

RESPONSIBILITIES OF EXPERIMENTERS AT NSCL

Manager for User Relations

February 27, 2020

This document is available on the NSCL website: <http://nscl.msu.edu/users/visit.html>

This document describes the responsibilities of experimenters at NSCL as well as NSCL procedures and documentation relevant to experimenters during the life cycle of an experiment. This document will be sent by e-mail to the Spokesperson of the experiment two weeks prior to the start of the experiment. It is the Spokesperson's responsibility to make sure that all members of the experimental team are aware of this document's contents. While the document, including the Appendices, is required reading, the contents of the links (with one exception) are recommended but not required. The contents of the S3 vault Guidelines (see S800 Wiki page: <https://wikihost.nscl.msu.edu/S800Doc> under "Documentation S3 vault") are required reading for S3 vault experimenters. Additional details are posted at <http://nscl.msu.edu/users/guide.html>.

We require that:

- (a) the Spokesperson of the experiment, prior to the start of the beam time, signs a form acknowledging that he/she has read this document and made sure that all members of the experimental team who may be in charge of a shift are aware of the document's contents and that the team will comply with all operating and safety policies of both MSU and NSCL; and*
- (b) the Spokesperson or designee will return at the end of the experiment a checklist of tasks the experimental group is responsible for performing. The form and the checklist are available from the Manager for User Relations. In-house Spokespersons should sign the form any time prior to the start of the beam time, and outside Spokespersons should sign it upon arrival at NSCL.*

Please note: The NSCL complies with University and US Federal export control regulations. Results of experiments at NSCL are expected to be published in peer reviewed journals. If any aspect of your experiment is restricted, involves confidentiality agreements or is classified, please contact the Manager for User Relations to determine if export control regulations might apply. The Manager for User Relations must be informed if you intend to ship to the lab or bring export controlled items, software, or technical data subject to export control, prior to bringing these items to NSCL/FRIB. Export controlled software or technical data must not be stored on cloud sites. Visitors are prohibited from giving tours of the radiation-restricted areas within NSCL/FRIB. Please review the entire FRIB/NSCL Export Compliance and Trade Sanctions Requirements for Visitors, Including Users found in Appendix 4.

Please contact the Business Support Organization Export Control Manager (export@frib.msu.edu, 517-908-7336) for questions regarding compliance and the Manager for User Relations (useroffice@nscl.msu.edu, 517-908-7219) for questions regarding your responsibilities under the NSCL/FRIB Export Control Policy.



Advancing Knowledge.
Transforming Lives.

FRIB/NSCL Code of Conduct

Users, visitors, students and employees at the FRIB Laboratory share a common interest—to contribute to society through scientific discovery. This venture is best conducted when everyone behaves in a welcoming and respectful manner. Creating a collegial, inclusive, safe and supportive environment is everyone's responsibility.

Harassment and discrimination are prohibited and the FRIB Laboratory is committed to providing an environment that is welcoming for everyone. Anyone who witnesses a breach of this code of conduct is strongly encouraged to notify a member of Laboratory management or the FRIB diversity advisory committee, or to [submit an employee & student concern using the online form](#).

The relevant MSU policies can be found at:

[MSU Anti-Discrimination Policy](#)

[MSU Policy on Relationship Violence and Sexual Misconduct](#)

Users can report harassment to the Manager for User Relations, Laboratory Management, or by calling the MSU Misconduct Hotline at 800-763-0764 (anonymous calls can be made 24 hours a day, 7 days a week). Users can also submit feedback to the FRIB User Organization Executive Committee via the website: <http://fribusers.org/comments.html>.

A. Prior to Start of Experiment

1. After an experiment has been granted beam time by the NSCL Director, it typically takes 6 months or longer before the experiment can be run. The timeline for the scheduling process is described at <http://nscl.msu.edu/users/scheduling.html>.
2. All communications from NSCL regarding the experiment will be sent to the Spokesperson for dissemination to the collaborators as he/she sees fit.
3. Once the itinerary of outside users coming to participate in the experiment is known, the Spokesperson of the experiment should notify the Manager for User Relations of the names and itineraries of the outside users, so that arrangements can be made prior to arrival. Requests to help arrange accommodation, if desired, should be made at this time.
4. The NSCL Safety Office **must** be notified 2 weeks in advance if you intend to transport any radioactive materials to or from NSCL. Please submit the form "Request to Ship Radioactive Materials To/From NSCL" posted at <http://nscl.msu.edu/users/Request%20to%20Ship%20Radioactive%20Material1.pdf>. This will allow our safety group to make the necessary arrangements.
5. A user planning a longer-term (> 1 month) visit and needing a personal NSCL computing account should inform the Manager for User Relations or a collaborating NSCL faculty member. Such account requests will be reviewed, and if approved, will have a maximum



lifetime of 60 days. If a longer period is necessary, a written request from a NSCL department head is required. (See items 8, 11, and 12 below for information on the computer account for the experiment.)

6. All non-US Persons (defined as US Citizens, US Permanent Residents, and certain refugees/asylees) will be asked to complete the Scientific User Disclosure form: http://nscl.msu.edu/users/Scientific_User_Disclosure_form.pdf at least 2 weeks in advance of arrival.

7. NSCL relies on the cooperation of its users to conduct their activities in a manner that conforms to the environment, safety, health, and security requirements of NSCL and MSU. NSCL will provide safety training of users to this end. All NSCL users are required to have a site-specific radiation safety training, with an annual refresher, prior to working in the experimental vaults. The training is given on-line, instructions are available here: <http://nscl.msu.edu/users/OutsideUserSafetyTrainingInstructions.pdf>. Please note that, as stated in the training, Outside Users are not permitted to check out radioactive sources. Please see your NSCL contact in order to check out sources. Violation of NSCL policies can result in refusal of access to NSCL facilities.

8. In the case of a global health crisis, NSCL must follow any guidelines provided by the Centers for Disease Control and Prevention (CDC) and Michigan State University regarding travel restrictions.

9. S3 vault experimenters should read the S3 vault Guidelines (see S800 Wiki page: <https://wikihost.nscl.msu.edu/S800Doc> under “Documentation S3 vault”).

10. **Laboratory Acceptable Use Policy:** Users should be aware of and read the Laboratory Acceptable Use Policy (see Appendix 6 of this document), which defines the acceptable use of the information systems and other information assets in the Laboratory.

11. **Experiment Account Information:** An experimental account will be created for you in advance of your experiment’s starting date. This happens automatically 2-4 weeks before your scheduled beam time, but it can be created earlier upon request to the Manager for User Relations (useroffice@nscl.msu.edu).

An experimental account has two separate disk subdirectories associated with it, each with its own lifetime and purpose. One is used for collecting raw event data, while the other is used as a 'home' directory, containing data acquisition programs and other experiment-related files.

- a. The account's 'home' directory, to be found under /user/expnumber, is the directory you get dropped into when you log into a UNIX/linux machine. It can also be mapped as \\daq1\expnumber from a Windows machine. When the account gets deleted, so does this filespace and anything in it. This is where your dotfiles reside that determine your operating environment, PATH, etc. There is a 1Gb quota on this filespace, so do

not put event files here! This filesystem is backed up weekly (with system checkpoint snapshots daily) by the computer group.

- b. "Event space" to spool your data during an experiment will be assigned to you shortly before your run commences, and must be relinquished within 1 week of the end of your allotted beam time. These event areas mount as /user /event?, but only on the computers in the data acquisition area. Once your experiment finishes, you are responsible for copying your data to a hard drive, either 'by hand,' or by using the Stager part of the NSCL data acquisition system. Once your copy has been made, you must delete all files in this filespace so it can be re-used by a succeeding experiment. This filespace is NEVER backed up by the computer group: be sure your copy has been verified.
 - o In order to validate your data hard drives by reading them back to a separate file area, the NSCL can provide (if requested), a large chunk of temporary file space for this purpose. Once you have confirmed that your data hard drives are indeed 'good', this area will be wiped clean. This area is NEVER backed up by the computer group. It is strongly recommended to immediately validate your hard drives after writing them! Once the event areas have been deleted, there is no copy of your data in existence except for the data tapes you have written!

When the beam time of the experiment concludes, the experimental account will be deleted within 2 weeks. It is the responsibility of the experimenter(s) to make backup copies of any data, configuration information, documents, etc. before the account is deleted. Once an account has been deleted, it cannot be recovered by the Computer Department.

As part of the closeout procedure for experimental accounts, the computer group will create a second copy of a hard drive to back up your data. You will be asked to confirm that the account's files have been properly archived, and that the NSCL's responsibility for your data has expired.

B. Upon Arrival at NSCL for Experiment

12. Details of arrival procedures and miscellaneous useful information are posted at <http://nscl.msu.edu/users/here.html>. For entry into NSCL when you first arrive, please go to the main (west) entrance of the building (closest to Chemistry). If you arrive during normal business hours, the doors will be open. If after hours, please use the phone located between the outer and inner doors to call the Operator at 77305, or you can use your cell phone to call the Cyclotron Console at (517)908-7305.

13. Parking: Users should park in the Shaw Parking ramp, in the regular employee spaces (NOT the metered or leased spaces), and obtain a parking pass from the receptionist at the front desk. If the user arrives after hours, parking is free (with no pass needed) from 6 PM – 7 AM on weekdays, and all weekend. A parking pass should be obtained, from the receptionist, the next



business day. When arriving during regular business hours, park first, then go inside to obtain the parking pass from the receptionist, and go back out to put the pass in your car.

14. It is the responsibility of the user to obtain a personal dosimeter from the receptionist during regular business hours. When receiving the dosimeter, the user will be asked to provide a birth date, and either a social security number or passport number. Please return the dosimeter to the Manager for User Relations at the completion of your visit.

15. Members of your group will need NSCL access cards to enter NSCL and work in radiation-restricted areas of the laboratory. Our guiding principle is that users receive building access soon after they arrive with cards that expire when they leave. Access cards to radiation-restricted areas are granted only to users with valid user training (see item 6 above). The Manager for User Relations is your contact for getting your access card. If a user who needs training arrives after hours or on the weekend and has a business need to access NSCL prior to resumption of business hours, (s)he will be issued a temporary restricted access card (programmed for perimeter door access to non-restricted areas) that expires 8 hrs after resumption of normal business hours; if such a user needs to enter restricted areas prior to obtaining user training, (s)he must be escorted in those areas; after the user has received the required training, the card will be re-programmed for radiation-restricted area access. Your access card will be personalized with your picture (head shot). If you send us such a picture (e.g. in .jpg format) prior to arrival, we will use it; otherwise, someone from the Building Access group will take your picture after you arrive. Your access card will be saved by NSCL for future visits. Please turn it in to the Manager for User Relations at the completion of your visit.

16. When you arrive at NSCL, computer account information for your experiment can be obtained from the Manager for User Relations. The computer account procedures are posted at <http://nscl.msu.edu/users/here.html>. Note that users may not install their own software on any of NSCL computers; but they can request NSCL staff to do so. Such requests will be reviewed and, if approved, will be implemented. Note also that the computers may be re-imaged, removing such extra software, without notification in the interval between experiments.

17. To maintain the integrity of the NSCL computing network, users should not connect their own USB drives to any Laboratory computer. A USB external hard drive will be provided to the spokesperson for the purpose of copying and taking the data to their home institution. In addition, desktop and portable computers not managed by the NSCL Computer Department may not connect to any Ethernet wall jack within NSCL. Users may connect their portable computers to switches labeled "PUBLICNET" in the Data-U's or to the MSU campus-wide wireless system that is available throughout NSCL.

18. Before the start of the beam time, experimenters must be aware of (a) the role of the **Operator in Charge**, (b) the role of the **Experimenter in Charge**, and (c) the procedures for handing over control of the beam. These three procedures are appended at the end of this document.

In particular:



- a) It is the experimenters' responsibility to inform the **Operator in Charge** whether their experiment is running or not running. "Experiment running" indicates time when data are being taken or an activity in support of taking data that was identified in the proposal is being performed. The times that the "Experiment is running" and "Experiment is not running" count towards the allocated time. Reporting the times accurately helps us give better guidance to users in future calls for proposals.
- b) It is the experimenter's responsibility to inform the **Operator in Charge** of any technical concern requiring immediate action. The **Operator in Charge** will call in support to fix the problem. Issues that do not require immediate action should be communicated to the **Beam Coordinator** or the Manager for User Relations for follow-up action.

Monitors in the Control Room and in the Data-U's display the current status of cyclotron operations, and the names of the Operations staff personnel on shift. Along with other information, you will find the name and photograph of the **Operator in Charge** and the **Beam Physicist on Call** for the current shift.

Please be aware that the **Experimenter in Charge** may be called upon at any time to make critical decisions that can affect the whole experiment. Thus it is highly desirable for the Spokesperson of the experiment to carefully select those individuals that will be the **Experimenter in Charge** during the course of the experiment and to establish a communications protocol with the **Experimenter in Charge**. The **Experimenter in Charge** will act in the absence of the Spokesperson.

19. The Spokespersons assume line management responsibility for safety in their groups. Spokespersons will assign one or more members of their group as Safety Representatives. The safety responsibilities of the Spokesperson and of the Safety Representatives are described at <http://www.nscl.msu.edu/users/safety.html>.

C. During Experiment

20. Two brief coordination meetings are held every work day at NSCL, a general meeting at 8 AM in the Lecture Hall (room 1201) and a beam coordination meeting at 1:45 PM in the Atrium. Starting two days prior to the experiment and during the experiment, the Spokesperson of the experiment or a designee should participate daily in both meetings. If the Spokesperson is not available before the experiment, the Spokesperson informs the Manager of User Relations of a designee. During running time, the **Experimenter in Charge** attends both meetings.

21. Cyclotron Operators are instructed that no one is allowed to perform potentially hazardous work while alone. On rare occasions during repairs to restore running conditions, experimenters may be requested to act as a Safety Watch during off hours. If an experimenter is unwilling or unable to act as a Safety Watch, the work will be postponed until additional staff becomes available. If an experimenter is working alone and needs to perform potentially hazardous work, he/she must contact the **Operator in Charge** before starting work.

22. Primary beam intensities quoted in the NSCL Primary Beam List (<http://nscl.msu.edu/users/beams.html>) are based on experience from operation of the Coupled Cyclotron Facility. Typically, cyclotrons will be tuned to achieve a beam intensity above the beam list value as the intensity might decrease over time. Cyclotrons will be retuned at experimenter's request or whenever it is necessary for the safe and efficient operation of the Coupled Cyclotron Facility. The total time scheduled for the experiment includes time for primary beam retuning based on operational experience. Intensity limits have been established for all beams in order to protect equipment from damage.

23. NSCL cannot guarantee the approved beam time or intensity will be provided, but staff will make every effort to do so. If additional beam time is needed to achieve the scientific goals of an experiment an extension can be requested. Extension requests should be submitted to the Manager for User Relations (useroffice@nscl.msu.edu, 517-908-7219).

D. After Experiment

24. Upon completion of the experiment (including taking calibration data), the experimenters will immediately confirm in writing that the experiment has ended by completing the "checklist for NSCL experimenters" form and giving it to the Manager for User Relations.

- a. The Spokesperson signs the form, and puts it in the mailbox of the Manager for User Relations or scans and email to useroffice@nscl.msu.edu.
- b. The experimenters will indicate on the checklist if they need more than one copy of the raw data and home directory on the external hard drive that the computer group will provide.

25. Storage

- a. The NSCL IT Systems Group will transfer the experimental home directory (/user/eNNNNN) and the experimental events directory (/mnt/events/eNNNNN) to the completed experiment "rawdata" area (/mnt/rawdata/eNNNNN). This process will be completed within three business days of receiving the form, except may be delayed for experiments with larger datasets.
- b. Upon receipt of the "checklist for NSCL experimenters" form, IT will deactivate the experiment account preventing logins. The temporary disk spaces (/user/eNNNNN, /mnt/events/eNNNNN, /mnt/daqtesting/eNNNNN) will be removed once step a) above is complete.

26. All users are reminded that all equipment must be surveyed prior to being removed from the experimental vaults, especially equipment that was directly exposed to primary or secondary beam particles.

27. Please make sure that the experimental vault and the Data-U are left in a tidy state (the presumed pre-experiment condition). S3 vault experimenters should follow the guidelines referred to in item 7 above. Outside users should allow enough time to tidy up the experimental vault before they leave; they are also responsible for removing all experimental apparatus and materials they bring in. Outside users can store limited amounts of material at NSCL in storage

boxes. An outside user group wishing to store something should inform the Manager for User Relations and then take the material to our receiving department, have them put it in a storage box, and record the number for the box. The receiving department has a database of stored boxes. Thus it will be easy to locate and retrieve the box when the item is needed again.

28. If items were checked out of e-pool for the experiment, please return them to their original locations in the e-pool room and also check them back in.

29. Your feedback at the end of the experiment will help us make NSCL a more supportive place to do research. To this end, within two weeks of the end of your beam time, please fill and submit the feedback form posted at https://msu.co1.qualtrics.com/jfe/form/SV_0HSsxxgGEPU1u0B.

30. Publications resulting from NSCL data: Users should acknowledge use of the NSCL facility when preparing a publication. We would appreciate your notifying the Manager for User Relations when a paper is submitted for publication or an advanced degree (Ph.D. or Masters) is awarded to a student, in cases where the paper or degree is based in part or whole on experimental work at NSCL.

31. There is an additional acknowledgement that users must make in their publications when the primary beam of the experiment was Ca-48, Zr-96, or Pt-198. Acknowledgement of the U.S. DOE as the provider of the isotopic material used in the research should be documented in subsequent publications and presentations. The following language is recommended: "The isotope(s) used in this research was supplied by the Isotope Program within the Office of Nuclear Physics in the Department of Energy's Office of Science."

32. The following is taken from the Lab's policy on Research Data Storage and Dissemination: The Spokesperson is responsible for complying with NSF data policies, including long-term storage of the research data and records of the data analysis, and for responding to data access requests. In addition, the Spokesperson is responsible for: (1) division of any analysis tasks among the group of scientists working on that experiment, (2) providing appropriate access to the research data as required by collaborators or by federal agency policies, (3) the expeditious analysis of the data, and (4) subsequent publication of the results.

We wish you the best of luck on your experiment!

APPENDIX 1: ROLE OF THE OPERATOR IN CHARGE

The Operator in Charge has the authority and responsibility to safely and efficiently operate the Coupled Cyclotron Facility. Decisions of the Operator prevail. Users can request review of Operator decisions through the Manager for User Relations.

1. The name and a photograph of the Operator in Charge are displayed on the data-U status monitors. Experimenters can visit or call (x 305) the Operator in the control room or page the Operator (x 143) if needed. The Operator has one of two 2-way radios with him when performing duties outside the control room (the other radio is charging). These radios can be contacted by dialing 9-2-8090, waiting for the tone, then dialing either 750019 or 750020.
2. In the event of facility equipment breakdown the Operator in Charge performs an initial assessment and coordinates the response. The Operator also routes requests from experimenters for after-hours laboratory resources to appropriate lab personnel.
3. Experimenters are not allowed to change beam attenuator settings without approval from the Operator in Charge. This approval may be granted to individual experimenters for the duration of their shift. Changing to the wrong beam attenuator can cause severe damage to the cyclotrons and to experimental equipment.
4. The Operator has the authority to take control of the beam at any time if this is required for the safe and efficient operation of the Coupled Cyclotron Facility.
5. The Operator in Charge needs to know the status of the beam at all times.
 - a. The Operator releases beam to the experiment by stopping the beam on a beam blocker and informing the experimenter that beam of a specified intensity is available for the experiment on a specified beam blocker. The Operator hands the beam control key to the Experimenter in Charge. The experimenter can then remove the beam blocker with the beam control key.
 - b. The experimenter relinquishes the beam by inserting the same beam blocker and returning the key to the Operator, who then assumes control of the beam.
6. Operators change shifts at 7 am, 3 pm, and 11 pm. During these times Operators are busy with shift-change duties. Operators will visit the experiment towards the beginning of their shift as their duties permit.
7. Operators need to take control of the beam every few hours to measure and record machine parameters and to tune up the beam. While this can often be done efficiently if experimenters make the Operator aware of any time periods where the beam is not used for the experiment, the Operator in Charge must take control of the beam and tune up whenever beam losses increase significantly.
8. The Operator in Charge keeps the experimenters aware of the cyclotron status.

APPENDIX 2: ROLE OF THE EXPERIMENTER IN CHARGE

1. An Experimenter in Charge must be identified by the Spokesperson during the period the experiment number is displayed in the data-U as current experiment. This includes the time needed to tune the beams for the experiment.
2. The Experimenter in Charge must be able to answer questions about the experiment and its status on behalf of the Spokesperson.
3. The Experimenter in Charge must keep the Operator aware of the experiment status (running or not running), breakdowns of or problems with facility hardware and functions, and vault entries.
4. The Experimenter in Charge receives beam from and hands beam to the Beam Physicist or Operator in Charge via the red User Lockout Beam Blocker button following the procedure described in Appendix 3.
5. The name of the Experimenter in Charge is displayed on the data-U status monitors. Experimenters can change the name of the Experimenter in Charge by asking the Operator (x 305) to change it at any time.
6. We suggest that the Experimenter in Charge visit the control room towards the beginning of an experimental shift.
7. Prior to entering the experimental vault the appropriate beam blocker and wall plugs must be inserted (in this order) for radiation protection. The experimenters can request that the Operator insert them. After securing the vault, the wall plug can be retracted, then the beam blocker, so that the wall plug never gets irradiated. If experimenters anticipate spending more than a few minutes in the vault, the beam should be relinquished so that the Operator can use the time to measure beam parameters.

APPENDIX 3: HANDING OVER BEAM BETWEEN OPERATORS, BEAM PHYSICISTS, AND EXPERIMENTERS

Control over the beam is handed to and from the experimenter with the beam blocker in image 3 of the A1900 inserted. Experimenters can control this beam blocker with the red User Lockout Beam Blocker insert and the green User Lockout Beam Blocker retract buttons in each Data-U.

a) Handing beam from the operator or beam physicist to the experimenter

1. Operator in Charge or Beam Physicist verifies appropriate primary beam intensity and attenuation.
2. Operator in Charge or Beam Physicist verifies that the User Lockout Beam Blocker is inserted and retracts Z001 to place beam on the User Lockout Beam Blocker.
3. Operator in Charge or Beam Physicist informs Experimenter in Charge that beam is available on the User Lockout Beam Blocker, and specifies primary beam intensity and attenuation. Operator in Charge or Beam Physicist hands beam key to Experimenter in Charge.
4. Experimenter in Charge inserts beam key into the Beam Blocker key lock and turns beam key to 'enable' position, verifies the attenuation on the display in the data-U and retracts User Lockout Beam Blocker when appropriate.

b) Handing beam from the experimenter to the operator or beam physicist

1. Experimenter inserts User Lockout Beam Blocker.
2. Experimenter inserts wall plug and viewer to protect experimental setup if key is handed back to Operator in Charge or Beam Physicist.
3. Experimenter in Charge informs Operator in Charge or Beam Physicist that the beam has been relinquished and hands key to Operator in Charge or Beam Physicist.
4. Operator in Charge or Beam Physicist inserts beam key into console key lock and turns beam key to 'enable' position.
5. If handed key, Operator in Charge inserts Z001 before tuning.

Note: The Operator in Charge and the Beam Physicists only relinquish beam to the Experimenter in Charge, whose name appears on the Data-U display. The location of the inserted beam key is shown on the Data-U displays. The time to hand-over the beam key should be kept short.

Appendix 4: FRIB/NSCL Export Compliance and Trade Sanctions Requirements for Visitors, Including Users

1 Overview

NSCL and FRIB are required to comply with University and Federal export control regulations, which regulate the Export¹, Re-export², and Deemed Export³ of controlled technologies and materials found on the Commerce Control List under the Export Administration Regulations [1] (EAR) and on the U.S. Munitions List under the International Trafficking in Arms Regulations (ITAR) [2].

2 FRIB/NSCL Export Control Approach

FRIB/NSCL has developed a comprehensive plan to ensure compliance with Export Control Regulations. The FRIB Business Support Organization is responsible for supporting NSCL and FRIB staff in responsibility to ensure their visitor's compliance with export control regulations. This document describes the steps required to ensure the compliance of visitors to FRIB and NSCL.

3 Requirements Related to Export Control for Visitors to FRIB/NSCL

At FRIB/NSCL, export control compliance is a responsibility shared by all NSCL and FRIB staff. The requirements for visitors include:

- Disclosure of limited personal information (including citizenship) for visitors who are
 - issued a computer account, or document server account (SharePoint)
 - issued access to a radiation-restricted area as defined in the MSU Radiation Safety program
 - granted beam time
 - research collaborators ○ project review committee members
 - technical workshop attendees meeting certain criteria
 - Export Compliance Access Control Plan Authorized User on an export compliance access control plan
 - persons who will “use” or have unfettered access to controlled items

¹ Actual shipment or transmission of items out of the United States

² An actual shipment or transmission of items subject to the EAR from one foreign country to another foreign country

³ Situation where a foreign person on US soil may be exposed or have access in any manner to an export controlled item, software, or information

- Visitors must inform their host if they intend to bring export controlled items, software or technical data subject to export control prior to bringing them to FRIB/NSCL
 - Export controlled items/software, or technical data related to controlled items may be made available to visitors for their use only. Sharing the item/software or controlled technical data with others contrary to U. S. Law is prohibited. The Export Administration Regulation defines technical data as "blueprints, plans, diagrams, models, formulae, tables, engineering designs and specifications, manuals and instructions written or recorded on other media or devices such as disk, tape, and read-only memories." Openly published data are excluded as "public domain," but unpublished technical data relating to export controlled items are presumptively controlled. Controlled items must be kept in a secured location accessible only to U.S. Persons or persons authorized by their citizenship
- Visitors who are Authorized Users of items controlled by an Access Control Plan will be required to take the training relevant to the terms of that access control plan, and must accept the terms prior to being granted access or "use" of that item
- Items to be shipped to any destination must follow the Materials and Handling Manual which requires disclosure of any item that is subject to export control
- Persons granted access to private Wiki page, websites, or other on-line storage locations will be required to disclose citizenship/residency before being allowed to participate; foreign national with citizenship from Group E (currently Cuba, Iran, N. Korea, Sudan and Syria) will not be authorized to view private Wiki pages (where login is required)
- Export Controlled software or technical data must not be stored on cloud sites; the Bureau of Industry and Security who administers the Export Administration Regulations, has issued a statement that controlled items stored on such sites are considered an export
- Visitors are prohibited from giving tours of the radiation-restricted areas within FRIB/NSCL
- Visitors with citizenship from a country designated by the U.S. Department of State to be in group E⁴ (currently Cuba, Iran, N. Korea, Sudan, and Syria) will not be allowed access to any radiation-restricted area of the laboratory. Limited access to certain non-radiation restricted areas can be arranged under escort by a U.S. Citizen or U.S. Permanent Resident designated as host.

⁴ Countries supporting terrorism. http://www.bis.doc.gov/index.php/forms-documents/doc_view/452supplement-no-1-to-part-740-country-groups

4 **Who to contact in case of questions:**

Visitors should contact the BSO Export Compliance Manager (export@frib.msu.edu or 517-908-7336) for questions regarding compliance and the Manager For User Relations (useroffice@nscl.msu.edu or 517-908-7219) for questions regarding their responsibilities under the NSCL/FRIB Export Control Policy.

5 **References:**

- [1] Export Administration Regulations
www.bis.doc.gov/policiesandregulations/ear/index.htm
- [2] International Trafficking in Arms Regulations (ITAR)
http://www.pmdtc.state.gov/regulations_laws/itar.html

Appendix 5: Supplemental Information for Experimenters Removing Isotopes from the Laboratory

The Laboratory obtained a new license for radioactive materials from the Nuclear Regulatory Commission in 2017 that is separate from the previous license issued to MSU. Any experimenter that plans to bring source material to the Laboratory must contact the Laboratory Radiation Safety Officer (RSO) to determine if the isotope, amount, and form are permitted to be in the Laboratory under our new license. This requires the prior exchange of license documentation between the RSO at the home institution and at the Laboratory. The NSCL/FRIB NRC license covers incidental activation of parts but only allows the production and distribution of specific quantities of specific isotopes for research and development purposes. Therefore, experimenters that produce radioactive samples that they plan to remove from the Laboratory, or whose equipment becomes radioactive after an experiment must follow the guidelines below:

- The proposed removal of any byproduct radioactive material has to be reviewed by the RSO to determine if the Laboratory is authorized to produce and distribute that material AND that the home institution is authorized to receive that material.
- Other incidentally activated parts or material must stay under the control of the Laboratory RSO until the radioactivity has decayed below NRC exempt-quantity limit for that material. At that point it can be released to the experimenter.
- Radioactive source materials that are produced at the Laboratory and shipped to other facilities can only be used for research and development activities and are not to be used for any other purposes or in other products, such as medicines, consumer goods, etc.

Appendix 6: Laboratory Acceptable Use Policy

1 Purpose

The purpose of this appendix is to define the acceptable use of the information system and other information assets of the FRIB Laboratory.

2 Scope

This document applies to both Laboratory employees and non-employees (users, contractors, short-term visitors). Michigan State University has published an MSU Acceptable Use Policy for Information Technology Resources (<https://tech.msu.edu/about/guidelines-policies/aup/>) that governs use of University information technology resources. This document supplements the MSU Acceptable Use Policy for Laboratory information technology resources. It is the responsibility of Laboratory employees and non-employees to stay informed regarding applicable acceptable use policies for information technology.

3 Acceptable Use of Information Assets

3.1 Definitions

- Information systems – includes all servers and clients, network infrastructure, system and application software, data, and other computer subsystems and components which are controlled, used, or are under the Laboratory's responsibility. The use of information systems also includes the use of all internal or external services, such as but not limited to Internet access, e-mail, FTP and SSH.
- Information assets - information systems and other information/equipment including, but not limited to paper documents, mobile phones, portable computers, data storage media.
- Information technology users – Laboratory employees and non-employees (including users) that use or access Laboratory technologies that include computers, network services, network hardware, servers, software and software services.

3.2 Acceptable Use

Laboratory information assets and access to information technology services are provided as a privilege and not a right. Information assets should be limited to the support and advancement of scientific research.

3.3 Prohibited Activities

In addition to the prohibited activities delineated in the MSU Acceptable Use Policy (<https://tech.msu.edu/about/guidelines-policies/aup/>), it is prohibited to use information assets in a manner that unnecessarily takes up capacity, weakens the performance of the information system or poses a security threat. It is also prohibited to:

- Install software on a Laboratory controlled computer without explicit permission of the Laboratory Business IT Department.
- Install or modify hardware on a Laboratory controlled computer with devices such as modems, memory cards or other devices for storing, processing or reading media
- Install hardware or services on the Laboratory network without explicit permission of the Laboratory Business IT Department

3.4 **Return of Assets upon Termination of Contract**

Upon termination of employment or visit, contract or other agreement on the basis of which various Laboratory controlled equipment is used, the user must return all such assets to the Manager for User Relations.

3.5 **Files, File Permissions and Backup Procedure**

It is the responsibility of employees and users to ensure that data and related material are properly backed up. Laboratory employees and users must ensure all new files and file-system folders on Laboratory file storage devices are given default protections that allow access to the file's nominal owner, to system administrators, and to members of the same system group(s) as the file's nominal owner.

- It is the responsibility of that owner to change these permissions if alternate permissions set are desired.
- Anyone with 'read' access to files or folders in a collaboration area may consider them to be freely viewable.

In personal file space however, this is not the case, and privacy must be respected, even if the nominal file permissions would allow you to view these files and folders. Files and directories related to collaborative work must be kept separate from personal file areas (your 'home' directory), and given permissions that allow the collaboration members appropriate access.

3.6 **Authorizations for Information System Use**

- Laboratory information technology users may only access those information system assets for which they have been explicitly authorized by the asset owner.
- Laboratory information technology users may use the information system only for purposes for which they have been authorized, i.e. for which they have been granted access rights.
- Laboratory information technology users must not take part in activities which may be used to bypass information system security controls.

3.7 **Information Technology User Account Responsibilities**

- Information technology users shall not, directly or indirectly, allow another person to use his/her access rights, i.e. username, and must not use another person's username and/or password.
- The owner of the user account is its user, who is responsible for its use, and all user-executed transactions performed through this user account.
- Group accounts can only be used for specific systems in which explicit authorization have been granted by the Laboratory Business IT Department Manager with guidance from the Laboratory Director.

3.7.1 **Protection of Shared Facilities and Equipment**

- Laboratory controlled computers have anti-virus software. When discovered, viruses will be quarantined immediately by the ant-virus software.

- Laboratory information technology users of printers, photocopiers, scanners and other shared equipment for copying are responsible for complying with the Laboratory's Professional Standards Policy.

3.8 **Internet Use**

- Internet may be accessed on Laboratory controlled devices only through the Laboratory local network or MSU wireless with appropriate infrastructure and firewall protection. Direct Internet access on Laboratory controlled devices through modems, mobile Internet (with the exception of off network laptop computers), or wireless network or other devices for direct Internet access is forbidden.
- The Business IT Department may block access to some Internet services when necessary for the protection of information assets and information system. Information technology users shall not attempt to bypass such restrictions.
- Information technology users who misuse information systems and/or information assets are responsible for all possible consequences arising from their unauthorized, illegal, unethical or immoral use of Internet services or content per the MSU Acceptable Use Policy for Information Technology Resources (<https://tech.msu.edu/about/guidelines-policies/aup/>)

3.9 **Monitoring the Use of Information and Communication Systems**

The Laboratory Business IT Department may use specialized tools for the purpose of monitoring, identifying and blocking forbidden methods of communication and filtering forbidden content that may have a negative impact on the capacity or performance of the Laboratory network and systems.