RSID software – Training Notes

Contents

Section 1: Overview

1.1 User overview

Application

Radiation users apply to use the system and the application is approved by both the Radiation Safety Coordinator (RSC) and the university Radiation Protection Manager (RPM) before the user account is activated.

Assessment

Assessments are created on the system for each radionuclide / technique used by a group. The assessment must be approved by the RSC before it can be used.

Ordering/receiving sources

Approval requests are entered on the system for each source required and then approved by the RSC prior to going through the normal purchasing process.

Order requests can only be made for sources whose catalogue code is on the system and for which an approved assessment exists.

Using sources

When a source has been logged in to the system it can be used by anyone that has been included on its assessment.

To use a source a user has two options:

1. Take an aliquot. – i.e. dispense an amount from the source to use.

2. Create a daughter stock – i.e. dispense an amount from the source and dilute this to create a sub-stock.

On either of the above choices the system creates a sequential aliquot/sub-stock number.

Disposing of waste

To make a disposal a user either chooses an aliquot to dispose of or chooses to dispose of all of a remaining source. The default percentages for aqueous, solid and organic waste are set in the assessment or can be changed at the disposal screen. The open bag in that lab is prompted or the user can create a new bag. Waste bags can then be sealed and transferred to the departmental waste collection area by the user.

1.2 RSC overview

The role of the Radiation Safety Coordinator (RSC) is to approve / authorise users, approve assessments, and authorise radioactive source orders.

Source usage, aliquot disposal and waste bag management functions are the same as for a user, however an RSC can also edit sources and aliquots and can produce reports on stocks, activity, waste and disposals.

An RSC has all the user functions plus the following:

- edit and approve user registrations (then also require RPM approval);
- edit and approve assessments;
- edit and approve orders;

An RSC also has access to the following reports

- activity on-site;
- stocks on-site;
- monthly disposal data;
- waste accumulation.

Section 2 User instructions

2.1 Registration

Summary

A user must complete an application form before being given access to the system. The form collects data on the person, intended work, previous training and experience.

The registration is valid for one academic year and must be renewed at the beginning of each academic year.

On first application a local training form must also be downloaded, completed, signed by the person's line manager and forwarded to the Radiation Safety Coordinator (RSC).

Details

- For an initial registration choose the 'Apply' button on the system login page and complete the details fully including work proposal (includes justification for using radiation), previous experience and previous training.

- Click the link to the local training form to download it, get it completed, signed and send it to your RSC.

- When your local training form has been received and your registration has been approved you will receive a work permit by email and will be able to log in to the system.

- You must renew your registration at the start of each academic year or if you change the type of work you are doing at any time during the year - you will receive an email prompt at the start of each academic year.

2.2 Assessment

Summary

Radiation risk assessments are completed in two parts:

1. A generic risk assessment has already been completed for each radionuclide by the Radiation Protection Service.
These are accessible online and via a link from the assessment form.

2. A dose assessment specific to the technique and radionuclide a group is planning to use must be completed using the assessment form in RSID.

An assessment must be completed for a specific catalogue code before that source can be used on the system and to be able to use a source a user must be included on the assessment for that source.

Each assessment must be approved by the RSC before it can be used.

Each assessment can have more than one associated catalogue code and more than one associated user, i.e. an assessment can be created for similar compounds of a specific radionuclide and all the users in a group can be included on the assessment.

The data required for the dose assessment are nuclide, stock activity, sample activity, dispensing time, sample handling time and number of experiments per year. The dose estimates are then calculated by the system using library information for that radionuclide.

To cover other legal requirements we also ask for a justification statement and a work description.

For system management data storage/usage rooms and work start/finish dates are also needed.

Create new assessment

- Choose 'Assessments' on the main user menu and you will be given a list of all the assessments created for your department (school). Then click 'New Entry'.

- Complete the form fully including a justification for using radioactive material and a description of the work.

Radionuclide - on choosing the radionuclide the catalogue reference field and radiation hazard section will be updated from the system library.

Catalogue reference - if you cannot find the specific catalogue reference for your material please contact the RSC or RPM immediately so that this can be added to the library.

Quantity to be ordered - enter the maximum source activity in this field, the system will not allow a source to be ordered with an activity greater than this value.

Max Activity per Experiment - enter the maximum aliquot size in this field, the system will not allow an aliquot to be created with an activity greater than this value.

Pipetting time / Sample handling time – enter estimates of the maximum handling times for this work.

- After completing the top section of the form choose 'Calculate Dose' for the dose calculations to be displayed (see below). If any required data is missing a prompt will appear in red text at the top of the form.

Radiation hazard - check the data in the radiation hazard section (automatically completed from the radionuclide library) and add any other information required in the 'Other control measures' field.

Estimated Waste Disposal Route Percentages - waste disposal percentages entered here will be used as the defaults for any disposals from a source associated with this assessment, but can be changed at the disposal screen.

- When all data has been entered choose 'Save', you will be prompted for any missing mandatory data and on saving the assessment an email is sent to the RSC for approval.

- The assessment cannot be used by the user until approved and signed off by the RSC.

Dose calculations

For routine work the extremity and whole body *external* doses are calculated for an unshielded source (these doses will be reduced by using appropriate shielding). The routine inhalation and ingestion *internal* doses are calculated based on a $1e^{-6}$ intake. The relevant University of Leeds dose constraints are displayed for comparison.

For accident scenarios the skin contamination dose, internal dose, and fetal dose are calculated based on contamination/intake of 10% of the stock activity.

Dose calculation formulae are given at the bottom of the form. For each radionuclide the calculations use beta and gamma external dose coefficients, internal dose coefficients, skin contamination dose factors, organ weighting factors, and fetal dose coefficients.

Viewing / editing assessments

- Choose 'Assessments' on the main user menu to get a list of all the assessments created for your Faculty/School.

- You can view any assessment, however you can only save changes to assessments that you have created (i.e. your name is shown in the 'Owner' field).

- To add a catalogue reference to an assessment choose the reference number under 'New catalogue reference' and check the 'Add selected ref' box, then save the form.

- To add a user to an assessment chose the user under 'New user' and check the 'Add selected user' box, then save the form.

- To add a usage room to an assessment chose the room under 'New Usage Room' and check the 'Add selected room' box, then save the form.

- After amending a form the assessment must be re-approved by the RSC before it can be used.

2.3 Source order and login

Summary

A source must go through an approval and login process before it can be used on the system.

Note that this does not replace the normal purchasing processes but an approval must be obtained (via the approval process below) before radiochemicals are ordered.

An approval request can only be made by a user against a valid assessment, i.e. the catalogue reference must be included on an assessment that also includes the user as a current user.

After an approval request has been made it must then be approved by the RSC before the source can be ordered and booked into the system.

Ordering

1. Choose 'Approval Request' on the main user menu.

2. Choose the appropriate assessment number from the list and choose 'Next'.

3. Now choose the correct catalogue reference for your order from the dropdown box.

4. Enter the activity required (format xMBq, xkBq, xmCi, or xµCi) and a delivery date (format dd-mm-yyyy).

5. On saving a new source number will be generated and email notification of the order request sent to the RSC and RPM.

Reviewing order status

1. Choose 'List Sources' on the main user menu – all sources will be displayed. Approved sources will have a status of 'Approved' in the status column. Unapproved sources will have a status of 'New Order'.

Logging sources in

1. Choose 'Login New Source' on the main user menu - the approved sources that you are allowed to login will be displayed.

2. Select the source and click 'Login Source'.

3. Complete the 'Volume Delivered', 'Activity', 'Reference Date', 'Manufacturer's Source ID', 'Usage Room', and 'Storage Room' fields and save.
N.B. It is important that the Activity, Volume and Reference date are accurate for the system to correctly calculate activities of aliquots and disposals.

4. The source is now available for use.

2.4 Source usage

Summary

A source can be used by any user that is included on the associated assessment.

To use a source a user has two options:

1. Take an aliquot. – i.e. dispense an amount from the source to use.
2. Create a daughter stock – i.e. dispense an amount from the source and dilute this to create a sub-stock.

On either of the above choices the system creates a sequential sub-stock number (starting at 1).

Numbering convention is:

daughter stocks: *stock number followed by forward slash (/) followed by sequential number;*

aliquots: *stock (or daughter stock) number followed by hyphen (-) followed by sequential number.*

e.g. Third aliquot of second daughter stock from stock ID RPS1 is RPS1/2-3.

Taking an aliquot / creating a daughter stock

1. Choose 'Source Usage' on the main user menu – the sources that you are allowed to use are displayed. If the source you wish to use is not displayed check that it has been logged in correctly (see section 2.7) and that you are included on the associated assessment.
2. Select the source and choose 'Take Aliquot'.
3. Enter the quantity removed from the stock (or to use all of the remaining source for this aliquot choose the 'Use All of this Source for this Aliquot' button).
4. Now either

    a. click 'Send data' to create an aliquot (a sequential aliquot number is created)

    or

    b. check the 'Create a Daughter Stock' box, enter a 'Volume of Daughter Stock' value and then click 'Send data' (a sequential daughter stock number is created).

2.5 Source disposal

Disposing of your aliquots

To dispose of an aliquot taken by yourself:

1. Choose 'Aliquot Disposal' on the main user menu – the aliquots that you own are displayed.

2. Select the aliquot from the list and choose 'Make Disposal'.

3. The default disposal percentages that were entered in the assessment are automatically entered into the allowed disposal routes, however you can change these values for any disposal.

    Additionally if you are only disposing of part of an aliquot please adjust the percentage values to reflect this. Please note that for any further disposals from that aliquot the percentages are of the *remaining* aliquot amount. The aliquot will remain open on the system until all of its volume has been disposed of.

4. The open solid and/or organic waste bags for that usage room are displayed in the appropriate disposal route column and any solid or organic disposals will be allocated to those bags. If you change the usage room using the dropdown box at the bottom of the form the available disposal routes and bags will be updated.

5. If you want to dispose to a new bag choose 'New Bag' in the appropriate column. If you have not sealed the previous bag then a dropdown box will appear in the 'Bag used' row to choose which bag to use. Please ensure that the bag number from the system is written on the bag clearly.

6. Click 'Send Data' to confirm the disposal. If there is an error the error message will be displayed at the top of the form.

7. When the disposal has been successful a confirmation screen will open – you can seal and transfer the waste bag or view a stock card at this point.

Disposing of another person's aliquots

To dispose of an aliquot taken by another person:

1. Choose 'Source Usage' on the main user menu – the sources that you are allowed to use will be displayed.

2. Select the parent source and choose 'Make Disposal' - the available aliquots for that source will be displayed (or if there is only one aliquot remaining the disposal screen will open).

3. Select the aliquot from the list, choose 'Make Disposal' and continue as in 3-7 above.

Disposing of stocks

To dispose of redundant stocks:

1. Go to the 'Source Usage' screen, select the source and choose the 'Dispose of remaining stock' button. This will open the aliquot disposal screen and then continue as in 3-7 above.

2. Please remember that if you are disposing of remaining stocks you will need to adjust the disposal percentages – e.g. if you dispose of a stock to drain and wash out the stock bottle change the percentages to 1% solid, 99% aqueous.

2.6 Waste bag management

Summary

A user can open new waste bags, seal existing waste bags and transfer waste bags to the departmental waste collection area.

Details

1. Choose 'Waste Bags' on the main user menu – all the waste bags remaining in the department are displayed.

2. From this screen a user can select bags, list bag contents, and search for bags of specific type or in specific rooms.

3. A user can also seal waste bags and transfer them to the waste collection area on this screen by selecting the bags and clicking the appropriate button.

4. New waste bags can be opened whilst making an 'Aliquot Disposal' (see section 2.5 above) or the 'Create New Bag' button on this screen can be used - waste type and room number must be specified and a new bag will only be created if the room does not already contain a waste bag.

2.7 Source management

Summary

A user can view source data for any source in the department but cannot edit this data.

Details

1. Choose 'List Sources' on the main user menu – all the sources in the department are displayed.

2. Select the source required and choose 'Stock Card' to view a stock record showing source details, aliquot and daughter stock details and aliquot disposals.

3. To view all of a source's data select the source and choose 'Edit Selected Source'. The source data will be displayed but a user cannot save changes.

4. To print a new source 'usage sheet' which can be used for a written record of source usage choose 'Sample Sheet'.

Section 3 RSC instructions

3.1 Users

Summary

A user registration must be approved by the RSC before the username becomes valid on the system.

When a user sends the registration data an email is sent to the RSC to prompt them for approval. The RSC must then login and approve the registration and when this has been done an email is sent to the RPM to prompt them for approval. The user becomes valid after the RPM has approved the registration.

New user approval

1. Choose 'Find and Edit Users' on the RSC main menu.
2. Check the 'Search for New users' box and click 'Search'.
3. Select the user to approve and choose 'Edit Selected Entry'.
4. Check the 'RSC DECLARATION' box.
5. Any other user details can be amended at this stage then click 'Send Data'.
6. An email will be sent to the RPM to complete the registration process.

3.2 Assessments

Summary

Dose assessments must be completed by the user for a specific catalogue code before that source can be used on the system.

The assessment must also include the rooms where the source will be used and the users that are authorised to use the source.

When a user creates an assessment an email is sent to the RSC to prompt them for approval.

An assessment must then be approved by the RSC before it can be used.

Assessment approval

1. Choose 'Assessments' on the RSC main menu.
2. Select the assessment to approve (check the 'List New' box and click 'Search' to find all unapproved assessments) and choose 'Edit Selected Entry'.
3. Check the assessment details are correct, complete the 'Date Approved' and 'Approved By' fields and click 'Save'.

3.3 Source order and login

Summary

A source must go through an approval request and login process before it can be used on the system.

An approval request can only be made by a user against a valid assessment, i.e. the catalogue reference must be included on an assessment that also includes the user as a current user.

After an approval request has been made it must be approved by the RSC before the source can be booked in.

There are two options for receiving and logging in sources depending on local arrangements, i.e. whether a stores person has been set up for that department:

1. If no stores person exists the user can login a source as soon as it has been approved.

2. If a stores person exists for that department the source must first be approved by the RSC, it must then be logged into stores by the stores person before the user can log it into the system.

When a user places an order request on the system an email is sent to the RSC to prompt them for approval.

Order approval

1. Choose 'New Orders' on the RSC main menu – a list of unapproved orders will be displayed.

2. Select the order to approve and choose 'Edit Selected Source'.

3. Check the order details are correct, and then choose 'Accepted by RSC' in the dropdown 'Status' field at the top of the form, then click 'Save'.

4. The email to be sent to the user will now be displayed and can be amended and then sent or cancelled.

5. The status choices are:

    a. New – marks new unapproved orders.

    b. Accepted by RSC – marks source as approved by RSC and can be booked in by either stores or user (see above).

    c. In Stores – marks source as arrived in stores and can be booked in by user.

    d. Current – status of source after booked in.

    e. Dead – status of source when it has been fully used and disposed of.

3.4 Source management

Summary

An RSC can view source and aliquot data for any source, aliquot or daughter stock in the department. If you would like to change any of the data once a source has been logged in please contact the RPM.

View source data

1. Choose 'Source Data' on the RSC menu – all the sources in the department are displayed (this is the same as 'List Sources' on the user menu.

2. Select the source required and choose 'Stock Card' to view a stock record showing source details, aliquot and daughter stock details and aliquot disposals.

3. Select the source required and choose 'Edit Selected Source' to view source data. The source data will be displayed as for a user.

4. An RSC also has a 'New' button on this screen and a 'New Source' button on the source list screen to be able to enter new source details directly without needing to go through the order process (however note that the RSC must be included on an assessment to be able choose it at this screen).

3.5 Reports

Summary

An RSC can view reports of current activity, stocks, waste disposals, and waste accumulation,

Activity reports

1. Choose 'Activity On-Site' on the RSC menu.

2. To view the activity summary for the whole department leave the room dropdown set to 'All'.

3. To view a summary with the activity totals for each room check the 'List by Room' box.

4. To view the activity totals for an individual room choose the room from the 'room' dropdown.

Stock reports

1. Choose 'Stocks On-Site' on the RSC menu.

2. Stock reports can be filtered by group, user, or room.

Disposal reports

1. Choose 'Disposal Reports' on the RSC menu.

2. Choose the year, month and disposal type and choose 'List Disposals'.

3. The monthly disposal summary for the specified disposal type will be displayed. For an annual summary choose 'All' in the month dropdown.

Waste accumulation reports

1. Choose 'Waste Onsite Reports' on the RSC menu.

2. Choose the type of waste and choose 'List Waste'.

3. The current accumulation levels of the type of waste chosen will be displayed.