

**NATIONAL SUPERCONDUCTING CYCLOTRON LABORATORY  
MICHIGAN STATE UNIVERSITY**

Telephone: (517) 333-6301  
Internet: Gelbke@NSCL.MSU.EDU  
Fax: (517) 333-6411

Address: NSCL/CYCLOTRON LABORATORY  
Michigan State University  
East Lansing, MI 48824-1321 USA

May 17, 2001

Dr. Man-Yee Betty Tsang  
NSCL Cyclotron Laboratory  
Michigan State University  
East Lansing, MI 48824

Dear Betty:

The Program Advisory Committee (PAC 25) of the National Superconducting Cyclotron Laboratory met on May 15-16, 2001 to consider proposals for beam time at the Coupled Cyclotron Facility. Your proposal, Rare Isotope Production (No. 1036), was included in this review.

In spite of the large amount of time requested (7415 hours, compared to 4201 hours approved, including 120 hours held in reserve), the Committee recommended your full time request of 172 hours. I concur with the Committee's recommendation.

For PAC 25 experiments, the approval duration is 18 months from the beginning of the running period on July 1, 2001.

Please notify your colleagues on the proposal of this decision. The attached sheets outline your duties as spokesperson, describe the NSCL Liaison help available for your experiment, and request information needed for scheduling.

The MSU Radiation Safety Committee has reviewed your proposal for safety risk and compliance issues. All NSCL users are now required to attend a site-specific radiation safety training session, with an annual refresher session, prior to working in the experimental vaults. Please contact Reg Ronningen for scheduling a training session for any users of your collaboration who have not yet obtained site specific training or the required refresher. You should allow 1 hour for this, most conveniently during a weekday preceding your experiment. One member of your group must be designated "Safety Representative" and will be responsible for handling targets, radioactive sources and other safety issues.

We wish you the best of luck on your experiment.

Sincerely,



C. Konrad Gelbke  
Director

## Spokesperson's Duties

Experiment #: 1036  
Title: Rare Isotope Production  
Spokesperson: M. B. Tsang  
Hours Assigned: 172  
Liaison:

1. Informing collaborators: The cover letter informs you of the action taken on your proposal based on the recommendation of the PAC. Please inform your collaborators of this action by sending them a copy of the letter and this sheet.
2. Liaison with NSCL: All requests for assistance should be directed to N. Anantaraman (517-333-6337, Internet: ANANTARAMAN@NSCL.MSU.EDU), who will delegate the tasks to appropriate NSCL technical personnel. Technical assistance compatible with Lab resources will be available for mechanical, electronic and data acquisition needs during experimental setup time. It is assumed that experimenters will provide the special equipment needed for the specific experiment. However, the NSCL will provide information and design assistance to the extent that is compatible with its resources. It is especially important that the NSCL be informed at an early date if an unusually large need for assistance is anticipated.
3. Supplying information for scheduling: See the attached Questionnaire. It must be returned to N. Anantaraman, NSCL, Michigan State University, S. Shaw Lane, East Lansing, MI 48824, before your experiment can be scheduled (we normally schedule 3 months in advance).
4. Radioactive material: We **must** be notified in advance if you intend to transport radioactive or hazardous materials to or from the NSCL. If you intend to bring in, ship out, or take with you radioactive material to/from the NSCL, we must have in our files, **prior to transportation**, a copy of the receiver's NRC license or a letter from the receiver stating that the radioactive material will be accepted. See item 15 of the Questionnaire for Scheduling Experiments.
5. Training Session: All NSCL users are now required to attend a site-specific radiation safety training session, with an annual refresher session, prior to working in the experimental vaults. Please contact Reg Ronningen (517-333-6378, Internet: RONNINGEN@NSCL.MSU.EDU) for scheduling a training session for any users of your collaboration who have not yet obtained site specific training or the refresher. You should allow 1 hour for this, most convenient during a weekday preceding your experiment. One member of your group must be designated "Safety Representative" and will be responsible for handling targets, radioactive sources and other safety issues.

## QUESTIONNAIRE FOR SCHEDULING EXPERIMENTS

This form is intended to help to establish the responsibilities of the NSCL and the individual experimental groups for the conduct of experiments and to identify the needed lab resources. We normally schedule experiments three months in advance, and the filled form must be returned to N. Anantaraman (e-mail: [anantaraman@nscl.msu.edu](mailto:anantaraman@nscl.msu.edu)) before scheduling.

1. Experiment # or name of test run:

2. Name and e-mail address of spokesperson or designated representative:

3. Desired run dates:

4. Please give your best estimate of the run plan for the experiment: type, energy, and sequence of beams (primary or secondary), duration of each beam on target, desired and minimum acceptable intensities, desired beam purity (%); include calibration beams. Has your set up & take down times changed from the information given in the proposal?

5. List design and/or fabrication jobs involving NSCL personnel and indicate how far ahead of the run date you need the jobs completed. Include estimate of hours needed for each job. Also indicate any special materials needs.

(a) **Mechanical:**

(b) **Electronic:**

6. List significant pieces of equipment you plan to bring with you from your home institution for the experiment.

7. List non-standard items that need to be controlled locally (from the vault), remotely (from the Data-U or console), or both. Examples: HV power supplies, PCs, target motion.

8. Give the approximate numbers of channels of CFD's, ADC's, TDC's, and QDC's needed for your experiment. The NSCL electronics pool list is posted at [www.nscl.msu.edu/userinfo/nuclelec/](http://www.nscl.msu.edu/userinfo/nuclelec/). How many days before the experiment do you need the electronics? Also, please give rough estimate of the number of LEMO cables needed for your setup.

9. Normally, the Data Acquisition systems will be run in the experimental vaults. If this is not suitable for your experiment, how many coaxial cables would be needed between the vault and the Data-U?

10. It is the experimenter's responsibility to provide targets. Do you expect any procurement/fabrication problem?

11. If your experimental location and/or detector system will need any special considerations, please give details.

12. a) Do you plan to bring your own data acquisition system hardware?

b.i) If so, will you need IP addresses? How many? What sort of network connections are required and how many (e.g. 1 BNC, 2 10BaseT, etc.)?

b.ii) If you answered NO to (a), will you require help from NSCL staff to set up the experiment readout and analysis software?

b.iii) If you answered YES to (b.ii), please give the email address of a contact person who can describe the readout & analysis needs of the expt.

c) Number of work stations required for online analysis.

d) Rough estimate of number of tapes needed and type (8mm or DLT; default choice is DLT).

e) Rough estimate of the disk space required in Gigabytes.

f) How soon prior to the expt do you need access to the data acquisition system?

g) How long after the expt will you need access to the data acquisition system?

13. Designate the "Safety Representative" from your group, who will be responsible for handling targets, radioactive sources, and safety issues.

14. List radioactive sources to be used (isotope, required activity, whether calibrated or not), and which ones will be used from the NSCL inventory (posted at [www.nscl.msu.edu/userinfo/safety/sourceinv.pdf](http://www.nscl.msu.edu/userinfo/safety/sourceinv.pdf)).

15. Will you be transporting any radioactive or hazardous material to or from the lab? Give details (include name, address & phone number of your institution's safety rep). For radioactive materials, please fill & return the "Request to Ship" form.

**Request to Ship Radioactive Materials**  
**To/From the NSCL**

Return form to: Kristin Erickson, Radiation Safety Officer  
ORCBS  
C124 Research Complex - Engineering  
Michigan State University  
East Lansing, MI 48824-1326  
Phone: (517)355-5008 Fax: (517)353-4871  
Email: ericks30@msu.edu

Radioactive materials **must** be approved by MSU's Office of Radiation, Chemical and Biological Safety(ORCBS) before they are brought onto the campus. The approval **must be obtained prior to transportation**. The information you provide on this form will be sufficient in most instances to initiate the approval process. Unusually large quantities or especially hazardous materials may require further University review. Please contact Kristen Erickson if you have questions.

*YOU WILL BE NOTIFIED AS TO APPROVAL OR DENIAL OF YOUR REQUEST*

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If you will be shipping radioactive materials (such as sources) to NSCL:

1. Person in charge of material when at NSCL: \_\_\_\_\_
2. Dates at NSCL: \_\_\_\_\_
3. List radionuclides and activities: \_\_\_\_\_
4. List source type ( $\alpha$ ,  $\beta$ ,  $\gamma$ , or fission fragment) and configuration (give manufacturer's holder designation or, if unusual or modified, give details : \_\_\_\_\_
5. Name of your radiation safety officer: \_\_\_\_\_
6. Your RSO's address: \_\_\_\_\_
7. Your RSO's telephone number: \_\_\_\_\_

IF YOU ARE SHIPPING RADIOACTIVE MATERIALS TO NSCL THE AUTHORIZED RECEIVER IS KRISTIN ERICKSON. ADDRESS SHIPMENTS c/o Kristin Erickson, ORCBS, C124 Research Complex - Engineering, Michigan State University, East Lansing, MI 48824-1326.

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IF YOU WILL BE TAKING RADIOACTIVE MATERIALS (SUCH AS IRRADIATED TARGETS) FROM NSCL:

1. Authorized receiver: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_
2. PLEASE HAVE AUTHORIZED RECEIVER SEND A COPY OF NRC OR OTHER APPROPRIATE LICENSE, PRIOR TO YOUR EXPERIMENT, TO KRISTEN ERICKSON AT THE ORCBS ADDRESS.

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TO BE FILLED OUT BY MSU:

APPROVED/DENIED (Circle one)

\_\_\_\_\_  
NSCL Radiation Safety Officer

APPROVED/DENIED (Circle one)

\_\_\_\_\_  
ORCBS