GENERAL

Purpose: The purpose of this SWCP is to make controlled changes to SSC software. It promotes the effective implementation of SSC software change requirements of Engineering Standards Manual (ESM) STD-342-100, Chapter 21, Software (Chapter 21). Where another approved software plan (where allowed by Chapter 21 grandfathering) exists, follow said plan where it differs from Chapter 21 or this form's instructions.

This form supersedes AP-341-507, *SSC Control Software Change Package* (and its SCP form), and works much the same way as a Design Change Form does for hardware—serving as a traveler that prompts for the necessary actions and an interim technical baseline change document.

Applicability: This form applies to:

- SSC software - software that controls and/or monitors system, structures and components (SSCs) and is running and interacting with its environment in real time. SSC software is associated with programmable logic controllers (PLCs), controlling computers, and embedded software in equipment for SSC operation such as process control, alarm, and/or monitoring. This includes:
  - Minor and Major Changes to ML-1, ML-2, and ML-3 SSC software.
  - Set point changes outside the bounding set points in the software baseline (SWBL), ref. AP-341-613, *Instrumentation Set Point Control*.
  - Support software (including software tools) changes that affect software performance.
  - Changes to software that is in use or has been approved for use (ref. Chapter 21).

This form does not apply to:

- Non-SSC Software – Software used in design, analysis and/or for administrative control. For non-SSC software changes, use SOFT-GEN-FM03, *Non-SSC Software Change Package Form* (SWNCP, ref. Chapter 21).
- Less-Than-Minor computer program changes (ref. Chapter 21)
- **ML-4 software**
- Set point changes within the bounding limits in the SWBL.
- Changes in software not yet in use. If being developed, follow design control; during implementation follow AP-341-519 Design Revision Control (both per Ch. 21).

Note: *The SRLM may apply this form at his/her discretion for Less-Than-Minor, ML-4, and set point changes within the bounding limits in the SWBL.*

Responsibility: The Software Owner (SO) is responsible for processing SWCPs for the Software Owner Responsible Line Manager (SRLM). Per Chapter 21 SOFT-GEN Appendix B, the SO and SRLM are normally the System Engineer (SE) and Facility Design Authority Representative (FDAR) respectively unless otherwise directed by the FDAR. Accordingly, SE and FDAR are used throughout this form. The SE may employ the services of a software designer/developer (SD) or others; however, the SE retains responsibility.

If any one person holds more than one role and signatures of both roles are required (e.g., the SE is also the FDAR), then indicate "same as SE" or similar and skip to the next applicable section; or, sign in both role fields.

LANL personnel must use this form as-is and report issues and improvement ideas to the Chapter 21 POC. The POC may authorize, in writing, other equivalent methods.

LANL subcontractors should use this form to satisfy Chapter 21 requirements for SSC software per the associated Subcontract documentation. Contact the Subcontract Technical Representative (STR) or Chapter POC for access to administrative procedures referenced herein.

Precautions and Limitations:

- Since the SWCP implements changes to a SWBL, ensure an existing SWBL is in place prior to using this form.
- This SWCP does not authorize work within a facility. Coordinate with operations and follow facility work authorization procedures (e.g., Integrated Work Document [IWD], etc.).
- When applicable, complete Commercial Grade Dedication (CGD) per AP-341-703 or governing CGD procedure in addition to this form.
- Users are responsible for following classification/UCNI practices including arranging for reviews/marking and proper handling.

General Instructions:

1. These instructions are for completing the form and are not part of the completed form.
2. Use this form in accordance with Chapter 21 requirements.
3. If entering sensitive information, ensure Derivative Classifier/Reviewing Official (DC/RO) review and appropriate marking.
4. Process SWCPs per AP-341-402 or the governing document control/records management process and ensure retention of the following records: SWCP, SWBL, and documents referenced therein.
5. For Less-Than-Minor computer program changes electing to follow this SWCP, ensure they are made per Chapter 21.
6. If the SWCP is part of a hardware design change, work with the design change Responsible Engineer to ensure hardware and software changes are coordinated.
7. Enter NA if Z numbers or other requested information is not applicable.
8. Use the SWCP and associated work authorizing documents to maintain the status of configuration items and changes and to notify affected organizations (e.g., operations) until implemented.

HEADER (COMPLETED BY SYSTEM ENGINEER (SE))

The System Engineer (SE) enters the name of the software to be changed in the upper right-hand corner of the header e.g. “(SWCP) for Software XYZ”. The SE completes the rest of the header information as follows only if the change request is accepted for further processing in Section 3.0. Leave all header fields blank or enter “NA” if rejected in Section 3.0. (avoids issuance of SWCP nos. for changes that may be rejected).

Field	Entry Information
SWCP No.	Enter the SWCP number per AP-341-402, *Engineering Document Management in Operating Facilities* (e.g., auto-generated from the Engineering Processes MS SharePoint Site. The number format is SWCP-TA-ZZZZ-NNNN where TA is the Technical Area, ZZZZ is the facility number and NNNN is a unique auto-generated SWCP number. (TA-55 adds FY after SWCP, used SCR in the past).
Rev.	Enter the SWCP revision number. Enter “0” for initial issue and 1, 2, etc. for subsequent revisions.
Page Numbering	Enter the current page and total number of pages that comprise the SWCP, excluding attachment page numbers unless otherwise noted.

1.0 SOFTWARE CHANGE REQUEST INFORMATION (COMPLETED BY REQUESTOR)

Section 1 is the **request** step of the SWCP process. Any person may be a Requestor and request a change. A Requestor requests a change by completing Section 1.0 and providing the form to the SE.

Field	Entry Information
1.1	Enter the software name/version to be changed (ideally full name and acronym). ***Note***: *Enter the number and revision of the SWBL and the text "or later revision" for those situations where multiple SCPs exist or are anticipated and the order of implementation of the SCPs is not known. If the SCP is implemented to a later SWBL revision, it is the responsibility of the SE to evaluate impacts to the SCP and make changes as required.*
1.2	Enter the date the software change request was initiated.
1.3	Enter the target (desired) date for completing the software change(s).
1.4	Enter the Requestor name, Z number, and organization.
1.5	Enter the SO name, Z number, and organization. If the Requestor is the SO, indicate "Same as 1.4" or similar text or reenter the Requestor information. The SO is typically the System Engineer (SE); note SE if different from SO. For assistance in determining the SO, refer to the SWDS or associated 2033 Form, or ask the FDAR (or see *Chapter 21, SOFT-GEN Appendix C: SO and SRLM Decision Diagram for FAC-COE*).
1.6	Enter a specific and succinct change request title.
1.7	Enter the LANL Technical Area (TA) number of the TA associated with the software change. If the software is used at various TAs, enter 99.
1.8	Enter the facility number(s) of the facility associated with the software change. Follow AP-341-402 conventions for utilities, multiple, etc. (e.g., if multiple, enter multiple or MULT).
1.9	Enter facility name(s) of the facility associated with the software change.
1.10	Enter the type of reason for the change request using the definitions below. Check all that apply. **Defect**: 1. a problem which, if not corrected, could cause an application to either fail or to produce incorrect results. 2. an imperfection or deficiency in a project component where that component does not meet its requirements or specifications and needs to be either repaired or replaced. (Ref. ISO/IEC/IEEE 24765:2010-12-15, *Systems and Software Engineering – Vocabulary*). **Requirement Change:** New and/or modified requirements.
1.11	▪ Describe the rationale for the change request (i.e., "why" the change is needed). ▪ For defects, provide the associated defect conditions, errors, error messages, system behavior, workarounds etc. in detail. ▪ For enhancements, enter the detailed enhancement requirements; use attachments as necessary. See Section 9.0. ▪ As applicable, enter the initiating SWCP source document number(s) and titles (e.g., Field Change Request (FCR), Engineering Service Request (ESR), Design Change Form (DCF), Nonconformance Report (NCR), Vital Safety System (VSS) Assessment, Issues Management, Documented Safety Analysis (DSA). ▪ Where possible, indicate what could happen if the change is not implemented.

Field	Entry Information
	▪ If known, provide a high-level description of the desired changes. ▪ Transmit the SWCP with Section 1.0 completed to the SE.

2.0 SWCP DEVELOPMENT (COMPLETED BY SE)

Section 2 is the **change development** step of the SWCP process where the SE determines what changes are needed and the impact of those changes.

Field	Entry Information
2.1	If applicable, enter the associated SSC hardware modification Design Change Form (DCF) and/or Temporary Modification Control (TMC) number and title. If not applicable, enter NA.
2.2	Enter the Facility Hazard Category (HC) for the facility associated with the software change (e.g., Nuclear – HC-2, HC-3, <HC-3; Nonnuclear – Accelerator, Live-Firing Range, Biological, Explosive, Chemical).
2.3	If applicable, enter the associated Project Identification Number (PID No.). If a PID No. is not applicable, enter "NA".
2.4	Enter the System Identification acronym from the MEL (should match "SI" column in ESM, Chapter 1, Section 210, Att. 1 [e.g., enter "CVS" for a software change to a confinement ventilation system]).
2.5	Enter the System Title from the "Sys" column in ESM, Chapter 1, Section 210, Att. 1.
2.6	Enter the software identification number (SWID. e.g., SWID-TA-NNNN-XXXX). If the software is managed under an approved software plan that does not use SWIDs, then enter NA. To obtain a SWID, follow AP-341-402, *Engineering Document Management in Operating Facilities* (see Engineering Processes MS SharePoint Site). The SWID should be the same SWID as on the Form 2033. Keep the SWID the same through revisions unless a revision is so different that the SRLM wishes to obtain a new SWID.
2.7	Select the associated Management Level (ML- 1, 2, 3, or 4) from the drop-down menu. If used for multiple ML applications, select the highest risk (lowest number), (e.g., for software used in ML-2 and ML-3 applications, enter ML-2.)
2.8	Indicate whether the change is a Major or Minor change by checking major, minor, or "NA" per Chapter 21. Select all that apply. A change may include a change to the computer program (including databases) or changes to documentation.
2.9	Enter the software company (and developer name, if known). If LANL-developed, enter "LANL" and developer name/Z number if applicable.
2.10	Enter the number and revision of the software baseline (SWBL) that is requested to be changed. This is the SWBL before the SWCP is implemented. All SWCPs must be made to an existing SWBL. ***Note:*** *Enter the number and revision of the SWBL and the text "or later revision" for those situations where multiple SCPs exist or are anticipated and the order of implementation of*

Field	Entry Information
	the SCPs is not known. If the SCP is implemented to a later SWBL revision, it is the responsibility of the SE to evaluate impacts to the SCP and make changes as required.
2.11	In a couple of sentences, summarize what changes will be made to the existing baseline computer program files and documents.
2.12	Describe risks and the potential impacts to the SWBL. Impacts should include technical (including environmental, health and safety as applicable) and estimated commercial impacts (cost, schedule, resources, etc.). If known, identify possible impacts to other systems. For changes to support software (including software tools), evaluate and describe the impact on the software product. The risks may be stated qualitatively based on system knowledge. For small, minor changes where the risks are low, relatively simple statements are acceptable that summary the low risk and the reason that it is low. (e.g., for a minor graphical user interface (GUI) change, "negligible risk; this is a minor operator GUI change which does not affect the functionality of the computer program").
2.13	Describe the document changes to affected software baselines. Provide document number, revision, and title of documents to be changed. Provide the test number (including revision) and document title of the test that ensures adequate testing of the change. These may be one or more existing/modified test cases, Post Maintenance Tests (PMTs) and/or Surveillance Tests, etc. If the test is not an existing (approved) test, but is a new or modified test, attach the test document. See Section 8.0. Describe changes with sufficient clarity such that work may be completed by competent personnel with the SWCP added as a stand-alone document to the existing SWBL and without recourse to the developer. Clearly delineate, as applicable: ▪ Design requirements (inputs) with acceptance criteria; ▪ Design output (markups to the SWBL and documents listed on the SWBL to show how changes to meet the requirements, including test plan) ▪ Computer program listings that show the intended coding changes to satisfy the design. ▪ Traceability of the change to the software design requirements Attach SWBL document markups (e.g., redlines) including, as applicable, those from the system's Master Document List such as operating procedures, etc. Ensure the SWCP no. is on the attachments. See Section 8.0. ***Note**: This step should be based on general agreement by the SE and FDAR that the change is likely to be approved and proceeding with detailed development is warranted.*
2.14	Describe the computer program (including database/configuration file) changes to affected software baselines. Provide the computer program file name, version, and change description. Describe the changes with sufficient clarity such that the computer program code changes may be made based on the SWCP added as a stand-alone document to the existing SWBL. Show proposed changes on current computer program code listings and attached revised listings. Ensure the SWCP no. is on the attachments. See Section 8.0.
2.15	Evaluate and indicate the planned type of verification and validation (V&V) for the change by checking the appropriate boxes. Check all that apply. Acceptance tests and SWCP reviews (See Section 4.3) are required for all SWCPs per Chapter 21. Testing in a simulated environment is required for ML-1 software; is required for ML-2 software when it is specified by the FDAR; and is recommended for ML-3. See notes below and Chapter 21

Field	Entry Information
	SOFT V&V for risk-based test clarifications and exceptions. Select CGD for safety software when directed by Chapter 21 when the provider does not follow an NQA-1 program. *Note 1: A simulated environment can be a test bed, bench test setup with simulated inputs/outputs, or a new system installed but not operating/functioning or relied on in its intended functional capacity (offline or setup for testing only and outside the live facility operating environment.) An example could be testing a new FACP and new devices that are installed in a facility but not yet cut over to the new system (facility is operating and relying on old FACP and devices).* *Note 2: Perform simulated environment acceptance tests prior to acceptance testing in the actual operating environment when required as described above, and whenever possible. As determined by the LANL SRLM, where acceptance testing in the actual operating environment introduces unacceptable risk or loss, an exception to performing testing in the operating environment per Section 7.0 may be pursued in accordance with ESM, Chapter 1, General, Z10, General Requirements for All Disciplines/Chapters.*

3.0 SWCP REVIEW AND APPROVAL FOR FURTHER DEVELOPENT (COMPLETED BY FDAR WITH SUPPORT FROM SE AND PSE-IM)

Section 3 is the **request approval/rejection** step of the SWCP process where management approves or disapproves the SWCP for further development.

Field	Entry Information
3.1	This is an optional step as determined by the SE. Normally it is very beneficial for others to review the SWCP at this juncture. Assuming reviews are warranted, SE identifies the reviewers, obtains comments using formal or informal methods as determined by the SE, incorporates agreed-on comments, and as applicable, either attaches the dispositioned comments to the SWCP (e.g., SWCP Interim Review Comments and Dispositions, in Section 8), or references the comment dispositions in an approved location per the governing document control process.
3.2	The SE works with the Facility Safety Basis Representative (SB) to determine the required safety basis reviews/processing. Select all that apply or select “NA” if not applicable. Ensure SB reviews address any temporary modifications required for testing, as well as the changed configuration following testing.
3.3	The FDAR evaluates and indicates “Approved”, or “Rejected”. If rejected, provide reason for rejection. If approved, enter “NA” for reason for rejection. Review in consultation with other appropriate Technical Subject Mater Experts (TSMEs) and decide whether to proceed with the SWCP. (If the facility has a Configuration Control Board (CCB) complete this section based on the CCB decision.) Verify correct SB reviews are required in 3.2. The SE revises and resubmits or, if a revised SWCP is not planned, the SE notifies the requestor. If an SWCP number was obtained and the SCWP is rejected, cancel the SWCP number per the AP-341-402, (ref. Engineering Processes MS SharePoint Site) and discard the rejected SWCP.
3.4	The FDAR enters the FDAR name, Z number, organization, signature, date and returns the SWCP to the SE. The SE notifies the requestor of the SWCP approval or disapproval,

Field	Entry Information
	obtains an SWCP number for approved SWCPs per AP-341-402, and enters the number on the SWCP along with the other header information.

4.0 MAKE COMPUTER PROGRAM CHANGES AND V&V (IMPLEMENT) (COMPLETED BY SE WITH SD, PSE-IM AND REVIEWER SUPPORT)

Section 4 is the **coding, testing (as applicable), and review** step in the SWCP process where the changes are made, tested (as applicable) and reviewed per Section 2 in an environment that is outside the live facility operating environment where proper function of the software is relied upon. This is often an iterative process involving multiple tests, meetings, reviews until requirements are satisfied. During this time, the SWCP is a working document where changes are coordinated; however, they do not require formal revision per Section 9.

Field	Entry Information
4.1	A Software Designer/Developer (SD) knowledgeable in the computer program coding makes the **computer program** changes (including database and configuration files as required) per Chapter 21 outside the live, relied-on facility operating environment per Section 2. Include baseline labeling/versioning information within the code where possible (i.e., for each logical block or class, include a brief description of the function, name of the person writing the description, and the date the description was added. Enter who made the computer program changes; provide name(s), Z number if applicable, organization name and date. Attach evidence of computer program changes in human-readable form (computer program listings). See Section 8.0, Attachments. As required, the SE makes any additional **document** changes (e.g., test plan updates) to support computer program changes and testing in a test environment. ***Note:*** *Test documents should allow for use of errata or other approval means to make controlled, minor changes during testing that are within the scope/intent of the planned tests and compliant with AP-341-402 or the governing document control procedure. Typically, document changes are required as computer program (code) changes are made.*
4.2	**As required per Section 2**, the SE, with support from others as required, tests the changed computer program in an environment that simulates the facility operating environment as much as practical, reports results, and reviews the test results per Chapter 21. Review and revise documents and computer program(s) and retest until acceptable results are obtained. Attach the acceptable results and enter the date the acceptable test results were attained and the results are ready for further review. See Section 8.0. If testing is not required per Section 2, enter “NA”.
4.3	SWCP reviews are required for all SWCPs per Chapter 21. The SE identifies—based on the scope, complexity, information sensitivity, and risk of the SWCP and Chapter 21—the affected organizations, derivative classifier/reviewing official (DC/RO), engineering disciplines personnel, impacted system engineers, quality assurance, and/or system operator representatives to review the SWCP. The SE enters the reviewer names, Z numbers, and, if document control is facilitating the review, transmits the SWCP to PSE-IM. For software design changes (i.e., as opposed to coding changes only that are required to implement an unchanged design), review by the “Original Design Organization” or an

Field	Entry Information
	"Authorized Alternate Design Organization" and the FDAR is required. Section 3 authorizes the alternate organization. The design organization approving the change shall have demonstrated competence in the specific design area of interest and have an adequate understanding of the requirements and intent of the original design. If the SWCP does not involve a software design change (e.g., design was unchanged but computer coding error was modified to meet the original design), then a design org. review is not mandatory but may be requested at the discretion of the SE or FDAR. The SE controls the SWCP interdisciplinary technical review process with support from reviewers and PSE-IM per AP-341-620, *Review and Verification of Design Documents.* AP-341-620 requires PSE-IM to ensure the review document is retained as a record. If desired, the review comments may be attached to the SWCP or reference to where the review comments are located in records, may be added to the SWCP, however that is not mandatory. ***Note:*** *The SE may require reviewers to sign and date on the SWCP, Design Review Records (DRRs), or in an approved electronic document review tool. If reviewer signatures are not placed on the SWCP, enter where the signatures may be located.* Reviewers evaluate the SWCP for adequacy and readiness to install and test in the live, relied on facility operating environment per AP-341-620 and Chapter 21 (see review criteria). Reviewers document their comments, and sign and date indicating their comments are dispositioned to their satisfaction per AP-341-620. The SE works with the reviewers and makes any required changes to resolve comments

5.0 USQ/USI PROCESSING (COMPLETED BY SE WITH SUPPORT FROM SAFETY BASIS (SB))

The USQ/USI process applies to operating Hazard Category 2 or 3 nuclear facilities, accelerator facilities, and high hazard non-nuclear facilities. If required, (Ref. Section 3.2), it **must** be completed prior to implementation of the SWCP in the facility operating environment. It may be completed earlier in the process (e.g., before Section 4.).

Field	Entry Information
5.1	If USQ or USI processing is not required per Section 3.2, the SE enters "NA". If USQ or USI processing is required, the SE transmits the SWCP to SB (including redlined documents such as operations procedures). SB completes the USI/USQ review. SB transmits the SB review documentation to the SE. The SE reviews the USQ/USI for adequacy (must be negative to proceed) and enters the USQ/USI document number, revision, and title. ***Note:*** Ensure the USQ/USI process addresses temporary system modifications (hardware and software) that may be required for testing as well as the post-test configuration.
5.2	The SE enters USQ/USI review documentation completion date, attaches the documentation (See Section 8.0) and, if desired, transmits the SWCP to PSE-IM. If review is performed as part of an associated DCF or FCR, enter the information; do not perform unnecessary or duplicate reviews.

6.0 APPROVAL FOR RELEASE TO WORK AUTHORIZATION ORGANIZATION (COMPLETED BY SE WITH PSE-IM AND REVIEWER SUPPORT)

Section 6.0 approves the SWCP for further planning (e.g., Integrated Work Documents (IWDs), scheduling, etc.) and implementation in the facility operating environment. This approval does not approve the software for use. Rather, this approval indicates that the SWCP is ready to issue to the work authorization organization for work planning to begin. **SWCP changes made after approval in this section (i.e., during Section 7) must follow the SWCP revision process in Section 9.0**.

Field	Entry Information
6.1	SE reviews to ensure the SWCP has been developed and V&V'd per Chapter 21, including acceptable disposition of review comments, and enters name, Z number, organization, signature and date.
6.2	For Minor changes, the V&V in Sections 4 and 7—and the other steps in this section—suffice. Enter "NA" if the change is a Minor change and Verifier review is not applicable. For Major changes, unless otherwise required by the SE or FDAR, also perform this step. A Verifier reviews to ensure the SWCP has been developed and V&V'd per Chapter 21 and enters name, Z number, organization, signature and date. The Verifier cannot be the same person as the SE or FDAR. The Verifier shall be a competent individual other than those who developed and documented the original design.
6.3	The FDAR reviews to ensure SRLM responsibilities per Chapter 21 are completed. As applicable, the FDAR performs a Design Authority Technical Review (DATR) per AP-341-621, *Design Authority Technical Review* and verifies adequate completion of USQ/USI and, as required, other SB-required processing prior to release to the work authorization organization. Ensure USQ/USI is negative and that work is within the facility safety basis. Enter name, Z number, organization, signature and date. Due to the nature of making changes in live operating systems, the FDAR approves the change to be made and used in operations for an interim period until review of the testing in the operating system is reviewed and formally approved for use in Section 7.2. ***Note:*** *If any Major or Minor program changes are made (e.g., using Section 9) after USQ/USI reviews, applicable reviews in Sections 4–6 must be repeated as determined by the SE to ensure the changes were adequately reviewed.*
6.4	After approval by the SE, Verifier, and FDAR, PSE-IM processes the approved SWCP as a record to the work authorization organization (e.g., as IFU – Issued for Use). PSE-IM or SE enters "No" to the question "SWCP Canceled?" and leaves the cancelation date and reason for cancelation blank. If approval is not obtained and a revised SWCP is not planned, then the SE enters the following information and transmits the SWCP to PSE-IM to process the unapproved (canceled) SWCP per AP-341-402. ▪ Indicates whether the SWCP is canceled (enter "Yes" or "No") ▪ Enters the date of SWCP cancelation ▪ Enters the reason for cancelation ▪ Notifies the requestor of the cancelation;

Field	Entry Information
	▪ Cancels the SWCP number per the governing document control/records management process (e.g., Engineering Processes MS SharePoint Site).

7.0 IMPLEMENT AND ACCEPTANCE TEST IN THE FACILITY OPERATING ENVIRONMENT (COMPLETED BY SE WITH SUPPORT FROM OTHERS)

Section 7.0 is the **implementation and acceptance testing in the facility operating environment** step in the SWCP process.

Field	Entry Information
7.1	The SE works with the facility operations/work authorizing organization to ensure required facility work control documentation and activities are completed (e.g., complete IWDs, schedule work, etc.). With support from others per the SWCP and work control documents, the SE oversees the SWCP installation in the facility operating environment. The installer of the computer program code (Installer) enters name, Z number, organization and date of installation and transmits the SWCP to the SE.
7.2	The SE, with support from operations and others per the SWCP and work control documents, V&Vs the SWCP in the facility operating environment by performing AP-341-801 Post Modification Testing (PMT) or ESM Chapter 15, Commissioning; and Chapter 21. Retest as required to achieve acceptable results. Control changes per the test plan and attach the final test report. See Section 8. Repairs and retests may be performed if they are within the scope of the test plan and work authorization document. Unsatisfactory performance that cannot be repaired and retested shall be documented and reported to facility operations. The SE, operations, and FDAR determine a course of action for unsatisfactory performance which may include revisions to the work authorization document and SWCP to allow additional repair and testing, documentation and acceptance of the degraded operation, or restoration of the system to the pre-installed configuration. If changes are required during testing, ensure the changes are documented as part of the test report and incorporated into the subsequent baseline. ***Note:*** Test plans and work control documents for testing in the facility operating environment should allow for possible installation and/or test abnormalities and have processes and contingencies to incorporate minor changes during testing and to readily "roll back" to the pre-test computer program and associated configuration to support facility operations. This should include backup copies of the computer program version associated with the SWCP and the version prior to the SWCP. Ensure all SWCP documents and computer programs reflect the most current versioning/labeling. This form serves as approval for use along with other required documentation per Chapter 21.
7.3	The SE enters the approved-for-use software version.
7.4	The SE enters the approved SWBL number and revision. As required, SE updates the documents listed on the software baseline SWBL per Chapter 21 or, alternately, updates

Field	Entry Information
	the SWCP and lists it on the SWBL. Sign and date the SWCP and SWBL (as two separate documents). If approved in 7.2, SE enters name, Z number, organization, signature, and date on the SWCP and on the accompanying SWBL and transmits the documents to the PSE-IM for control/records processing as Implemented. PSE-IM ensures the documents and associated computer program code are retained as records per Ch. 21. If the software is safety software, the SE updates the Institutional Safety Software Inventory at the Institutional Quality and Performance Assurance (IQPA) website. If not approved, SE ensures the affected systems are returned to a pre-test configuration or otherwise approved configuration per the work control documents. **The SE revises the SWCP per Section 9 until approval is obtained per above or the SE recommends cancelation of the SWCP.** If canceling, the SE transmits the SWCP to the PSE-IM for document control/records management as such.

8.0 ATTACHMENTS (COMPLETED BY SE)

Section 8 describes how to **correctly attach** information to the SWCP as part of the SWCP process.

Field	Entry Information
8.1	Enter an attachment number for each attachment. Ensure documents are attached and the correct SWCP number is associated with each attachment.
8.2	Enter the attachment title.

Possible attachments include:

- Rationale for change (if required)
- New or modified tests
- Affected, redlined, SWBL documents (may include SWDS, requirements spec and traceability matrix, risk register, hazard analysis, design document, test plans, test report, user and maintenance manuals, admin procedures, licenses)
- Changes to computer code listings
- Test results from simulated environment
- Test report from operating environment

9.0 REVISIONS (COMPLETED BY SE WITH SUPPORT FROM OTHERS)

Revise the SWCP and associated computer program per this section for changes made after the SWCP has been approved for release to the work authorization organization in Section 6 (i.e., during Section 7). Controlled changes made prior to approval in Section 6 may be made by the SE with less formal coordination among affected parties.

Field	Entry Information
9.1	The SE obtains the electronic record copy of the SWCP (documents and as required, computer program code) from PSE-IM. The SE verifies the electronic record copy matches

Field	Entry Information
	the SWCP currently being used, enters the SWCP revision number in the SWCP header and elsewhere where required on the SWCP to indicate the correct revision.
9.2	The SE enters a summary of the revision and the reason for it in Section 9.2. The SE revises the SWCP documents electronically with electronic redline-strikeout, change bars or with hand markups that clearly communicate associated revision changes. Repeat Section 4.2 (testing) and subsequent sections of this form as required. Perform and document activities including computer program changes, document changes, reviews, approvals and dates on the form commensurate with that required for the original SWCP.
9.3	Enter the SWAU (release) date (normally the same date as in Section 7.2). Submit revised SWCP to PSE-IM (e.g., as IFU – Issued for Use).

10.0 SWCP CLOSURE (COMPLETED BY SE WITH SUPPORT FROM FDAR AND PSE-IM)

SWCP closure is when the SWCP is successfully tested and installed and: (1) SWCP changes are formally made to the documents listed in the SWBL; (2) associated SWCP documents and/or pending actions are closed; (3) SWCP is removed from the SWBL and a revised SWBL is issued; and (4) SWCP status is changed to Closed and retained as a record.

Note that (1) and (3) above are required only if the SWCP did not directly incorporate the changes into the SWBL documents as part of the change. The SE closes SWCPs as soon as practical and/or whenever the collection of implemented but open SWCPs becomes too difficult to ensure consistent, correct implementation.

Field	Entry Information
10.1	The SE revises the documents in the SWBL, removes the SWCP from the SWBL, and updates the SWBL. Enter the updated SWBL number, revision, and approval date.
10.2	As applicable (indicated by checking yes or no boxes), the SE processes documents, completes open actions and enters the document numbers, revisions, and dates of closure for the associated documents.
10.3	The SE verifies that SWCP closure actions are complete; enters name, Z number, organization, signature and date; and (Major changes only) transmits the closure request to the FDAR.
10.4	This step is applicable to Major changes only (enter "NA" for Minor changes). The FDAR confirms that SWCP closure actions are complete; enters name, Z number, organization, signature and date, and transmits the SWCP to the SE. The SE ensures all closure signatures are obtained, transmits the SWCP to PSE-IM and requests the SWCP to be retained (e.g., as Implemented).

Guidance on Concurrent Change Needs

Change control requires that a baseline defines the starting point before a change to that baseline occurs. If a change need arises while a change is in process, then there are a couple of ways to address it:

1. Revise the in-process (first) change to include the subsequent idea (best way), or
2. Prepare the second change assuming the first will occur. In the second, reference and clearly include the first change as a baseline assumption—along with a hold point that ensures the first is approved and implemented before the second can be implemented. This allows approval and preparation of the second but not its implementation independent of the first. Finally, then, both changes can then be implemented in rapid succession; in some cases acceptance testing can be performed for both simultaneously.