Non-SSC Software Change Package Form (SWNCP) Instructions

GENERAL

These instructions are for completing the form and are not part of the completed form.

LANL personnel: Endeavor to use Chapter forms as-is and report issues and improvement ideas to the Chapter 21 POC. POC may authorize other methods equivalent to chapter forms in writing.

LANL subcontractors must use Chapter forms to satisfy Chapter requirements for SSC software. For Non-SSC software, subs may either use their own forms or integrate, adapt, and reformat the forms; either approach is acceptable so long as key functions, data, and approvals are retained.

This form does not apply to SSC Software. For SSC software, see AP-341-507, *SSC Software Control Software Change Package* or AP-341-519, *Design Revision Control.*

This form does not apply to less than minor computer program changes as defined below.

Less Than Minor Computer Program Change. A change or bug fix that is not a major or minor computer program change but:

- adds, deleted and/or modifies ML-4 performance function code,
- adds, deletes and/or modifies code that does not modify ML-1, ML-2, ML-3 performance function, or
- imparts changes without adding, deleting or modifying design and/or analysis output values (all MLs).

Examples: Modify code to increase the ramp time on an ML-4 softstart pump. Install security patch/service pack updates. An OTS software patch that includes a code change to prevent a screen from “freezing” or loading slowly (all MLs). Add/modify code clarifying notes (all MLs). Modify code to produce multiple reporting formats (all MLs).

For less than minor computer program changes, ensure they are made by a competent individual knowledgeable in the software and add a brief description, name of who is making, and the date that the less than minor change is made in the computer program code at the time the change is made.

Note: Upon completion of changes, the SRLM is responsible for:

(a) incorporating changes into the software baseline as soon as practical after changes are approved, and

(b) retaining Non-SSC Software Change packages as a record in accordance with P1020-1, *Laboratory Records Management* or the governing records management process.

HEADER (COMPLETED BY REQUESTOR)

Field	Entry Information
SWNCP No.	Number this form in accordance with the governing document control procedure. For LANL owned Non-SSC software in the scope of the Facility Conduct of Engineering (FAC-COE), use the numbering scheme and process specified in AP-341-402, *Engineering Document Management in Operating Facilities*.
Rev.	Enter "0" for initial revision and 1, 2, etc. for subsequent revisions.

1. SOFTWARE CHANGE REQUEST INFORMATION (COMPLETED BY REQUESTOR)

Field	Entry Information
1.1	Enter the name of the software to be changed.
1.2	Enter the software identification number (SWID). The SWID should be the same SWID as on the Form 2033. SWIDs are obtained in accordance with AP-341-402, *Engineering Document Management in Operating Facilities*.
1.3	Enter the date the Non SSC software change request was initiated.
1.4	Enter a specific and succinct Non-SSC software change request title.
1.5	Indicate the software type to be changed by checking either the safety or non-safety box. If the software is used for both safety and non-safety applications, check the safety box only.
1.6	Indicate the management level (ML) application by checking one of the boxes. If used for multiple ML applications check the highest (lowest numbered) box. (e.g., for software used in ML-2 and ML-3 applications, check the ML-2 box.)
1.7	Enter the TA number of the technical area associated with the software change. If the software is used at various LANL TAs, enter "multiple".
1.8	Enter the facility number of the facility associated with the software change. If the software is used at various LANL facilities, enter "multiple".
1.9	Enter facility name of the facility associated with the software change. If the software is used at various LANL facilities, enter "multiple".
1.10	Indicate whether the change is a major or minor change by checking either the major or minor box. Note that a change can include a change to the computer program (including data) or changes to documentation. Use the following definitions. **Major Computer Program Change:** A change or bug fix that: ▪ the Software Responsible Line Manager (SRLM) or computer program supplier designates as a major change, ▪ adds or deletes an ML-1, ML-2 or ML-3 SSC performance function, ▪ modifies ML-1 or ML-2 SSC performance function code, excluding clarifying notes,

Field	Entry Information
	▪ adds, deletes or modifies design and/or analysis output values of ML-1, ML-2 or ML-3 calculations, ▪ recodes to another language, or ▪ modifies a significant number of lines of code. ***Note:*** A Major OTS computer program change is often indicated with increment increase in version number (e.g., change from version 1 to 2). An evaluation of the software however, is required to determine whether the version release is a major change. Examples: A change from Delta V control system software from version 7.0 to version 8.0. A change that adds code to implement an interlock functional performance requirement that an ML-3 laser system cannot be activated until area doors are locked. A change that modifies code on ML-2 ventilation system backdraft damper so that damper closure does not slam shut and potentially damage the damper assembly. A change in the algorithm or databased used for calculating the water flow rate in an ML-3 fire protection piping system design. A change in coding language from C to C++. A version change where 40% of the lines of code were modified. **Minor Computer Program Change:** A change or bug fix that is not a major computer program change but: ▪ adds or deletes an ML-4 SSC performance function, ▪ modifies ML-3 SSC performance function code, excluding clarifying notes, or ▪ adds, deletes or modifies design and/or analysis output values of ML-4 calculations ***Note:*** A minor OTS software change is often indicated with a fractional increase in version number (e.g., 1.1 or 1.01). An evaluation of the software however, is required to determine whether the version release is a minor change. Examples: Add code to implement automatic pump shut-off performance requirement on ML-4 sump low-level alarm. Modify code to fix a coding error on an ML-3 heating/cooling system so that cooling, rather than heating activates at high temperatures. Change the algorithm for calculating the current that flows in an ML-4 electric power system under abnormal conditions. **Minor Document Change.** A document change, as defined by the governing document control program, that includes but is not limited to inconsequential editorial corrections, grammatical and spelling changes, organizational name and acronym changes, and similar type changes. A minor document change does not include revisions, changes, or modifications to a document (e.g., procedure, work instruction, drawing, etc.) which impact the effective implementation of the requirement(s). (Ref. P1020-2). **Major Document Change.** A document change that is not a minor document change.
1.11	Enter the type of reason for the change request. Check all that apply. **Defect**: 1. a problem which, if not corrected, could cause an application to either fail or to

Field	Entry Information
	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.
1.12	Describe the reason (rationale) for the change request. Describe "why" the change is needed. Enter the Nonconformance Report (NCR) name and number or other problem/error report that may apply. Indicate what could happen if the change is not implemented.
1.13	Describe "what" the change is to sufficient detail to allow a reviewer to understand, review and as appropriate, approve the change request.
1.14	Enter the name, Z number if applicable and organization of the person requesting the change (Requestor). This should typically be the SO although others may also be Requestors. For assistance in determining the SO, see SOFT-GEN Appendix C: *SO and SRLM Decision Diagram for FAC-COE.*
1.15	Describe the impacts of the software change. Identify potential risks associated with the change.
1.16	List affected software baseline documents. Provide document number, revision, document title, and document description. Integrate software design requirements, as applicable with the SSC technical baseline documents. See STD-342-100, *Engineering Standards Manual, Chapter 1, Section Z10, General*; AP-341-616, *Technical Baseline Change During Design;* and AP-341-405, *Identification and Control of Technical Baseline, Variances, Alternate Methods, and Clarifications in Operating Facilities*.
1.17	List affected software baselines computer programs. Provide computer program filename, revision, and computer program description.
1.18	Indicate the planned type of verification and validation (V&V) for the change by checking the review(s), test(s) and/or alternate calculations(s) box. Check all that apply.
1.19	Describe the V&V to sufficient detail to allow a reviewer to understand, review and as appropriate, approve the change request and the planned approach to V&V. Describe the approach to retesting and acceptance of test results.
1.20	Indicate whether the software is used for the administrative control in a hazard category 2 before 3 nuclear facility, high hazard nonnuclear facility, moderate hazard nonnuclear facility, and/or accelerator facility by checking either the "Yes" or "No" box. If "No" is checked, go to Step 2.1. If "Yes" is checked, go to Step 1.21.

Field	Entry Information
1.21	Indicate if a safety basis (SB) evaluation of the change is required per the applicable SB procedures listed on SB website by checking either the yes or no box. (e.g., SBP-15-351, *Design Basis or Safety Basis Change Review,* SBP113-3, *Unreviewed Safety Issue Process.)* If "Yes" is checked, then the SO ensures the required actions are taken, attaches evidence of completion prior to submitting the SWNCP for approval for use (Section 4.0). If "No" is checked, proceed to Section 2.0. As required, contact an FDAR or a safety basis representative for assistance.
1.22	Enter the attached design basis and/or safety basis document numbers associated with the evaluation(s) (e.g., per SBP-112-3, USQD TA55-16-0234-D).

2. REVIEW AND ACCEPTANCE (COMPLETED BY SRLM AND AS REQUIRED FDAR OR SUBCONTRACTOR TECHNICALLY QUALIFIED PERSON)

Field	Entry Information
2.1	The SRLM evaluates the change request and checks the appropriate decision box. Describe comments when "Approved with comments" box is checked. Provide reason(s) for rejection when "Rejected" box is checked. ***Note:*** **"**Accepted" means that the requested change is acceptable as proposed. "Accepted with Comments" means that the change is authorized as described in comments.
2.2	Enter the SRLM name, Z number if applicable, organization, signature, and date.
2.3	If the change is a major change for Non-SSC software that is used for administrative control in a LANL facility, then the FDAR evaluates the change request and checks the appropriate decision box. ***Note:*** For software used among multiple facilities at LANL, where there are multiple FDARs, the LANL Facility Design Authority, or a representative sampling of FDARS (but no fewer than two) must review the request. If the software change is a minor change or a change to software that is not used for administrative control in a LANL facility, then the SRLM checks the "NA" decision box and proceed to Step 2.5.
2.4	Enter the FDAR's name, Z number, organization, signature, and date for all decisions other than "NA" in 2.3. If "NA" in 2.3, leave blank.

3.0 VERIFICATION AND VALIDATION (V&V) (COMPLETED BY SO)

Field	Entry Information
3.1	Plan and complete V&V, including retesting as required and acceptance of test results. Control changes. Attach V&V plan documentation, V&V results documentation, and revised software baseline (SWBL) completed with the exception of the SRLM signature. For software changes used for ML-1, ML-2 or ML-3 administrative control in a LANL facility, also include the planned implementation sequence. Base the extent of V&V on the complexity of the software, the degree of standardization, the similarity with previously approved software, and the importance to safety. Major changes should be acceptance tested per SOFT-V&V. For minor changes, if review alone is inadequate to determine if requirements are satisfied, use alternate calculations and/or develop and integrate (interim) tests to support the review. For SSC or Non-SSC computer programs that were originally commercially dedicated: CGD major changes. CGD minor changes if the change affects the critical characteristic(s) that pertain to the functionality of the computer program and as applicable, the associated SSC. Evaluate and indicate whether the change is recommended/not recommended "for approval for use" or not by checking the appropriate box and entering SO name, Z number if applicable, organization, signature and date of recommendation. For assistance in determining the SO, see SOFT-GEN Appendix C: *SO and SRLM Decision Diagram for FAC-COE.* If recommended for approval for use, proceed to Step 4.1. If not recommended for approval for use, do not proceed to Step 4.1. Provide reason for recommending disapproval and retain the form as a record in accordance with P1020-1, *Laboratory Records Management* (or for subcontractors, the subcontractors governing records management process).

4.0 APPROVAL FOR USE (COMPLETED BY SRLM AND AS REQUIRED, FDAR)

Field	Entry Information
4.1	The SRLM evaluates the change request for conformance to requirements and checks the appropriate decision box. Provide reason(s) for rejection when "Rejected" box is checked. For assistance in determining the SRLM, see SOFT-GEN Appendix C: *SO and SRLM Decision Diagram for FAC-COE.*
4.2	Enter the SRLM name, Z number if applicable, organization, signature, and date on the SWNCP and the attached revised SWBL.
4.3	If the change is a major change for Non-SSC software used for control in a LANL facility, then the FDAR evaluates the change and implementation sequence of the change in accordance with AP-341-621, *Design Authority Technical Review* and checks the appropriate decision box.

Field	Entry Information
	Note: For software used among multiple facilities at LANL, where there may be multiple FDARs, the LANL Facility Design Authority, or a representative sampling of FDARS (but no fewer than two) must review the request. Provide reason(s) for rejection when "Rejected" box is checked. If the software change is a minor change or, a major change for software that is not used for administrative control in a LANL facility, then the SRLM checks the "NA" decision box.
4.4	Enter the FDAR name, Z number, organization, signature, and date for all decisions other than "NA" in 4.3. If "NA" in 4.3 is checked, leave blank. The SWNCP is complete. The SRLM retains the SWNCP as a record in accordance with P1020-1, *Laboratory Records Management* or the governing records management process.

5.0 ATTACHMENTS

Field	Entry Information
5.1	Provide attachments as appropriate. Attachments are not mandatory. Enter the attachment number.
5.2	Enter the attachment date.
5.3	Enter the attachment title, including revision as appropriate.

6.0 REVISIONS

Field	Entry Information
6.1	If the SWNCP requires revision, then revise in accordance with the governing document control program. Enter the revision number: 1, 2, etc. as appropriate.
6.2	Enter the revision approval date.
6.3	Describe the change and why the change was made.