

***NATIONAL WEATHER SERVICE INSTRUCTION 10-814***

***November 10, 2008***

***Administration and Management***

***Aviation Weather Services, NWSPD 10-8***

***CENTER WEATHER SERVICE UNIT SITE REVIEW PROGRAM***

---

**NOTICE:** This publication is available at: <http://www.nws.noaa.gov/directives/>.

---

**OPR:** W/OS23 (C. Abelman)

**Certified by:** W/OS23 (K. Johnston)

**Type of Issuance:** Initial

---

***SUMMARY OF REVISIONS:*** This is the initial issuance of NWSI 10-814.

//Signed// October 27, 2008

David B. Caldwell

Date

Director, Office of Climate, Water, and Weather Services

<b>Table of Contents</b>	<b>Page</b>
1 Purpose.....	2
2 General.....	2
3 Background.....	2
4 Initiation of CWSU Review.....	3
5 CWSU Site Review Team.....	3
5.1 Reviewers.....	3
5.1.1 Reviewer Training.....	3
5.2 Other Participants.....	3
6 Notification of Site Review.....	3
7 Conduct of the Site Review.....	4
7.1 Observations.....	4
7.2 Interviews.....	4
7.3 Exit Briefing.....	4
7.4 Final Report.....	5
7.5 Results Briefing.....	5
8 Evaluations Resulting in Failures.....	5
9 Mitigation of Failing Element(s).....	5
APPENDIX A – CWSU Site Review Checklist Reviewer’s Guidance and Expected Performance.....	6
APPENDIX B - CWSU Site Review Checklist .....	16

**1. Purpose.** This directive provides general procedures for National Weather Service (NWS) Center Weather Service Unit (CWSU) quality assurance of services and products provided to the Federal Aviation Administration (FAA). CWSU support to the FAA is detailed in NWSI 10-803.

**2. General.** NWS CWSU support is designed to improve aviation safety and enhance efficient flow of air traffic by forecasting and monitoring adverse weather. Efficiency is promoted by maintaining close coordination with traffic managers whose decisions affect the flow of air traffic through the National Airspace System (NAS). Quality assurance of CWSU services and products will result in improved services to the FAA.

The CWSU Site Review program will annually document CWSU service and product strengths and weaknesses for each CWSU. Input will be gathered by on-site observations and by interviews of both the CWSU meteorologists and appropriate FAA representatives. To provide a comprehensive review, verification statistics for each CWSU product will be appended to the final report.

The CWSU Site Review Program will not provide an overall pass/fail indicator for the CWSU. Individual elements of the CWSU services and products may receive pass/fail indicators.

**3. Background.** The CWSU Site Review Program was developed in response to the Government Accountability Office’s (GAO) finding regarding verification of CWSU products and services. Historically, verification of CWSU products and services has been accomplished

annually using subjective, free-form evaluations from the FAA's Traffic Management Unit (TMU) Controllers.

**4. Initiation of the CWSU Site Review.** The CWSU Site Review Program will be implemented in phases.

The first phase will consist of an introductory site review. This introductory site review is conducted in the same manner as an official site review with the appropriate documentation for each CWSU but is a "baseline" review. This "baseline" review provides the CWSUs with some insight on the review process and program expectations. No element of the first review will receive a failing score. Those elements identified as underperforming are noted and tracked; and the appropriate improvements are executed prior to the second phase.

The second phase commences with an official CWSU Site Review. This review will be the official review of the office. Any failing elements require an Element Improvement Plan.

**5. CWSU Site Review Team.** The function of the CWSU Site Review Team is to assess individual CWSU services and products and to report results to the NWS and FAA management.

The CWSU Site Review Team consists of three participants. Due to the schedule and available space in a CWSU, the CWSU Site Review Team is limited in participant number.

The CWSU Site Review Team will report to NWS and FAA management on the CWSU performance.

**5.1 Reviewers.** The CWSU Site Review Team members are the Director of the NWS Office of Climate, Water, and Weather Services (OCWWS) or designated Regional Director, a member of the OCWWS Aviation Weather Services Branch (ASB), and a Regional Aviation Meteorologist (RAM). The RAM participating on the review team should not be from the region the CWSU is located.

**5.1.1 Reviewer Training.** Training for the CWSU Site Review Team Reviewers will be developed and conducted prior to the conducting site reviews. The training should include information on how to conduct a CWSU Site Review and how to effectively conduct interviews.

**5.2 Other Participants.** In addition to the Reviewers, both the MIC of the "parent" WFO, the MIC of the Alaska Aviation Weather Unit (AAWU), when appropriate, and the MIC of the CWSU accompanies the Site Review Team to provide information to the Reviewers but they do not participate as Reviewers.

**6. Notification of Site Review.** At the beginning of each fiscal year, the schedule of site reviews is determined and published. The published schedule is provided to the FAA including the CWSU Interagency Agreement Contracting Officer Technical Representative (COTR), the Air Route Traffic Control Center (ARTCC) Facility Managers, the Traffic Management Unit (TMU) Supervisory, and the regional FAA Quality Assurance Program Managers. The schedule is also provided to the NWS OCWWS Director, the OCWWS Aviation Services Branch Chief,

the Regional Directors, the Regional Service Division Chiefs, the AAWU, the RAMs, and the WFO and CWSU MICs.

One month prior to the scheduled Site Review, ASB sends a notification to all representatives associated with the scheduled CWSU with a tentative agenda and schedules interviews with appropriate FAA representatives.

**7. Conduct of the Site Review.** The CWSU Site Review is conducted over 2 days. Upon arrival to the facility, the Site Review Team should meet with the Traffic Management Officer (TMO) and appropriate members of the ARTCC staff. The initial meeting should include a briefing by the CWSU Review Team explaining the visit procedure and review plan.

Participation from the ARTCC TMU and Sector Managers/Supervisors is necessary to get an accurate evaluation of the services provided by the CWSU.

**7.1 Observations.** The Site Review Team should spend time on both the morning and afternoon shifts observing the CWSU meteorologist functions for two days. This observation will include interactions with the CWSU customers including scheduled briefings, on-demand briefings, and the issuance of any CWSU product. A minimum of two stand-up briefings will be observed.

Evaluation of the elements will be made on the CWSU Site Review Checklist (Appendix B).

**7.2 Interviews.** The Site Review Team should schedule, in advance, interviews with appropriate FAA representatives. The interviews should follow the CWSU Site Review Checklist (Appendix B) and responses should be noted on the checklist.

**7.2.1 FAA Input.** The FAA will be asked to provide examples of how the CWSU meteorologist assists, or does not assist, the FAA in improving safety and efficiency of the NAS. Specific examples will be encouraged.

**7.3 Exit Briefing.** Upon completion of the on-site portion of the CWSU Site Review, the Site Review Team should provide the Traffic Management Officer and appropriate members of the ARTCC staff with an exit briefing. The briefing should include a discussion of preliminary findings and the CWSU product verification, if available.

**7.3 Final Report.** The Site Review Team will provide a written report of the review to the following within two weeks of the end of the review:

- FAA CWSU COTR
- ARTCC Air Traffic Manager
- TMU Supervisor
- FAA Regional Quality Assurance Manager
- NWS OCWWS Director
- NWS Regional Director

- NWS Regional Service Division Chief
- NWS Regional Aviation Meteorologist
- WFO/AAWU MIC
- CWSU MIC

**7.4 Results Briefing.** The Site Review Team will conduct a briefing on the findings of each Site Review. The briefing should include the findings of the Site Review and a discussion of the CWSU product verification. The briefing should be for the following:

- NWS Deputy Assistant Administrator
- NWS OCWWS Director
- NWS Regional Director
- FAA CWSU COTR
- NWS Regional Service Division Chief
- WFO/AAWU MIC
- CWSU MIC

**8.0 Evaluations Resulting in Failures.** Any element resulting in a “no” on the CWSU Site Review Checklist (Appendix B) is considered failing and the element is then considered failing.

**9.0 Mitigation of Failing Element(s).** If any element(s) of the CWSU Site Review is deemed failing, the WFO and CWSU MIC will provide a written Element Improvement Plan to the NWS Director of OCWWS within two weeks of receipt of the final report. The Element Improvement Plan should include planned actions to improve the failing element(s) with a timeline.

ASB, the NWS Region, the WFO and CWSU will work together to successfully mitigate any failing elements within 90 days of the review.

**Appendix A**  
**CWSU Site Review Checklist Reviewer's Guidance and Expected Performance**

The following is guidance on the CWSU Site Review Checklist (Appendix B) for the Site Review Team.

The Review assesses services provided by the CWSU to the FAA both locally and remotely and is accomplished by observation and by interviews.

The Reviewers assess each of the five elements. The CWSUs will not receive a cumulative "grade" for the review. Each element is reviewed to ensure the CWSU is providing adequate service. In addition, the Reviewers should note the CWSU's best practices which may be shared with other offices to improve services. Areas for improvement should also be noted. These can be elements which receive a "Pass," but could be improved for enhanced services.

Elements which receive "Fail" must have specific reasons for the failing assessment in the "Add additional comments..." section of the Checklist.

The MIC of the parent WFO, or the AAWU when appropriate, and the MIC of the CWSU must sign the Review Checklist after the completion of the Review briefing to the TMO.

Each element is divided into sub-elements. Any sub-element which receives a "no" during the review will result in a "Fail" of the element.

**Element 1 Briefings – Stand-up ARTCC**

CWSU meteorologists provide scheduled, stand-up briefings to ARTCC personnel on current weather and weather forecasted to impact their area.

This element is designed to determine the effectiveness of the CWSU's Stand-up briefings. The intent is to ensure pertinent weather is clearly translated to the ARTCC. The Reviewers will observe a minimum of two stand-up briefings from different CWSU meteorologists if possible.

1.1 Record the number of stand-up briefings observed.

1.2 Were the briefings clear and concise?

- Review the delivery of the information to ensure both the information and delivery is clear and concise. The Reviewers should also observe the briefing attendees noting their reactions and questions to the CWSU meteorologist. If the meteorologist does not adequately conduct the briefings based on the following three criteria, the Reviewer should mark this sub-element as "no." The Reviewers should keep in mind the following questions while attending the briefings.
  - Did the meteorologist use proper pace and tone for the audience?

- As with any public speaking, the speaker's pace and volume have an impact on the delivery of the weather information. The speaker should keep a deliberate pace which is not too fast or too slow. In addition, all attendees should be able to hear the speaker.
- Did the meteorologist use appropriate, non-technical language for the audience?
  - The speaker should be well aware of the weather knowledge of the members of the audience and provide information to the level of detail necessary for the understanding of the audience.
- Did the meteorologist provide information on pertinent weather affecting the ARTCC and beyond?
  - The speaker should focus the discussion on weather impacting the ARTCC. This can be within their area of responsibility or beyond, depending on the weather situation and the potential it has for affecting their ARTCC's area. The speaker should limit discussion of weather outside of their area of responsibility if it will not impact ARTCC operations.

1.3 Did the briefing provide consistent information?

- Review the content of the briefing to ensure consistent information is provided. The briefing contents should not contradict other forecasts without sound meteorological reasoning. Reviewers should keep in mind the following questions during the briefings. If the meteorologist deviates from other forecasts for the ARTCC area without sound meteorological reasoning, the Reviewer should mark this sub-element as "no."
  - Did the meteorologist deviate from other aviation forecasts valid for the ARTCC area?
  - If so, was the deviation justified?

1.4 Did the meteorologist clarify inconsistent information?

- Review the contents of the briefing to ensure the CWSU meteorologist clarified inconsistent forecasts affecting the ARTCC's area. With the numerous products issued for each ARTCC area, the CWSU meteorologist should clarify any inconsistencies in the forecasts and provide a single, clear forecast to the ARTCC to assist with operations. If the meteorologist does not sufficiently clarify inconsistencies in the forecast products, the Reviewer should mark this sub-element as "no."

1.5 Did the meteorologist use sound meteorological reasoning?

- Review the contents of the briefing to ensure the meteorologist uses sound meteorological reasoning throughout the briefing. The information contained in the briefing should be based on sound meteorological reasoning. If the information is not, the Reviewer should mark this sub-element as “no.”
- 1.6 Did the meteorologist provide a depiction of weather conditions which are affecting or have the potential to affect air traffic services or aircraft operations with the ARTCC area?
- Review the contents of the briefing to ensure the meteorologist has addressed weather conditions potentially impacting the ARTCC’s area. The FAA has determined the following list to be important to operations and any of these items impacting the area should be addressed in the briefing although other items may be included depending on the ARTCC’s climate.
    - Thunderstorm location and intensity
    - Area of precipitation
    - Cloud coverage
    - Icing levels
    - Turbulence
    - Winds aloft
    - Low-level wind shear
    - Areas of less than 3 miles visibility and/or ceilings less than 3,000 feet
    - Significant pressure changes
- 1.7 Add additional comments...
- The Reviewer should note any actions taken by the CWSU meteorologist to eliminate inconsistencies in the forecasts for their area.
  - The Reviewer should also note any best practices which could be used at other CWSUs.
  - The Reviewer will provide specific information on a sub-element receiving a “no” check resulting in a “Fail” of the element.

### **Element 2 – On-demand Briefings**

CWSU meteorologists are frequently asked to provide weather briefings by individuals either at the ARTCC or other remote FAA facilities. These briefings require a comprehensive knowledge of the current and forecast weather and the CWSU meteorologist’s ability to quickly assimilate weather information and translate it to the requestor.

This element is to determine the effectiveness of the CWSU’s on-demand briefings. The intent is to ensure the weather is clearly and adequately translated to the requester and that the initial question is correctly answered.

- 2.1 Record the number of on-demand briefings observed.
- 2.2 Record the facility(s) briefed.

2.3 Was the inquiry adequately answered?

- Review the content of the briefing to ensure the inquiry is adequately answered. If the meteorologist did not adequately answer the inquiry, the Reviewer should mark this sub-element “no.” An adequately answered inquiry should include a clear and concise answer to the question and any additional information which may be pertinent to the requestor for making decisions.

2.4 Were the briefings clear and concise?

- Review the delivery of the information to ensure the information and delivery is clear and concise. If the meteorologist does not adequately conduct the briefing based on the following three questions, the Reviewer should mark this sub-element as “no.” The Reviewers should keep in mind the following questions while attending the briefings:
  - Did the meteorologist use proper pace and tone for the requestor?
  - As with any public speaking, the speaker’s pace and volume have an impact on the delivery of the weather information. The speaker should keep a deliberate pace which is not too fast or too slow.
  - Did the meteorologist use appropriate, non-technical language for the requestor?
  - The speaker should be aware of, or quickly assess, the weather knowledge of the requestor and provide information to the level of detail necessary for the understanding of the individual.

2.5 Did the briefing provide information consistent with other official weather sources?

- If applicable, review the content of the briefing to ensure consistent information is provided. The briefing contents should not contradict other forecasts without sound meteorological reasoning. Reviewers should keep in mind the following questions during the briefings. If the meteorologist deviates from other forecasts for the ARTCC area without sound meteorological reasoning, the Reviewer should mark this sub-element as “no.”
  - Did the meteorologist deviate from other aviation forecaster valid for the ARTCC area?
  - If so, was the deviation justified?

2.6 Did the meteorologist clarify inconsistent forecasts?

- If applicable, review the contents of the briefing to ensure the meteorologist clarified inconsistent forecasts affecting the ARTCC’s area. With the numerous products issued

for each ARTCC area, the meteorologist should clarify any inconsistencies in the forecasts and provide a single, clear forecast to the requestor to assist with decision-making. If the meteorologist does not sufficiently clarify inconsistencies in the forecast products, the Reviewer should mark this sub-element as “no.”

2.7 Did the meteorologist use sound meteorological reasoning?

- Review the contents of the briefing to ensure the meteorologist uses sound meteorological reasoning throughout the briefing. If the information is not, the Reviewer should mark this sub-element as “no.”

2.8 Add additional comments...

- The Reviewer should note any actions taken by the CWSU meteorologist to eliminate inconsistencies in the forecasts for their area.
- The Reviewer should also note any best practices which could be used at other CWSUs.
- The Reviewer will provide specific information on a sub-element receiving a “no” check resulting in a “Fail” of the element.

### **Element 3 – TMU Support**

Element 3 reviews the CWSU’s support to their TMU. These questions should be addressed to the TMO or a designate at a minimum. Other members of the TMU may also be interviewed. The CWSU MIC, the WFO MIC, the AAWU MIC should not be present for this interview.

This element is to determine the effectiveness of the CWSU’s support to the TMU.

Record the name of the interviewee.

3.1 Are the CWSU meteorologists anticipating your needs?

- Determine whether or not the CWSU is anticipating the needs of the TMU. This sub-element should address the situational awareness of the CWSU meteorologists to the changing needs of the TMU. If the Reviewer does not receive positive feedback on the following questions, the Reviewer will mark this sub-element as “no.” The Reviewer should ask the following questions before determining the sub-element result.
  - Are the CWSU meteorologists aware of air traffic concerns and changing needs?
  - Do the CWSU meteorologists proactively provide weather information in an effort to assist you?

3.2 Are you receiving consistent weather information?

- Determine whether or not the CWSU provides consistent weather information to the TMU. The Reviewer should ask the following questions before determining the sub-element result.
  - Are the CWSU meteorologists providing consistent weather information or does the information conflict with other official weather sources?
  - Are the CWSU meteorologists clarifying and eliminating inconsistent weather information?

3.3 Are you satisfied with the service you receive from the CWSU?

3.4 What services from the CWSU best serve your needs?

- This question allows the interviewee to provide information on the best services the CWSU provides. This is not a “yes” or “no” question and *is not considered in the scoring of the element.*

3.5 What services from your CWSU are least helpful/useful?

- This question allows the interviewee to provide information on the services the CWSU provides which are the least helpful or useful. This is not a “yes” or “no” question and *is not considered in the scoring of the element.*

3.6 Add additional comments...

- The Reviewer should also note any best practices which could be used at other CWSUs.
- The Reviewer will provide specific information on a sub-element receiving a “no” check resulting in a “Fail” of the element.

#### **Element 4 -- Designated Terminal Radar Control (TRACON) Support**

Element 4 reviews the CWSU’s support to their designated TRACON(s). These questions should be addressed to the air traffic Manager or a designate. The CWSU, WFO or AAWU MIC should not be present for this interview.

This element is to determine the effectiveness of the CWSU’s support to the TRACON.

Record the name of the interviewee.

4.1 Are the CWSU meteorologists anticipating your needs?

- Determine whether or not the CWSU is anticipating the needs of the TRACON. This sub-element should address the situational awareness of the CWSU meteorologists to the changing needs of the TRACON. If the Reviewer does not receive positive feedback on

the following questions, the Reviewer should mark this sub-element as “no.” The Reviewer should ask the following questions before determining the sub-element result.

- Are the CWSU meteorologists aware of air traffic concerns and changing needs?
- Do the CWSU meteorologists proactively provide weather information in an effort to assist you?

4.2 Are you receiving consistent weather information?

- Determine whether or not the CWSU provides consistent weather information to the TRACON. The Reviewer should ask the following questions before determining the sub-element result.
  - Are the CWSU meteorologists providing consistent weather information or does the information conflict with other official weather sources?
  - Are the CWSU meteorologists clarifying and eliminating inconsistent weather information?

4.3 Are you satisfied with the service you receive from the CWSU?

4.4 What services from the CWSU best serve your needs?

- This question allows the interviewee to provide information on the best services the CWSU provides. This is not a “yes” or “no” question and *is not considered in the scoring of the element.*

4.5 What services from your CWSU are least helpful/useful?

- This question allows the interviewee to provide information on the services the CWSU provides which are liked the least. This is not a “yes” or “no” question and *is not considered in the scoring of the element.*

4.6 Add additional comments...

- The Reviewer should also note any best practices which could be used at other CWSUs.
- The Reviewer will provide specific information on a sub-element receiving a “no” check resulting in a “Fail” of the element.

**Element 5 – Operational Evolution Plan (OEP) or Designated Terminal Support**

Element 5 reviews the CWSU's support to their OEP or significant air traffic Control Towers (ATCT). These questions should be addressed to the air traffic Manager or a designate. The CWSU, WFO or AAWU MIC should not be present for this interview.

This element is to determine the effectiveness of the CWSU's support to the ATCTs.

Record the name of the interviewee.

5.1 Are the CWSU meteorologists anticipating your needs?

- Determine whether or not the CWSU is anticipating the needs of the ATCT. This sub-element should address the situational awareness of the CWSU meteorologists to the changing needs of the ATCT. If the Reviewer does not receive positive feedback on the following questions, the Reviewer should mark this sub-element as “no.” The Reviewer should ask the following questions before determining the sub-element result.
  - Are the CWSU meteorologists aware of ATCT's concerns and changing needs?
  - Do the CWSU meteorologists proactively provide weather information in an effort to assist you?

5.2 Are you receiving consistent weather information?

- Determine whether or not the CWSU provides consistent weather information to the ATCT. The Reviewer should ask the following questions before determining the sub-element result.
  - Are the CWSU meteorologists providing consistent weather information or does the information conflict with other official weather sources?
  - Are the CWSU meteorologists clarifying and eliminating inconsistent weather information?

5.3 Are you satisfied with the service you receive from the CWSU?

5.4 What services from the CWSU best serve your needs?

- This question allows the interviewee to provide information on the best services the CWSU provides. This is not a “yes” or “no” question and *is not considered in the scoring of the element.*

5.5 What services from your CWSU are least helpful/useful?

- This question allows the interviewee to provide information on the services the CWSU provides which are liked the least. This is not a “yes” or “no” question and *is not considered in the scoring of the element.*

5.6 Add additional comments...

- The Reviewer should also note any best practices which could be used at other CWSUs.
- The Reviewer will provide specific information on a sub-element receiving a “no” check resulting in a “Fail” of the element.

**Element 6 -- CWSU Products and Services**

This element of the CWSU Site Review determines the CWSUs adherence to appropriate policies in place governing the Products and Services provided by CWSUs. This assessment should be completed prior to the CWSU Site Review. These documents are:

- FAA/NWS Interagency Agreement and Statement of Work
- NWSI 10-803

Each CWSU should be operating in accordance with these two documents.

6.1 Center Weather Advisories (CWA)

This sub-element addresses the content and format of the CWAs.

6.1.1 Are CWAs clear and concise?

- The product should provide pertinent advisory information for the ARTCC area in a clear and concise manner.

6.1.2 Are CWAs in the proper format?

- The product should follow the format outlined in NWSI 10-803.

6.2 Meteorological Impact Statements (MIS)

This sub-element addresses the content and format of the MISs.

6.2.1 Are MISs clear and concise?

- The product should provide pertinent weather information affecting traffic in the ARTCC area in a clear and concise manner.

6.2.2 Are MISs in the proper format?

- The product should follow the format outlined in NWSI 10-803.

6.3 CWSU operations in accordance with IA/SOW and local agreements?

The CWSU should conduct their operations in accordance with the FAA/NWS IA/SOW. Deviations are accepted with written local or regional agreement.

6.4 CWSU operations in accordance with NWSI 10-803?

The CWSU should conduct their operations in accordance with NWSI 10-803.

**Appendix B  
CWSU Site Review Checklist**

This appendix is a fillable PDF form.