaa.gov and nos.co-ops.isd.ops@noaa.gov- include sensor setups or communication settings.

**Final Station Documentation**: It is the responsibility of the Field Party Chief (either IDIQ contractor or CO-OPS personnel) to send a complete Real-time Current Station Documentation Package (see Appendix A for listing of required documentation) containing a detailed description of the work performed and components repaired/replaced to the COR and Task Manager (via email and/or through TOMIS) with cc to nos.co-ops.dmat@noaa.gov and CIL@noaa.gov or SIL@noaa.gov as soon as possible, and not later than 5 business days following these maintenance activities:

- **All emergency maintenance site visits** (even if no components are changed) - The full station report must include an explanation of actions taken, a log of discussions with a NOAA employee(s) related to troubleshooting, and photos to document any damage discovered.
- **Replacement of a sensor, IP, or DCP** In the case of sensor/station replacement both a removal and deployment report must be submitted.
- **Cleaning of a sensor** - In the case of sensor cleaning, a station report must be submitted. The report shall confirm if the sensor was returned to the initial depth, orientation and position. The report shall contain before and after photos of the sensor to document the extent of corrosion/fouling, etc. Photos of any obstructions, debris or ice found onsite should also be included.
- **Replacement of the sensor cable, PORTS interface card, antenna, or antenna cable** (include new cable length in report) - The full station report must contain a description of the replaced component(s).

- **Changes to sensor setups and/or changes to communication settings (remote or on site)** - include sensor setups or communication settings. Use comments field to document changes to setups which do not have specific fields in the site report.
- **Changes to station wiring** – include a diagram of the new wiring configuration.
- **Change of site metadata** - including contact information, security clearances, etc.

**Monthly Reporting (no site report required)**: It is the responsibility of the maintenance contractor to report via Monthly Activity Log to the COR and Task Manager the following maintenance activities:

- Routine inspections where the sensor is not moved
- Minor repairs to non-sensor components
- Remote login in via phone or IP solely to check status

**7.** **Quality Assurance/Control**: The Data Monitoring and Assessment Team (DMAT) is responsible for the review of the submitted information as well as entering this information into the correct CO-OPS databases.

**8.** **Management/Responsibility**: The Oceanography Division is responsible for maintaining this SOP.

## Appendix A. Real-time Current Station Documentation Package

All Real-time Current Station Documentation Packages must include the following:

1. Real-time Current Station Report

2. Real-time Current Station Maintenance checklist:
   a. Buoy Mounted Current Meter (ATON)
   b. Bottom Mounted Current Meter (BACP)
   c. Horizontally Mounted Current Meter (HADP)

3. Photo of the orientation of plugs with respect to the bracket is required for HADCP. Photographs of sensor condition, damage found, etc if applicable. Photos should use the naming convention station_id_description_of_photo_YYYYMMDD.jpg

All Real-time Current Station Reports must be delivered in pdf format as either an attachment to an email or via TOMIS.