

MEMORANDUM OF UNDERSTANDING
BETWEEN THE
UNITED STATES (US) DEPARTMENT OF ENERGY
(DOE)/NATIONAL NUCLEAR SECURITY ADMINISTRATION (NNSA)
NUCLEAR CRITICALITY SAFETY PROGRAM (NCSP) AND NAVAL REACTORS (NR)
COLLABORATION FOR CROSS SECTION MEASUREMENTS AND EVALUATIONS AT
THE RENSSELAER POLYTECHNIC INSTITUTE (RPI)
GAERTTNER LINEAR ACCELERATOR CENTER (LINAC)

Objective

The objective of this Memorandum of Understanding (MOU) is to manage the conduct of nuclear data activities at the RPI LINAC center in support of the Naval Nuclear Propulsion Program (NNPP)/Naval Reactors (NR) and the NCSP (NA-50).

Areas of Cooperation

NNPP/NR Areas of Responsibility

- Authorizes the Naval Nuclear Laboratory (NNL) to manage and execute the Nuclear Data activities conducted at the RPI LINAC Center:
 - NNL administers contracts with RPI to perform nuclear data measurements at the LINAC, including but not limited to, time-of-flight (TOF) neutron interaction measurements on samples of interest to the NNPP and NCSP, as specified in the NCSP 5-year plan, Appendix B.
 - NNL negotiates and places internal purchase orders with RPI to perform both NR and NCSP work at the RPI LINAC, with no fee to NCSP. These contracts are typically three-year duration (one year with two option years).
 - NR may agree to NNL administering additional contracts between NCSP and RPI for other work of mutual interest, on a case-by-case basis.
 - NNL manages LINAC Operations and Maintenance budgets, approved by NR and NCSP, that support the nuclear data measurement program at RPI
- Authorizes RPI through contractual means to execute work in support of NNPP and NCSP tasks
- Shares funding of the total LINAC operations and maintenance costs with NCSP at a pre-determined fraction that will be evaluated annually at the NR/NCSP Technical Program Review or NCSP Budget Execution Meeting. The agreed-upon funding cost sharing fraction is currently set at approximately 2/3 NR and 1/3 NCSP of the total contract cost.
 - Approves NNPP measurement priorities established by NNL
 - NNL coordinates measurement schedule with NCSP and RPI

- Authorizes the NNL to manage the RPI LINAC Refurbishment Project on behalf of the NNPP and NCSP:
 - NNL acts as Management & Operations Contractor (MOC) to manage the Financial Assistance Award (FAA) grant (from NR and NCSP directly to RPI) in support of refurbishment activities
 - Authorizes RPI through contractual means to execute tasks and procurements within the FAA scope of work
 - NNL administers contracts with RPI to support refurbishment activities funded by NR and NCSP
 - NNL manages LINAC refurbishment budgets, approved by NR and NCSP
 - Authorizes RPI through contractual means to execute work and procurements in support of refurbishment tasks
 - Shares funding of the total LINAC refurbishment costs with NCSP at a pre-determined fraction. The agreed-upon funding cost sharing fraction is currently set at approximately 2/3 NR and 1/3 NCSP of the government funded portion of the refurbishment costs.
- Authorizes NNL to act as liaison between NCSP and NR
 - Organizes annual (as a minimum) NR/NCSP Program Review with NNL and RPI personnel
 - Coordinates with RPI NCSP Task Manager to provide quarterly progress reports to NCSP Manager
 - Attends NCSP Technical Program Review and Budget Execution Meeting
- Supports NNL collaborations with NCSP Experimental and Evaluator personnel
 - Planning experiments
 - Sharing measurement data
 - Reducing and analyzing data
 - Performing nuclear data evaluations

NCSP Areas of Responsibility

- Funds Nuclear Data activities conducted at the RPI LINAC Center in support of the Nuclear Criticality Safety Program (NCSP):
 - Establishes NCSP measurement priorities with RPI task manager
 - Coordinates measurement schedule with NNPP and RPI
 - Shares funding of the total LINAC operations and maintenance costs with NCSP at a pre-determined fraction determined and documented as described above.
- Funds the RPI LINAC Refurbishment Project
 - Shares funding of the total LINAC refurbishment costs with NCSP at a pre-determined fraction determined and documented as described above. The agreed-upon funding cost sharing fraction is currently set at approximately 2/3 NR and 1/3 NCSP of the total contract cost.

- Funds new/improved capability investments flowing from the Strategic Plan that are NCSP priorities as documented in the NCSP Five Year Plan annual updates.
- Collaborates with NNPP Experimental and Evaluator personnel
 - Planning experiments
 - Sharing measurement data
 - Reducing and analyzing data
 - Performing nuclear data evaluations

Forms of Collaboration

- Exchange of information – results of computational simulations, experimental data, and theoretical analysis.
- The NCSP and NR will be responsible for procuring their own samples, materials, and equipment for use at RPI and no change of ownership is anticipated. If this is necessary, a specific agreement between the RPI NCSP task manager and NNL will be negotiated and agreed to by both parties.
- Exchange of scientists, engineers, and other specialists for agreed periods of time to participate in experiments, numerical simulation and analysis, theoretical developments, and other research and development activities. This exchange will not result in a change in employment but would be like an extended business trip or change of station.
- Meetings, workshops, and conferences of various forms and scope will be conducted as necessary to discuss exchange information on scientific and technological aspects of general or specific subjects and to identify additional cooperative actions that may be usefully undertaken; and
- Other specific forms of cooperation may be added by agreement of the NCSP and NR.

Management

- As needed NR and NCSP will maintain multi-year strategic plans which address strategic capabilities. The purpose of these strategic capabilities plans is to identify emerging infrastructure capabilities necessary to meet future program needs. These include but are not limited to:
 - measurement capability and technology improvements,
 - nuclear data processing and evaluation codes/techniques,
 - beam-line improvements/expansion,
 - target improvements,
 - beam enhancements,
 - new/novel reaction channels, etc.

The strategic plans will inform considerations of future NCSP and NNPP investments as program needs emerge with sufficient lead time to obtain FYNSP funding.

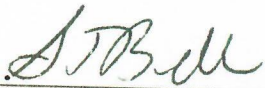
- To supervise the execution of this agreement, the NCSP and NR representatives will meet at least once per year at a location to be jointly agreed.
 - NCSP and NR points-of-contact will discuss annual and RPI LINAC measurement schedule to achieve NCSP measurement priorities per the 5-year plan.
- The NCSP and NR points-of-contact will ensure all activities and information shared under the MOU will be unclassified. The NCSP and NR shall jointly approve of any new proposals for cooperation.
- At their meetings, NR and NCSP representatives shall evaluate the status of the MOU to include a review of the past year's activities and accomplishments under this agreement, a review of activities in the following year per the NCSP 5-year plan, and any corrections or changes to the MOU needed.
- Day-to-day management of the MOU will be carried out by the NCSP management team or NCSP task managers, NR management, NNL management, and RPI LINAC personnel.

General Provisions

1. This MOU in no way restricts either of the parties from participating in any activity with other public or private agencies, organizations, or individuals.
2. The details of the level of support to be furnished one party by the other with respect to funding will be developed in specific interagency agreements or other agreements, subject to availability of funds, and no provision herein may or shall be interpreted to require obligation or payment of funds in violation of the Antideficiency Act, 31 U.S.C. §1341.
3. This MOU is strictly for internal management purposes for each of the parties. It is not legally enforceable and shall not be construed to create any legal obligation on the part of either party. This MOU shall not be construed to provide a private right or cause of action for or by any person or entity.
4. Subject to the Freedom of Information Act (5 U.S.C. 552), decisions on disclosure of information to the public regarding projects and programs referenced in this MOU shall be made consultations.
5. This MOU may be amended by written agreement of the parties. This MOU may be terminated by that mutual written agreement of the parties, or by either party upon 90 days written notice to the other party.

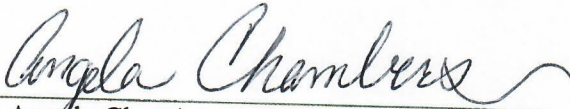
6. This MOU shall become effective on the date when the last party to sign executes the MOU and sends notice to the other party that it has done so. It shall remain in effect unless terminated earlier as provided herein.
7. Any disputes relating to this MOU will be resolved by consultation between the Parties.

Executed as a Memorandum of Understanding for the Department of Energy, National Nuclear Security Administration NA-30 Naval Reactors organization and NA-511 Nuclear Criticality Safety Program.



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15 September 2021
Date



Dr. Angela Chambers
NCSP Program Manager
NNSA NA-511

21 December 2021
Date