



U.S. Department  
of Transportation

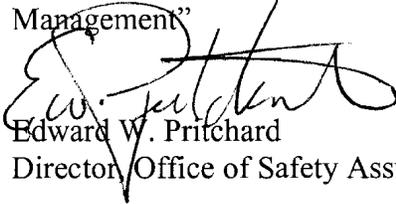
**Federal Railroad  
Administration**

# Memorandum

Date: **AUG 25 2006**

Reply to Attn of: S-06-01

Subject: Correction and Further Clarification to "Introduction to Software Configuration Management"

From:   
Edward W. Pritchard  
Director, Office of Safety Assurance and Compliance

To: Regional and Deputy Regional Administrators  
S&TC Specialists  
Chief Inspectors  
Rail Safety Oversight Managers  
State Program Managers  
Federal and State S&TC Personnel

This bulletin is to provide a minor correction to "Introduction to Software Configuration Management" issued as FRA Bulletin S-06-01, and to provide additional clarifying guidance about its use.

FRA is correcting the numbering of the Sample Plan Outline in Section 3.3 of the Bulletin. In the Sample Plan Outline, the last two subsections under Section 5 are numbered incorrectly. (They are numbered 4.2.3 and 4.2.4). The revised subsection numbers are 5.3.5 and 5.3.6. These numbering changes are the only changes to the document; all other information remains unchanged.

FRA has received comments about this Bulletin indicating that the purpose for its use may not have been clear. Sections 1 and 2 are intended to provide an introduction to Software Configuration Management. Section 3 (Typical Software Management Control Plan Contents) provides information about the development of a typical Software Management Control Plan (SMCP). This section provides guidance on various considerations for developing, customizing, implementing, and maintaining an SMCP. This section also provides a sample outline plan that provides a list of everything a fully developed SMCP would contain. FRA recommends that a railroad focus on Section 3 for assistance in developing an SMCP appropriate for its operations, as required by 49 CFR § 236.18.

Additionally, FRA recognizes that there is currently no one single industry standard for software configuration management, and is aware that a wide variety of different model plans and customization approaches are available that will also result in an equally satisfactory plan that supports an individual organization's business operations and the general review criteria of Section 3.4 of the Bulletin. Each railroad's SMCP will vary, depending on the individual railroad and property concerned. While the guidelines have been written taking this into account, they should not be considered a substitute for good judgment, experience, and common sense.

Attachment

- 5 Supplier/Vendor/Subcontractor
  - 5.1 Railroad Subcontract/Vendor Management Organization and Interface
  - 5.2 Required Reports
  - 5.3 Activities and Responsibilities
    - 5.3.1 Compliance with Railroad SCM Requirements
    - 5.3.2 Railroad Intellectual Properties Agreements
    - 5.3.3 Vendor Version Control and Reporting
    - 5.3.4 Patch/Release/Version Upgrade Procedure
    - 5.3.5 CCB Relationships
    - 5.3.6 QA

- 6 Record Collection and Retention
  - 6.1 Required Records
  - 6.2 Retention Requirements
    - 6.2.1 Manual
    - 6.2.2 Electronic

### 3.4. Review Criteria

A well-written SMCP should be able to provide affirmative answers/explanation to each of the following questions.

- Does the plan create procedures to ensure identification and control of all configuration items and baselines, including necessary changes to those items?
- Does the plan identify appropriate tools or methods to support the configuration system, including change control and methods of backup?
- Does the plan document procedures for review and authorized release of products consistent with the level of testing applied?
- Does the plan develop a mechanism for coordinating the updating of software at all customer locations?
- Does the plan create procedures for replication and subsequent verification and product identification activities?
- When a configuration management software tool is employed, does the plan clearly document the use of that tool?
- Does the plan develop a mechanism to support the labeling or other means of identification of third-party supplied products including, where necessary, integration into the configuration management system?
- Does the plan develop a mechanism to ensure that software, or designs produced or modified externally to the organization (for example by a subcontractor), are fully integrated into the configuration control process?

- Does the plan determine how the software configuration management system will be tailored to accommodate the size and complexity of the project?

If, after review of a SMCP document, the preceding questions cannot be affirmatively answered/explained, then the plan does not adequately address the minimum requirements of Title 49 CFR § 236.18.

### 3.5. Recurring Maintenance Review

Maintenance of the SMCP throughout the life-cycle of the various software products is especially important as the disciplines of identification; configuration control, status reporting, and release processing apply throughout the maintenance part of the life-cycle. Differences may be expected in how change processing is managed, and these need to be understood by all participants.

A review of the SMCP should be periodically performed to assess the effectiveness of the approach and the extent to which configuration management procedures are being followed by project staff. This enables adjustments to the SMCP to improve the staff's ability to follow the procedures and allows for more effective approaches to be incorporated as they are developed.