SSRL Electronic Radiation Safety Work Control Form (RSWCF) Instructions

The following procedure is used for controlling all work (**) involving the SSRL radiation safety systems which include shielding, exclusion barriers, the Personnel Protection System (PPS and HPS), and the Beam Containment System (BCS). The RSWCF process is also used by the SSRL Safety Officer and the Radiation Physicist to pre-screen work on configuration controlled radiation safety systems for potential Unreviewed Safety Issues (USI). See Conduct of Accelerator Facilities Operations (CAFO), CACM-2019-059.

Procedure

1. The Person Responsible for the work completes the **Preliminary Applicability Screen** and then uses the "Submit" button to create a blank form. **If the work does not meet either one of the conditions, then a SPEAR3 RSWCF must be opened and thus no new SSRL RSWCF will be created.**
2. The Person Responsible for the work completes the **Section 1**, **Section 2a**, **Section 2b**, and designates the **Section 5** signoffs. The Person Responsible should seek guidance from the Area Manager, SSRL Safety Officer (SSO), and/or Radiation Physicist (RP) as necessary to complete these sections. The Person Responsible then uses the "Apply Changes" button on the form to create the form and establish a form number. The beamline responsible engineer for this area is automatically sent an informational email stating that this RSWCF was created.
3. The system then creates **Section 3, Pre-Work Approval** and sends an email to the RP officer (and the Person Responsible) who is responsible for approving the form after making any changes she/he sees fit to make. Specifically, the SSRL RP officer examines the work description of **Section 1** and verifies the **Preliminary Applicability Screen**. Next, he/she verifies the appropriateness of the hazard controls of **Section 2a**, the RSWCF closure conditions of **Section 2b**, and the designated **Section 5** signoffs. Finally, the RP officer name is selected in the drop-down menu next to their title and the "Apply Changes" button is activated in this section for signoff acceptance.
4. The RSWCF is next routed by email message to the SSO and then the Area Manager who perform the same checks as listed in item 2. If the SSO or Area Manager make any changes to the form, it is routed back to the RP Officer for approval and the sequence of approvals is started again.
5. Upon completion of the **Pre-Work Approval** the Duty Operator (DO) confirms that the form will not be dropped by consulting with the Person Responsible, then executes the hazard controls listed in **Section 2a** and releases the work per **Section 4**. The Person Responsible assigns a Person Doing the Work. The Person Doing the Work verifies the hazard controls and work release with the DO and approves the form. The work is now released for activity and an automated email is sent to SPEAR operations and the beamline responsible engineer indicating that the form is open and work is released.
6. After completion of the work, the Person Responsible signs off the work completion in **Section 5**. Next, the RSWCF closure requirements listed in **Section 2b** are signed off per the check offs listed in **Section 5**. Emails are then sent to those responsible for signing off individual requirements of **Section 5**.

   After the completion of the work and before operation of the facility, the DO and SSO review the open RSWCF to ensure that the necessary checkouts and signoffs have taken place for the area and beam lines into which the beam is to be operated.

Note that if **Section 5** dictates that a beamline should be keyed online for a radiation survey, the beamline can only be keyed online after DO confirms that all other signoffs in Section 5 are completed. RPFO (Radiation Physics Field Operations) must notify the DO immediately when the survey is complete and the DO should key the BL offline pending further RSWCF approvals in Section 5 and Section 6. This prevents the beamline from being operated while the RSWCF is still open except when the survey is performed.

The SSO then signs **Section 6** of the form acknowledging that all checkouts and signoffs have been completed. **Note that the DO may sign the form for specific individuals who do not have access to the form, but they must include documentation in the form (Comments and Attachments) that verify that they had authority to sign for the unavailable individual(s).** The DO confirms that proper documentation of signature authority is found in the form by checking the box before signing and closing the form and restarting the facility. An automated email is sent to SPEAR operations and the beamline responsible engineer indicating that this RSWCF is closed.

Off-Hours Procedure

7. If it is necessary to perform work on radiation safety systems outside normal working hours when it may not be possible to obtain signatures from some of the key personnel listed in **Section 3**, the following abbreviated procedure may be used (SSO or RP approval by phone or email required to open and close form).

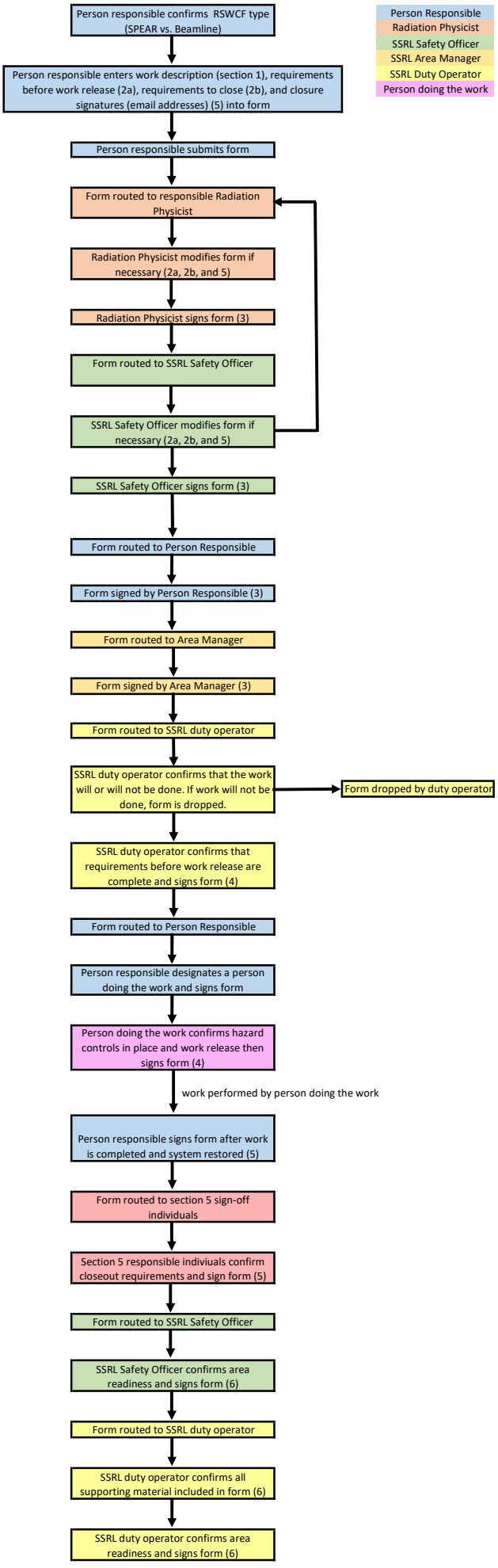
   7.1. In the absence of the Person Responsible, the Duty Operator may complete **Section 1**. To complete **Section 2**, the Duty Operator shall consult with the SSO and/or Radiation Physicist.

   7.2. The Duty Operator may sign for the Person Responsible in Section 3. At least one Area Manager must sign the form. If a Radiation Physicist cannot be reached, the responsibility for the **Section 3** approval may be assumed by the SSO or his/her backup. The DO can sign for the SSO, RP, BCS, or others, but they must include documentation of the interaction between themselves and the person granting authority to sign in their place. If the work to be performed is a direct repair or replacement to restore the normal function of the safety system, the work may be started prior to contact being made with the SSO or Radiation Physicist. For work on any beam line which meets the **Preliminary Applicability Screen**, the beam line shall be keyed off-line at the BL*xx*-0 HPS chassis and the online/offline key tagged with RSWCF number and locked in the SSRL key safe. **If the work does not meet the conditions of the Preliminary Applicability Screen, then a SPEAR3 RSWCF must be opened**.

   7.3. Section 4 is executed as described in item 5 above.

   7.4. To complete **Sections 5 and 6**, the Duty Operator shall consult with the SSO and indicate approval and any conditions. If the SSO cannot be reached, the responsibility for the SSO approval may be assumed by her/his backup.

** Work is here defined as any activity which can interrupt or change the functionality of a system under configuration control, other than the operation of normal controls, switches, and so forth, and excluding system checks or calibrations.


Person responsible confirms RSWCF type (SPEAR vs. Beamline)
Person responsible enters work description (section 1), requirements before work release (2a), requirements to close (2b), and closure signatures (email addresses) (5) into form
Person responsible submits form
Form routed to responsible Radiation Physicist
Radiation Physicist modifies form if necessary (2a, 2b, and 5)
Radiation Physicist signs form (3)
Form routed to SSRL Safety Officer
SSRL Safety Officer modifies form if necessary (2a, 2b, and 5)
SSRL Safety Officer signs form (3)
Form routed to Person Responsible
Form signed by Person Responsible (3)
Form routed to Area Manager
Form signed by Area Manager (3)
Form routed to SSRL duty operator
SSRL duty operator confirms that the work will or will not be done. If work will not be done, form is dropped.
Form dropped by duty operator
SSRL duty operator confirms that requirements before work release are complete and signs form (4)
Form routed to Person Responsible
Person responsible designates a person doing the work and signs form
Person doing the work confirms hazard controls in place and work release then signs form (4)
work performed by person doing the work
Person responsible signs form after work is completed and system restored (5)
Form routed to section 5 sign-off individuals
Section 5 responsible indiviuals confirm closeout requirements and sign form (5)
Form routed to SSRL Safety Officer
SSRL Safety Officer confirms area readiness and signs form (6)
Form routed to SSRL duty operator
SSRL duty operator confirms all supporting material included in form (6)
SSRL duty operator confirms area readiness and signs form (6)
Person Responsible
Radiation Physicist
SSRL Safety Officer
SSRL Area Manager
SSRL Duty Operator
Person doing the work