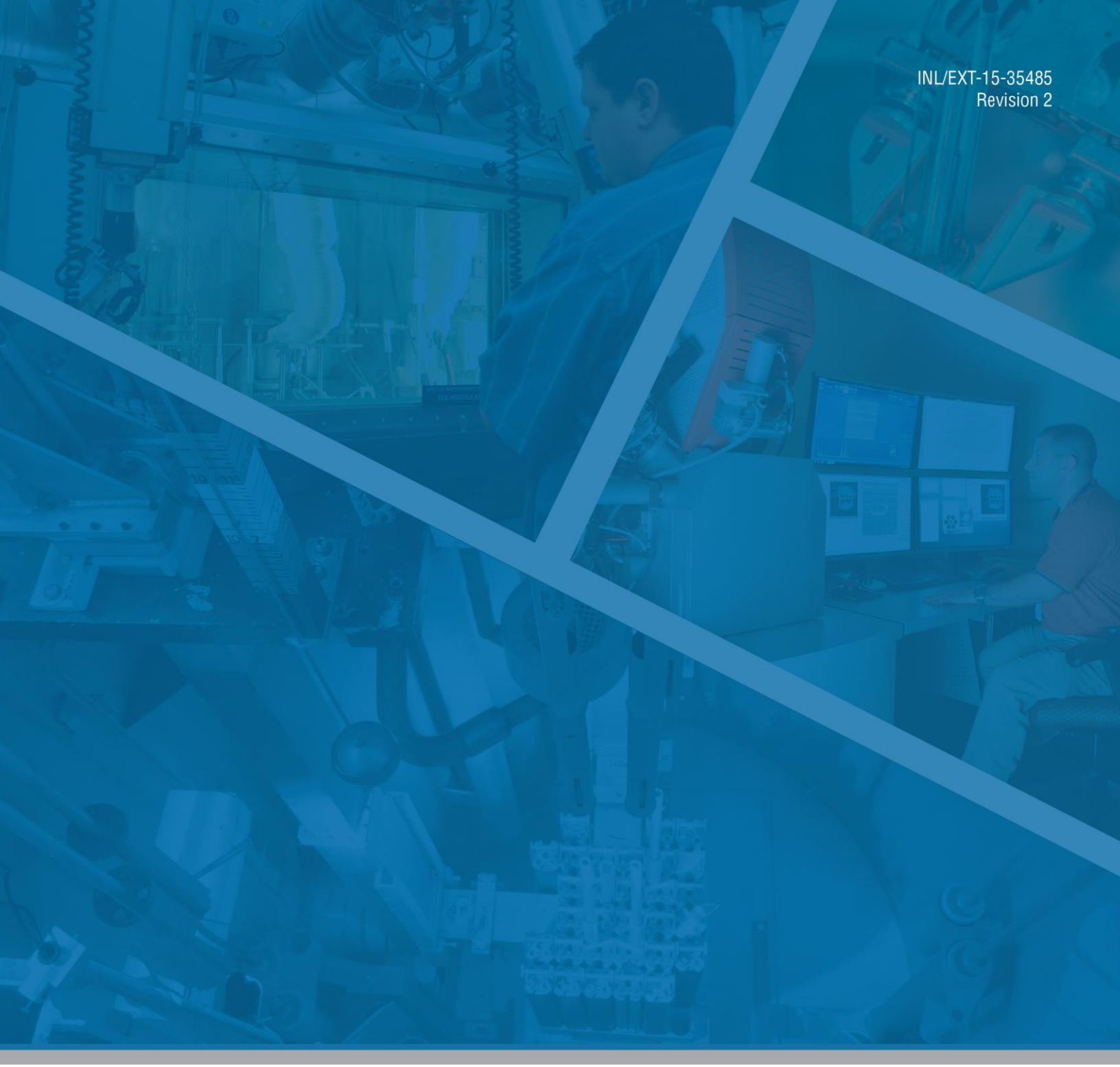

INL/EXT-15-35485
Revision 2

2015 | NUCLEAR ENERGY INFRASTRUCTURE DATABASE DESCRIPTION AND USER'S MANUAL

Brenden Heidrich

NSUF Nuclear Science User Facilities

INL/EXT-15-35485
Revision 2

Nuclear Energy Infrastructure Database Description and User's Manual

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November 2015

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Nuclear Scientific User Facilities

Nuclear Energy Infrastructure Database Description and User's Manual

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Revision 2

November 2015

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11/4/2015
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SUMMARY

In 2014, the Deputy Assistant Secretary for Science and Technology Innovation initiated the Nuclear Energy (NE)–Infrastructure Management Project by tasking the Nuclear Science User Facilities, formerly the Advanced Test Reactor National Scientific User Facility, to create a searchable and interactive database of all pertinent NE-supported and -related infrastructure. This database, known as the Nuclear Energy Infrastructure Database (NEID), is used for analyses to establish needs, redundancies, efficiencies, distributions, etc., to best understand the utility of NE's infrastructure and inform the content of infrastructure calls. The Nuclear Science User Facilities developed the database by utilizing data and policy direction from a variety of reports from the U.S. Department of Energy, the National Research Council, the International Atomic Energy Agency, and various other federal and civilian resources. The NEID currently contains data on 802 research and development instruments housed in 377 facilities at 84 institutions in the United States and abroad.

The effort to maintain and expand the database is ongoing. Detailed information on many facilities must be gathered from associated institutions and added to complete the database. The data must be validated and kept current to capture facility and instrumentation status as well as to cover new acquisitions and retirements.

This document provides a short tutorial on the navigation of the NEID web portal at NSUF-Infrastructure.INL.gov.

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ACRONYMS

CAES	Center for Advanced Energy Studies
DOE	U.S. Department of Energy
FIMS	Facility Information Management System
FY	fiscal year
GIS	geographical information system
IAEA	International Atomic Energy Agency
IM	Information Management
INL	Idaho National Laboratory
LOB	Laboratory Operations Board
NE	Nuclear Energy
NEID	Nuclear Energy Infrastructure Database
NSUF	Nuclear Science User Facilities
POC	point of contact
R&D	research and development

Nuclear Energy Infrastructure Database User's Guide

1. PURPOSE OF THE NUCLEAR ENERGY–INFRASTRUCTURE MANAGEMENT PROJECT

In 2014, the Deputy Assistant Secretary for Science and Technology Innovation initiated the Nuclear Energy (NE)–Infrastructure Management Project by tasking the Nuclear Science User Facilities (NSUF), formerly the Advanced Test Reactor National Scientific User Facility, to create a searchable and interactive database of all pertinent NE-supported and -related infrastructure. This database, known as the Nuclear Energy Infrastructure Database (NEID), is used for analyses to identify needs, redundancies, efficiencies, distributions, etc., to best understand the utility of NE's infrastructure and inform the content of infrastructure calls.

Additionally, NSUF was tasked to develop a web-based application to allow NSUF users and others to access the database. The system allows internal authorized users to enter, update, and search facilities and equipment, as well as allowing authorized users to run defined reports. One version of the online database (PRIVATE) is for internal users, such as U.S. Department of Energy (DOE), national laboratory, and other authorized personnel. Another version of the database (PUBLIC) is for users and potential users to view the inventory of NE-compatible R&D capabilities available to them through the NSUF. These are really two versions of the same database, with various levels of permissions applied to each category of information.

This directive was built on the NSUF mission of providing no-cost access to specialized facilities by:

1. Developing and maintaining the NEID at:
    a. National laboratories
    b. Universities
    c. Industrial R&D facilities
    d. International R&D facilities
2. Coordinating the NE infrastructure awards:
    a. University reactor upgrades
    b. University general scientific infrastructure
    c. Nuclear Energy Enabling Technologies Crosscutting Technology Development
    d. NSUF access awards.

2. DESCRIPTION OF THE NUCLEAR ENERGY INFRASTRUCTURE DATABASE

The NSUF developed the NEID by utilizing data and policy direction from a variety of reports from the DOE, the National Research Council, the International Atomic Energy Agency (IAEA), and various other federal and private-sector resources. This basis was built upon with specific searches of institutions' internet sites and surveys of U.S. academic institutions.

2.1 Database Structure

The capability data were compiled into a Microsoft Access™ database format, with one database for R&D facilities and another for the R&D instrumentation. Those databases have since been combined into a single Structured Query Language database, which is available for access through a web portal at NSUF-Infrastructure.INL.gov. The database development activities are being supported by the Information Management (IM) staff at Idaho National Laboratory (INL). An acceptance server version of the database is available internally at INL at neidac.INL.gov. It is intended only for the implementation of new features, usability testing, and idea development.

The NSUF and IM staff will also implement geographical mapping technologies to visualize the data in the NEID. This is designed to make the NEID easier to utilize efficiently by all user levels. Future upgrades will take full advantage of geographical information system (GIS) technologies, as well as other advanced database techniques.

2.2 Database Contents

The NEID currently contains data on 802 R&D instruments housed in 377 facilities at 84 institutions in the United States and abroad. Due to the diversity of the facilities, the amount of detailed data varies across the database. The NSUF has implemented plans to compile these data, by use of focused surveys and other tools, over the next year.

The database contents have largely been compiled manually, through personal contact and web-based searches. This is an inefficient process to maintain the database information, so the INL IM staff will be adding capability to the NEID to connect with (directly or indirectly) other federal databases such as:

1. Facility Information Management System (FIMS): real estate database
2. Sunflower: property management database tied into equipment acquisitions
3. Nuclear Science and Technology Directorate at INL Availability Database: equipment status.

Other data resources, such as the IAEA databases, may be accessed and have data retrieved manually.

Additionally, in order to maintain current information about external facilities, the NEID will be programmed to email facility points of contact (POCs) annually to prompt them to update their facility data in the NEID. POCs who represent NSUF partners and certain other authorized individuals will have the ability to write to their own institution's data files. This will reduce the administrative burden of maintaining the NEID and allow resources to be focused on adding new capabilities, increasing usability, and performing analyses on the included data.

2.3 Data and Data Sources

2.3.1 R&D Capabilities Included in the NEID

The NEID is designed to identify and document all of the major capabilities associated with NE research across the DOE complex. This has been expanded to cover similar capabilities at universities and commercial sites, primarily in the United States but also international facilities of interest.

Currently, the NEID contains data on 802 R&D instruments housed in 377 facilities at 84 institutions in the United States and abroad. There are still detailed data to be gathered about these capabilities and some additional capabilities to be discovered and added to the NEID, but the vast majority of capabilities are cataloged in the NEID. Figure 1 shows the distribution of institutional owners of the R&D capabilities. Figures 2 and 3 show the functional distribution of the facilities and instruments in the NEID.

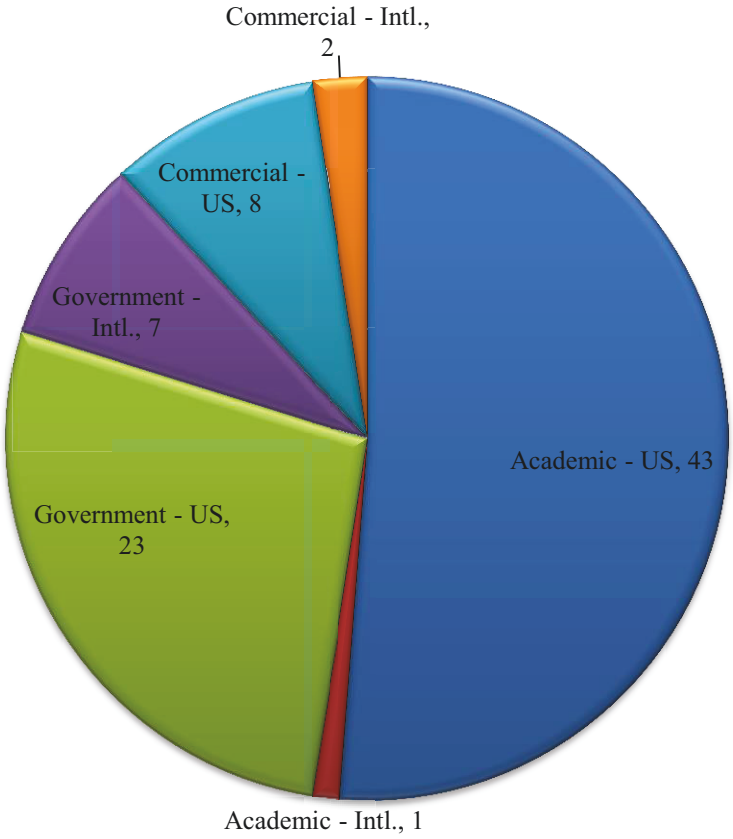

Figure 1. Institutional affiliations for the NEID capabilities (June 30, 2015).

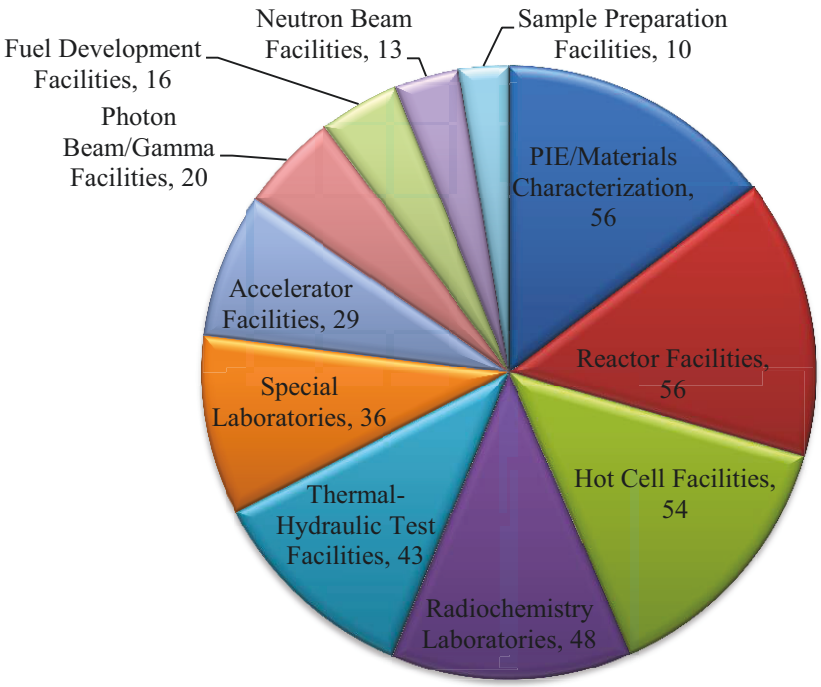

Figure 2. Functional distribution of the 377 facilities in the NEID (June 30, 2015).

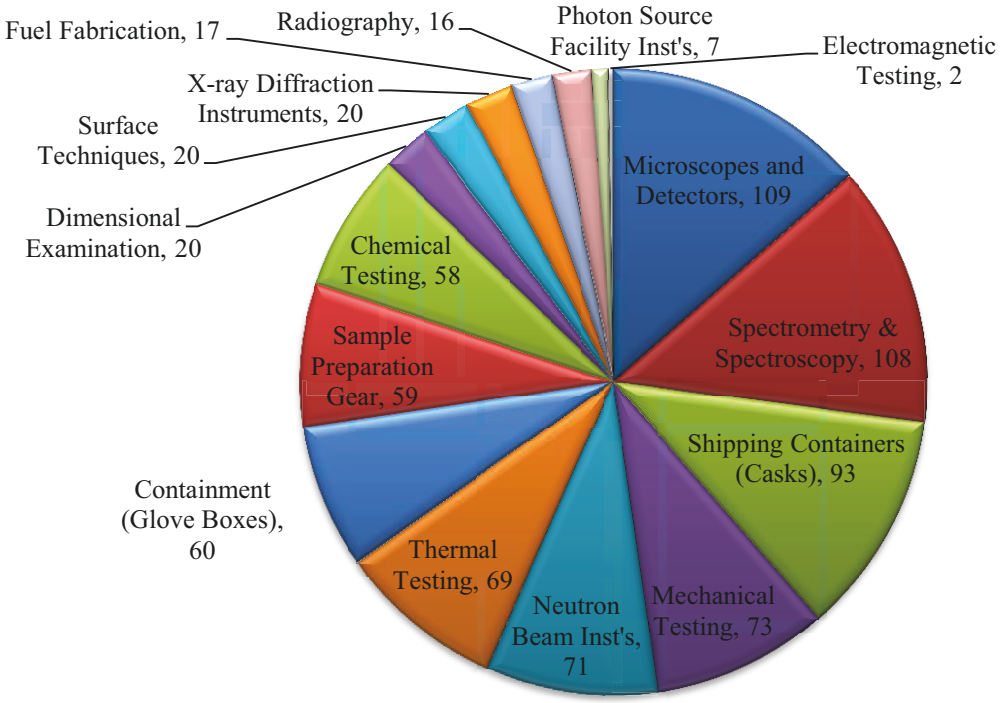

Figure 3. Functional distribution of the 802 instruments in the NEID (June 30, 2015).

2.3.2 NEID Data Maintenance Process

Following the planned upgrades in Fiscal Year (FY) 2016, the NEID will be maintained through a tiered approach. NSUF staff will work with INL IM and the various facilities to gather and input the data in an efficient manner:

1. Data for DOE-complex facilities (real estate) are currently maintained through the FIMS. That database contains information about the condition of facilities, as well as their fitness for meeting mission needs. The fields of interest are shown in Table 1. The FIMS database will be queried periodically and the data fed into the NEID.
2. Acquisition data for DOE-complex instrumentation are maintained through the Sunflower database system. The NEID will be set up to query the INL implementation of the Sunflower system. Similar systems are in use at other DOE-complex laboratories, although implementation of these systems may differ slightly from INL. The other laboratories will be queried for input periodically. Ideally, they would format their data to match the NEID format. The data translation may have to be handled by NSUF/INL. Sunflower data can be filtered by various criteria, including the initial cost of the equipment and federal supply codes.
3. NSUF partner facilities will be polled periodically for updates to their facility and instrumentation entries. This can be accomplished either manually if needed or by giving them access to the NEID so they can edit their own entries. Their participation in this effort will be part of the partner agreement between NSUF and the partnering institutions.
4. Other facilities in the NEID will be polled periodically for updates to their facility and instrumentation entries. Their participation in this effort is voluntary and will likely be less than complete.

To facilitate this effort, the addresses and telephone numbers of POCs will be added to the facility and instrumentation entries in addition to their name and email address.

Table 1. FIMS data for the NEID.

Property Name	Laboratory Operations Board (LOB) Overall Asset Condition
Property Type	LOB Condition Notes
Ownership	Core Capability – Primary
Mission Dependency	Core Capability – Secondary
Status	Core Capability – Tertiary
Hazard Category	Asset % Utilized
Elevated Security	Asset Utilization Level
Repair Needs	Utilization Notes
Deferred Maintenance	LOB Utilization Space Type % Utilized
Summary Condition	LOB Utilization Space Type Utilization Level

2.3.3 Data Sources for the NEID

More than 50 references were used in the first 6 months of the project. Twenty-five of these references provided specific capability information that was used to form the NEID. A listing of these is shown in Table 2.

Table 2. Infrastructure references for the NEID.

Reference	Date
1. IAEA Research and Test Facilities Database, Research and Test Reactor Database, and Beamline Database	≤2015
2. Facility Site (web page)	2015
3. Facility NSUF User's Guide	2014
4. Facility Fact Sheets/Annual Reports/etc.	2014
5. www.lightsources.org (web page)	2015
6. Hot Cell Strategy Report	2006
7. Alternatives to Advanced Post-Irradiation Examination Facility Report and Raw Data	2012
8. DOE Facilities Inventory Draft (June 16, 2014)	2014
9. Required Assets for an NE Applied R&D Program	2009
10. Nuclear Energy University Program, Research Reactor Infrastructure Program Annual Reports	2012–2013
11. INL Ten-Year Site Plans	2012–2014
12. DOE-Office of Science User Facilities Ten-Year Plan	2013
13. DOE-NE Infrastructure Funding Opportunity Announcement Awards	2015
14. INL Portfolio Integration and Prioritization Tool	2012
15. INL Nuclear Science and Technology Directorate Inventory System	2015
16. Nuclear Regulatory Commission Test, Research, and Training Reactor Licensing Presentation (ML14226A953)	2014
17. Nuclear Regulatory Commission Test, Research, and Training Reactor Licensing Presentation (ML12269A373)	2012
18. Nuclear Science and Engineering Education Sourcebook (American Nuclear Society/DOE)	2013–2014
19. nrc.gov (web page)	2015
20. Nuclear Regulatory Commission Compliance Certificate (radioactive materials packaging)	2015
21. Sunflower Property Management Database	2015
22. Advanced Fuel Cycle Facility Existing Facilities Data Report	2008
23. Facilities for the Future of NE Research	2009
24. INL Facility Planning Portal	2015
25. Personal/Phone/E-mail Contact	2015

2.4 Data Categories and Classification

The NEID structure is based on categories for institutions, facilities, and instruments. The facilities and instruments are sorted by capability to support different types of research. The major capabilities are shown in Table 3.

Table 3. Types of facilities and instruments in initial NEID design.

Facility Categories	Instrumentation Categories
Accelerator Facilities	Chemical Testing
Fuel Development Facilities	Containment (Gloveboxes)
Hot Cell Facilities	Dimensional Examination
Neutron Beam Facilities	Electromagnetic Testing
Photon Beam/Gamma Facilities	Fuel Fabrication
Post-irradiation Examination/Materials Characterization	Ion Beam Instruments
Radiochemistry Laboratories	Mechanical Testing
Reactor Facilities	Microscopes and Detectors
Sample Preparation Facilities	Neutron Beam Instruments
Special Laboratories	Photon Source Facility Instruments
Thermal-Hydraulic Test Facilities	Radiography
	Sample Preparation Gear
	Shipping Containers (Casks)
	Spectrometry & Spectroscopy
	Surface Techniques
	Thermal Testing
	X-ray Diffraction Instruments

Roughly 50 fields of information were gathered for both facilities and instruments. The fields were chosen to ease searching by potential users and so that each NEID entry could stand on its own. Based on Database Review Panel input and actual utilization of the NEID, the database design has been updated so that institution, facility, and instrument entries contain the information important to each one. Instruments are linked in the database to their home facility, which is linked to its home institution. Specific sets of fields are available to add specialized information about different types of facilities and instruments. The main fields for the updated NEID are shown in Table 4.

Table 4. Information fields for institutions, facilities, and instruments in the NEID.

Institution	Facility	Instrument
Institution Name	Facility Name	Instrument Name
Owner Type	Facility Abbreviation	Instrument Abbreviation
State	Institution	Home Facility
Region	Core Capability	Map Coordinates
Country	Unique Capability	Instrument Type
Map Coordinates	Primary Facility Type	Primary Capability
	Secondary Facility Type	Secondary Capability
	Tertiary Facility Type	Tertiary Capability
	Radioactive Materials Allowed	Radioactive Materials Allowed
	Hot Work Facilities	Radiological Limits
	Support Equipment	Sample Encapsulation
	Building	Atmosphere/Environment
	Map Coordinates	Core Capability
	Regulating Agency	Unique Capability
	Docket/License Number	Number of Items
	License End Date	Support Equipment
	User Facility or Contract?	Cost to Use
	User Org Web Page	Cost to Maintain
	NSUF Partner?	Cost to Replace
	Funding Sources	DOE-NE Use (%)
	Proposal Web Page	NE Missions (1,2,3,4)
	Cost to Maintain	Utilization (%)
	Cost to Replace	Commissioning Date
	DOE-NE Use (%)	Contact information
	# of Users	Email Address
	# of Staff	Contact Address
	Scheduling Web Page	Contact Telephone
	Commissioning Date	Web Site
	Recent Major Upgrade	Source(s) of Data
	Contact Information	Date of Data
	Email Address	
	Contact Address	Instrument-specific Data
	Contact Telephone	Manufacturer
	Web Site	Model
	Source(s) of Data	(This section has several
	Date of Data	different choices based on the
		type of facility or instrument.)

3. Using the Nuclear Energy Infrastructure Database

The NSUF envisions three types of NEID users:

1. **Administrators and Sub-administrators.** Editors of the database (NSUF staff) and NSUF partners who can add and update data entries but not delete them.
2. **Programmatic (Internal) Users.** Federal or laboratory staff members who will search the internal or private database for information about NE R&D capabilities either to help inform funding decisions or to support their own research goals.
3. **External Users.** Academic or commercial researchers who will search the external or public version of the database to support their own research goals.

Table 5 shows the breakdown of NEID users and their levels of access.

Table 5. NEID user roles and access.

User Type	Level	Access/Read Records	Write (Add/Edit Records)	Delete Record
Administrator	5	ALL	YES	YES
NSUF Partner (Lab.)	4	ALL	YES	NO
NSUF Partner (Uni.)	3	SOME	YES	NO
Internal User	2	ALL	NO	NO
External User	1	SOME	NO	NO
Outsider	0	Universal status prior to authorization: no access		

3.1 NEID User Registration and Login

To access the NEID, go to NSUF-Infrastructure.INL.gov. The web address can be entered directly, or the NEID can be accessed through the NSUF web page at ATRNSUF.INL.gov. The NEID web portal home page is shown in Figure 4.

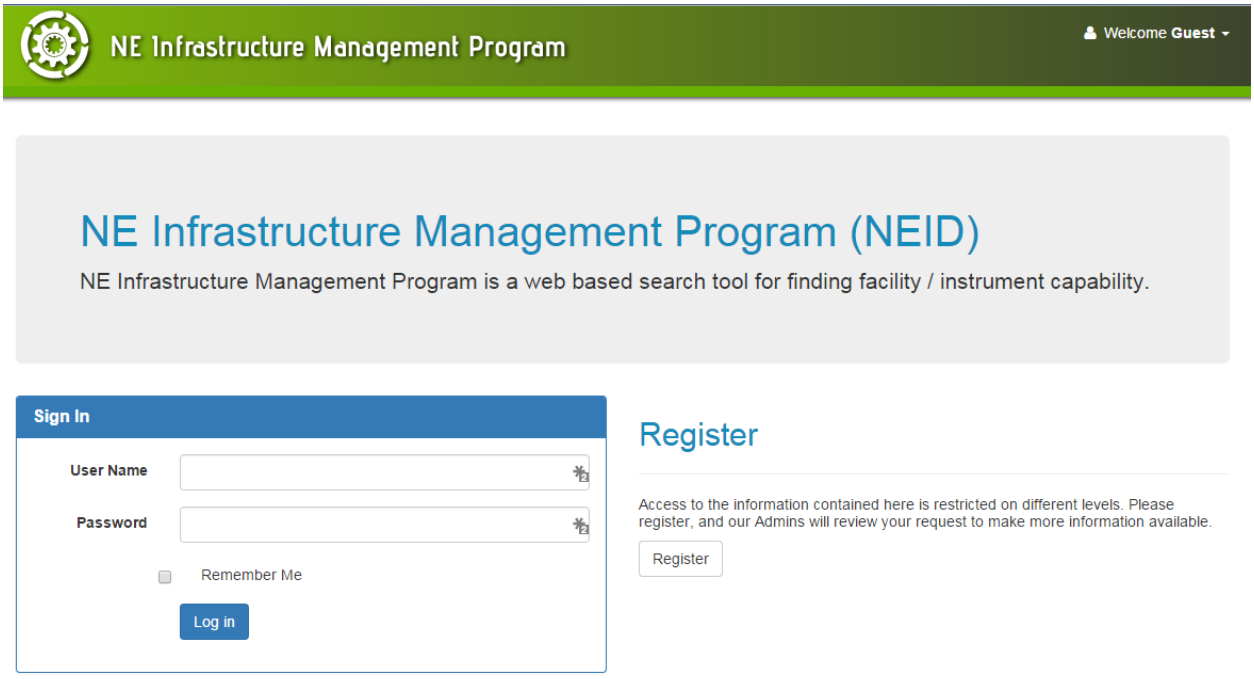

Figure 4. NEID web page at NSUF-Infrastructure.INL.gov.

If you are a new NEID user, click on the Welcome Guest link and then on Register (Figure 5). If you are a returning user, click on the Welcome Guest link and then on Log In.

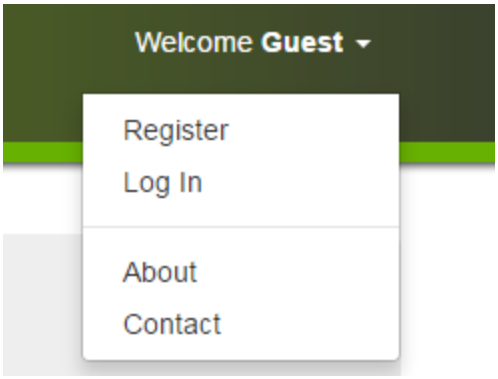

Figure 5. Registration and log-in options in the Welcome Menu.

New users will be prompted to complete the fields on the Register New User screen shown in Figure 6. Once this information is submitted, an NSUF NEID administrator will attempt to verify the new user's identity and then grant the appropriate access level.

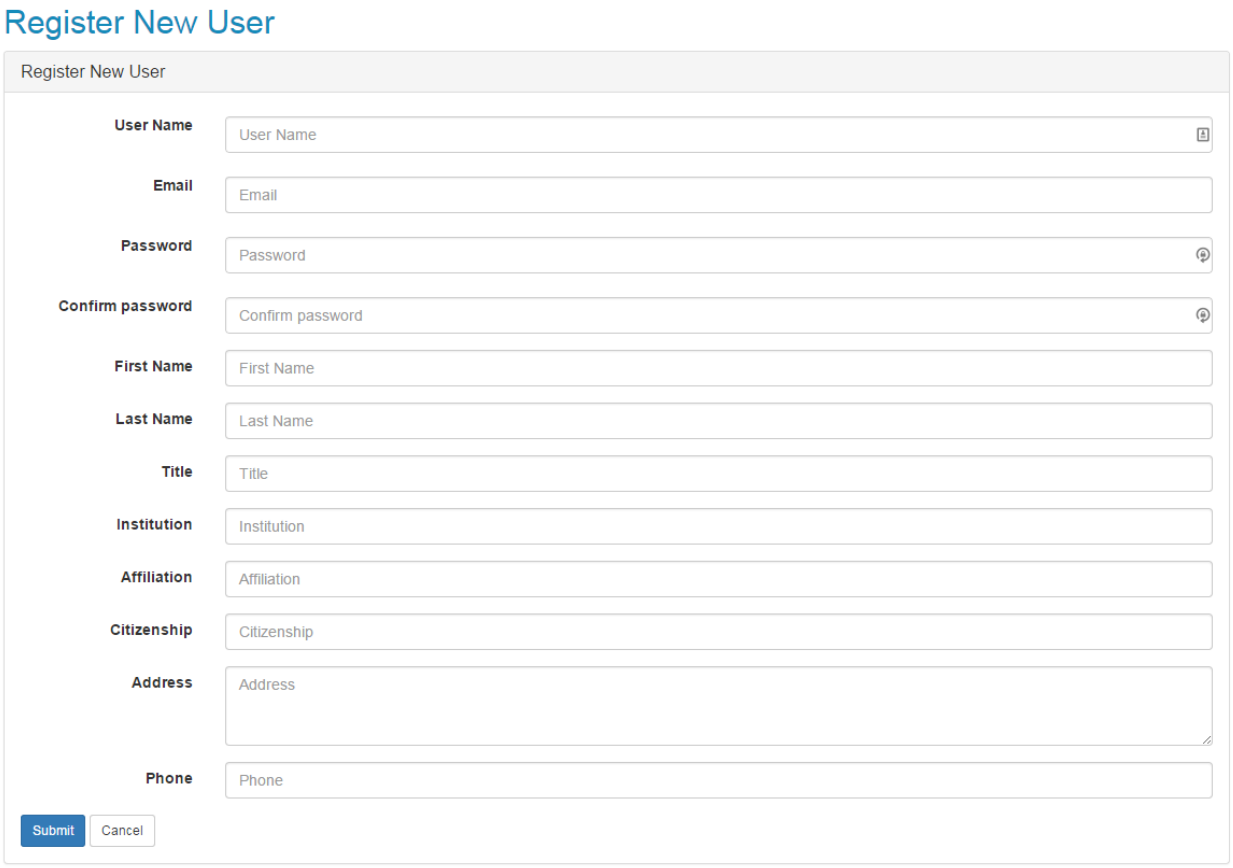

Figure 6. New user registration screen.

3.2 User Interface with the NEID

Once registered and approved by the administrator, you can log in to the NEID. The screen shown in Figure 7 will allow you to choose various options for database searches.

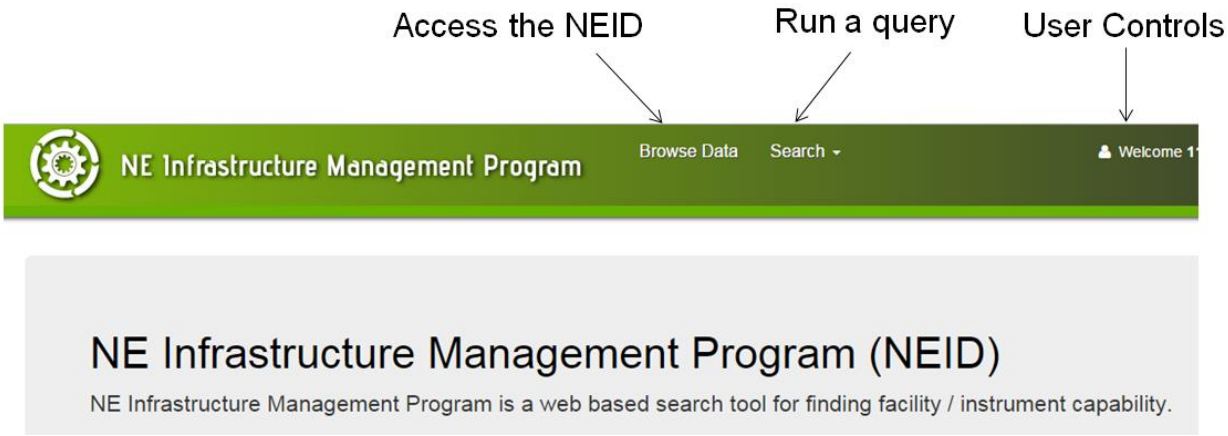

Figure 7. Authorized user view of the NEID home page with options for database searches.

Immediately after logging in to NEID, you will be reminded of the importance of maintaining the security of the system by safeguarding your access credentials (Figure 8).

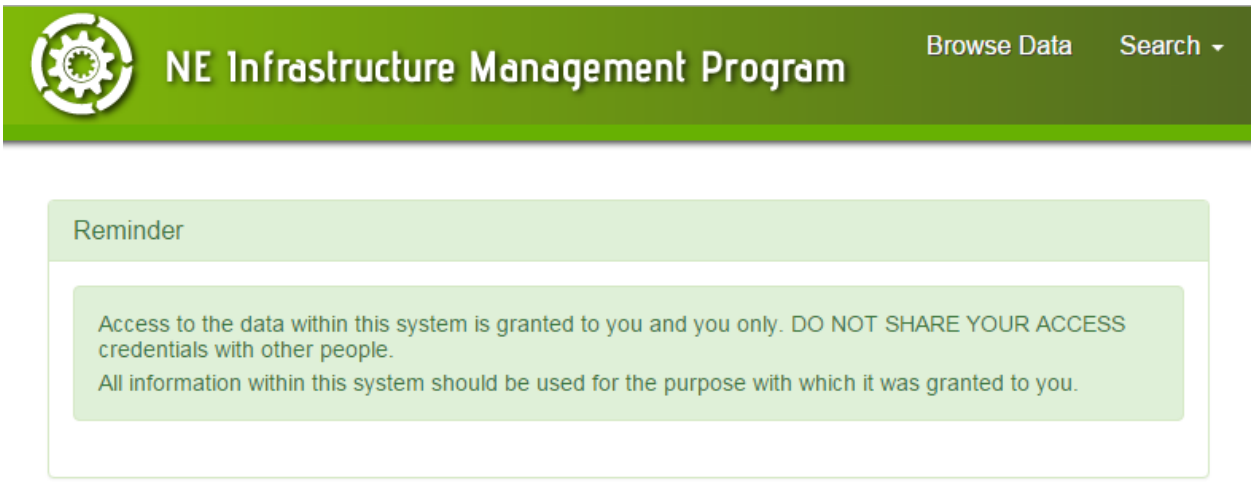

Figure 8. Reminder to users about data security.

Only limited direct queries are currently deployed in the online version of the database. You can either view the database information in a grid-type format using several filters to refine the data, or you can use the built-in search tool to find specific types of institutions, facilities, or instruments. The search tool includes a plain-text search that will find a text string in any block of text in the database.

Note that in the future, four types of searches will be implemented.

1. **Grid View Data.** Most users will likely access the NEID web page and use the grid view and the associated tools to find the information that they need. This is the simplest form of interaction.
2. **Pre-built Queries and Reports.** More advanced users will be able to access the NEID web page and then select a question or "query" from a drop-down list of pre-built choices. Figure 9 shows some examples of potential queries. A limited version of this type of query is already active on the NEID web site.
3. **Custom Queries.** The previous two types of searches are typical database searches. But more advanced users will be able to query all of the database fields in a variety of orders and combinations. For example, say a user is interested in a listing of government-owned research and test reactors with power levels above 1 MW. A custom query is the most powerful tool that would be available to this user, but it is also the most difficult to use. The expectation is that this would require training and would be limited to a small group of (likely internal) users.
4. **GIS Mapping.** This would be integrated into the three types of queries to display data visually. While this will aid interpretation of the data, it is not vital to the success of the project, so it will be implemented as the schedule and funding allow. It can be added at a later date to the existing NEID. A wide variety of GIS mapping examples are available on the internet. INL uses a system called iMap, but there are many others in the federal government. The final form of the GIS implementation for the NEID is not set.

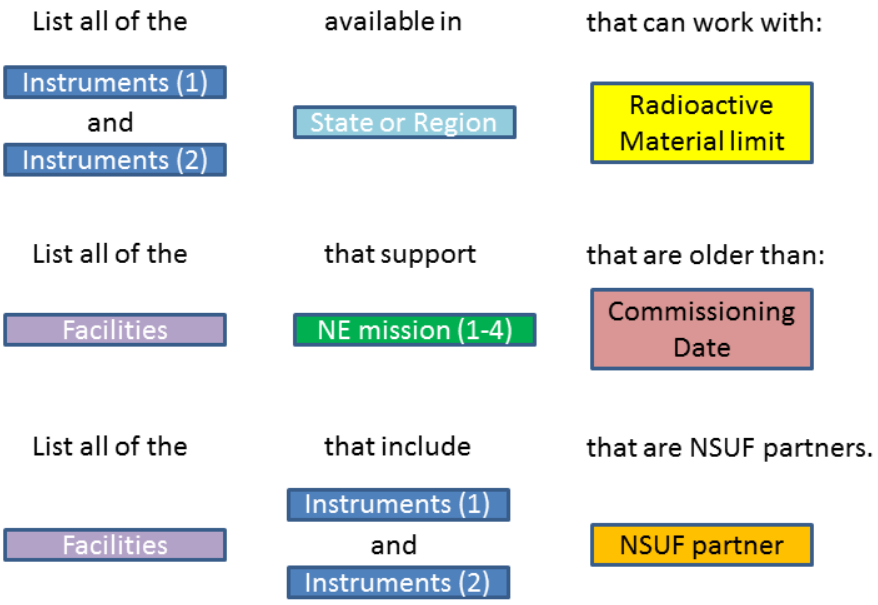

Figure 9. Examples of possible pre-built query functions.

3.3 Browsing the NEID

NEID can be browsed through the **Browse Data** tab on the home page. Selecting this option takes you to the grid view page, which displays all of the institutions in the NEID, their owners, and their locations. You can narrow the search by using the drop-down lists above the grid view (Figure 10).

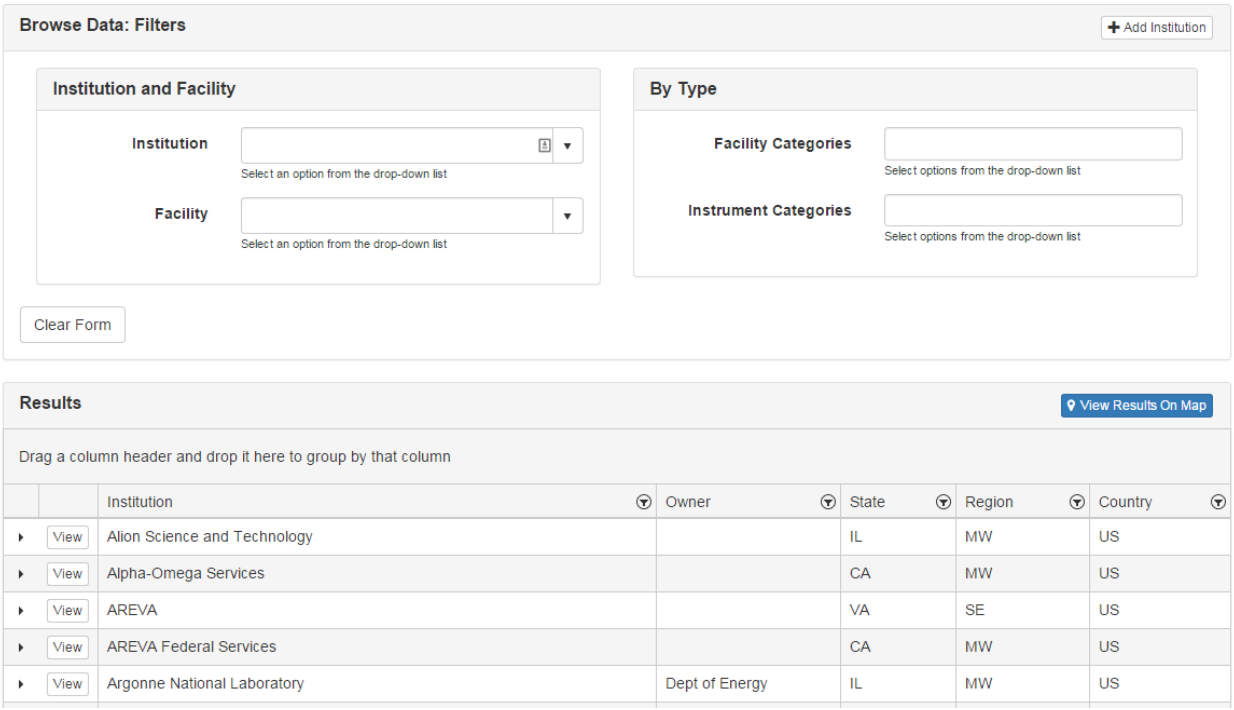

Figure 10. Data browsing functionality of the NEID grid view page.

You can also choose to display the filtered data on a map. Not all facilities currently have GPS coordinates associated with their location. However, this will be updated in FY 2016. The map view of a search is shown in Figure 11. You can see the name of an institution by hovering the mouse pointer over the map marked. You can select the institution by clicking on the marker. The database will then navigate to the institution's page. Local maps are available at the institution and facility level.

Figure 11. Map view of NEID institutions.

The grid view can be further narrowed by using the filters at the top of the columns. The data can be sorted by column as well. The grid view is shown in Figure 12. If desired, drag one of the column headers to the top of the grid to re-sort the data by owner, state, region, or country. Clicking on **View** brings up the institution's page, which lists the facilities owned by that institution as well as a map view of the institution. Figure 13 shows the grid view following a drop-down search for Instrument Type: microscope. In such a search, the grid reconfigures to show institutions that own facilities with microscopes and then links to the instrument pages.

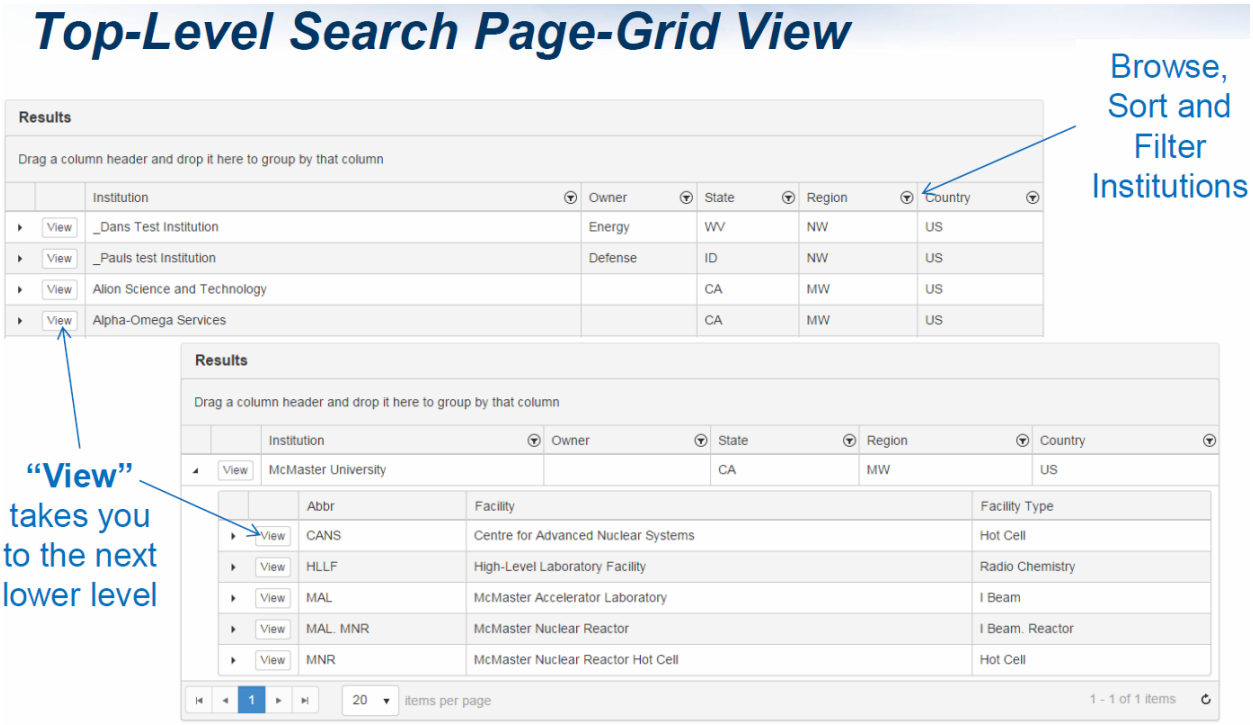

Figure 12. NEID grid view of database search page.

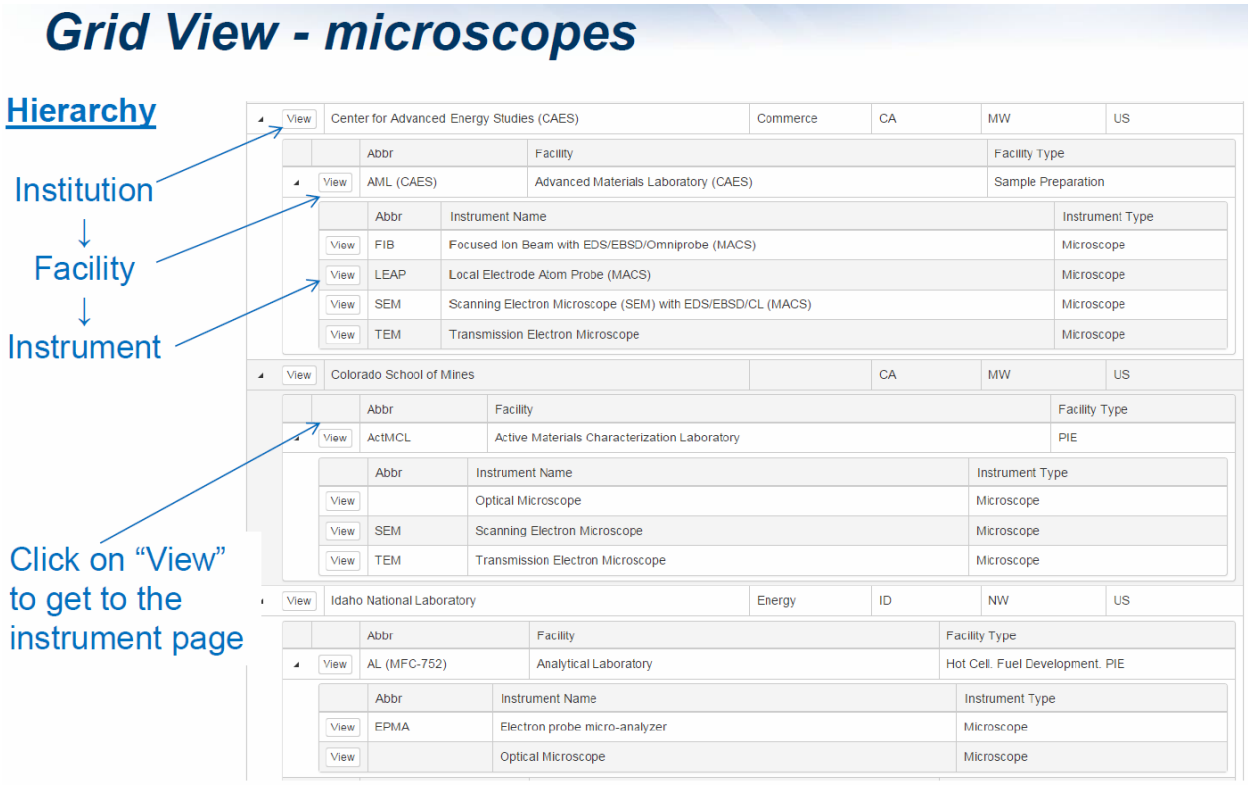

Figure 13. NEID grid view of microscope search data.

Beyond this view, you can access the institution, facility, or instrument web pages. For example, in the microscope search data shown in Figure 13, the user can click on the **View** button for the Center for Advanced Energy Studies (CAES) and navigate to the CAES institution page. This page has the particular institution data, an interactive map view of the location, and the facilities owned by that institution, as shown in Figure 14.

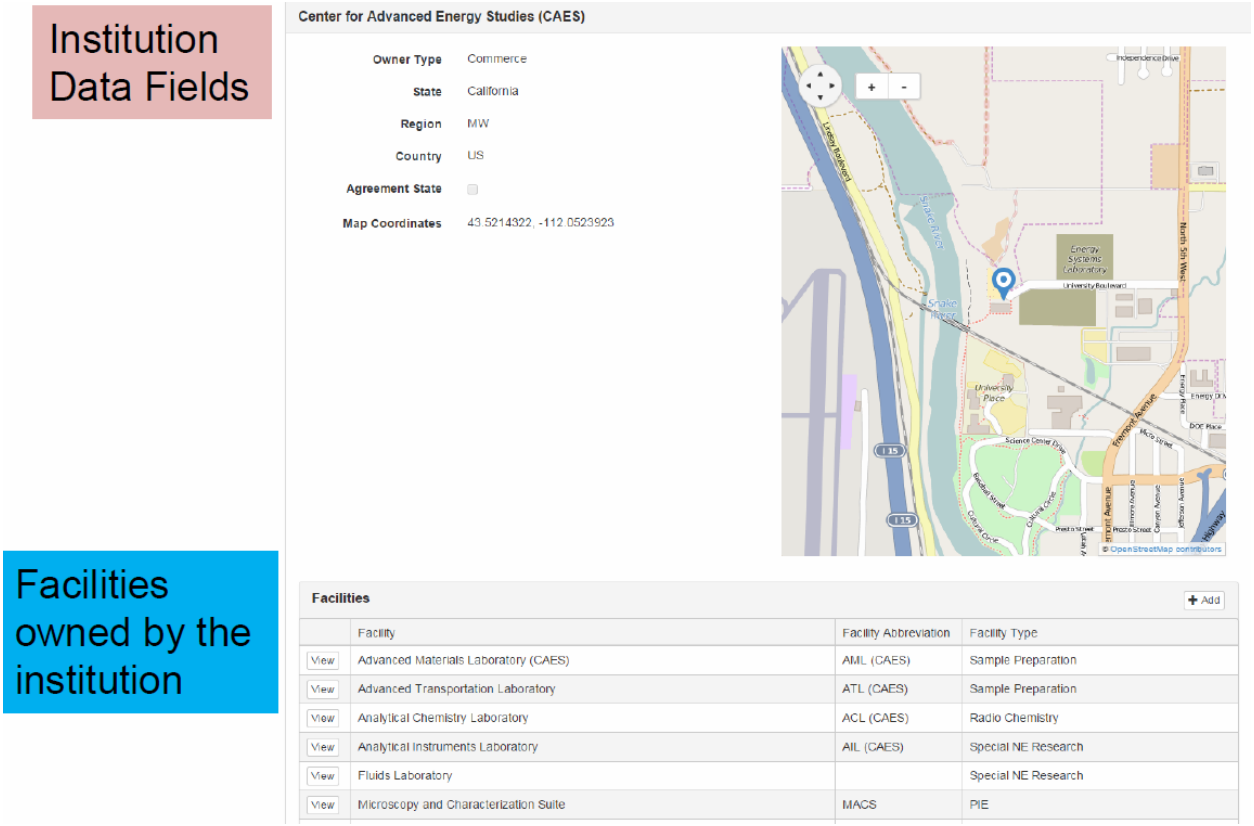

Figure 14. CAES institution NEID web page.

Navigating further downward, you can chose to investigate a particular facility. In this example, the user can click on the **View** button for the Advanced Materials Laboratory in CAES. This will change the view to the facility information page, as shown in Figure 15.

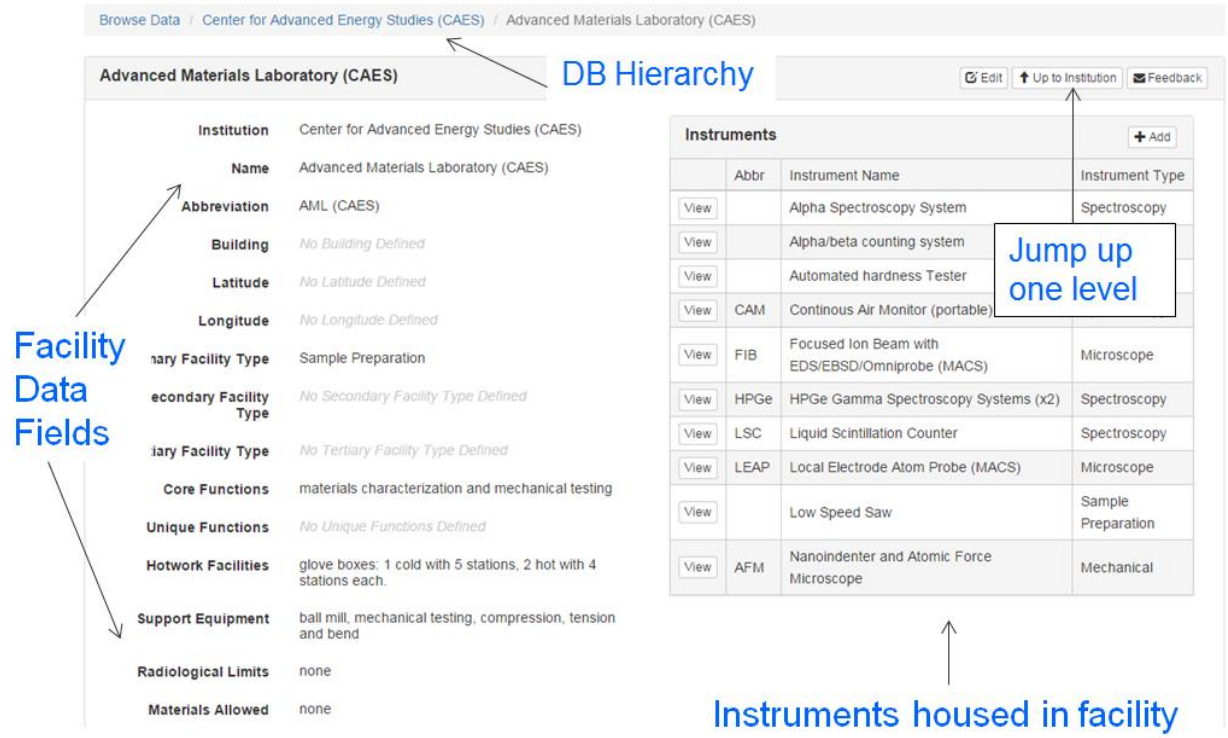

Figure 15. Advanced Materials Laboratory facility NEID web page.

Note that you can see the data fields associated with the facility, as well as the instruments housed in that facility. You can navigate upward to the institution page by clicking on the **CAES** link in the top left portion of the screen, in the database hierarchy listing, or on the **Up to Institution** button in the upper right portion of the screen. You can also navigate downward to the instrument level by clicking on one of the **View** buttons to the left of the instrument name. In our example, the user chose to navigate to the Focused Ion Beam microscope page, shown in Figure 16.

The same navigation options are available from this page. Completing the detailed data in the instrumentation pages is a primary goal of the NSUF for FY 2016. The NSUF is working with its partners to facilitate the acquisition of high-quality data for the NEID.

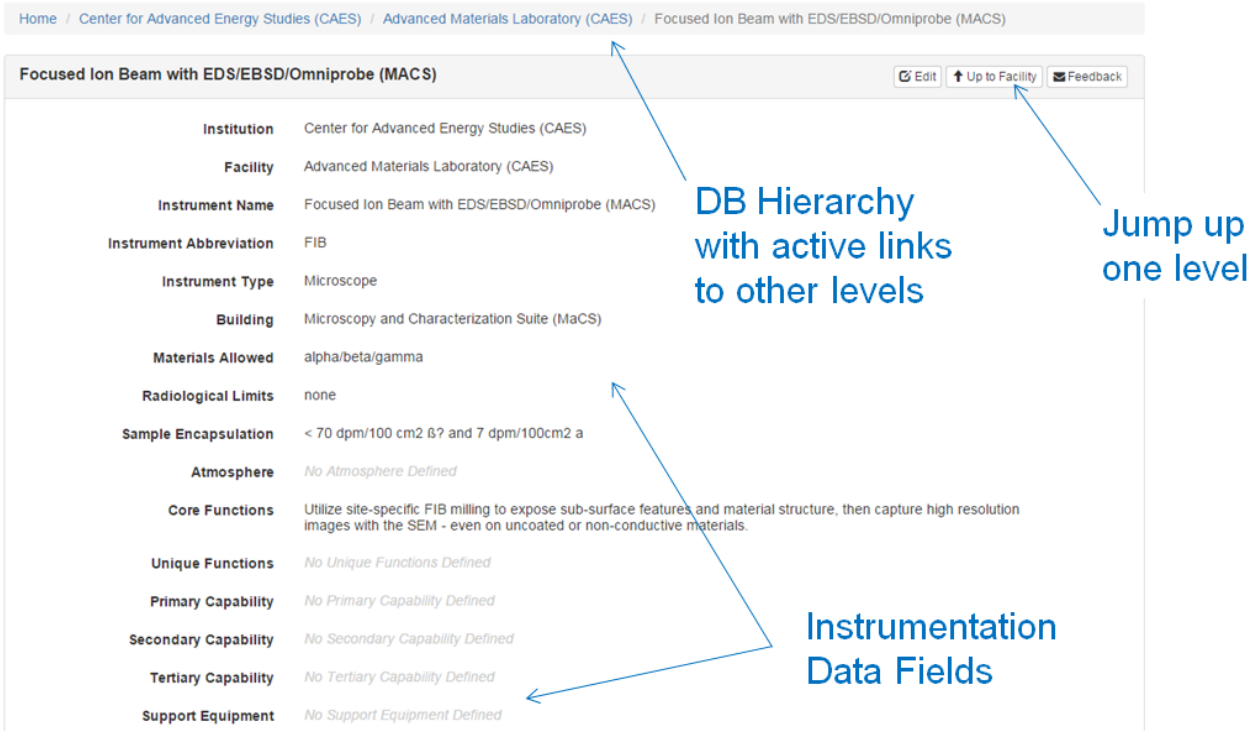

Figure 16. Focused ion beam microscope web page.

3.4 NEID Queries

The current web portal has several querying capabilities. These are accessed by clicking the **Search** button at the top of the page as shown in Figure 17. This produces a drop-down menu for querying institutions, facilities, or instruments directly or for performing a plain text search.

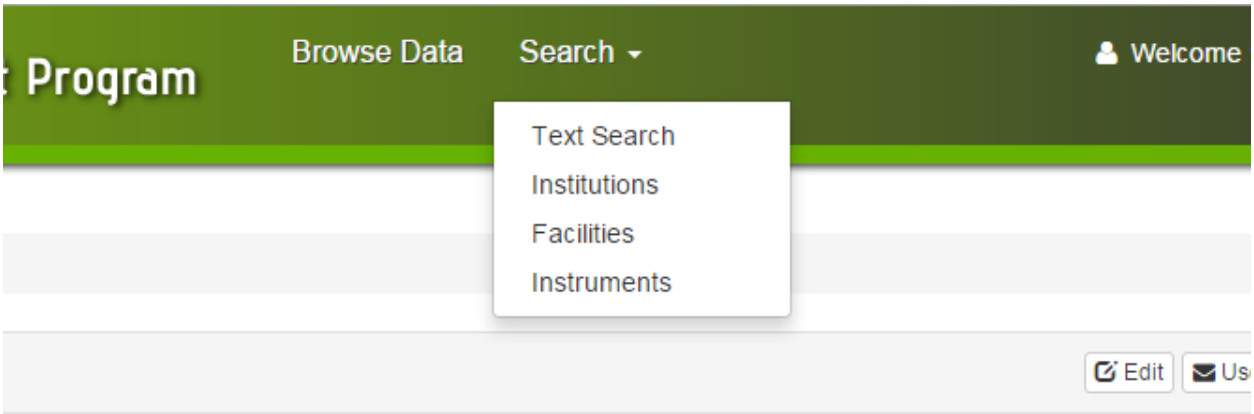

Figure 17. Options for conducting infrastructure database queries.

Figure 18 shows the direct search options. Clicking in one of the boxes on the search page brings up a list of further options. You can also start typing in these fields, and the software will autocomplete one of the options for you. If you type in something that is not an approved database option, the search will return all of the database institutions, facilities, or instruments.

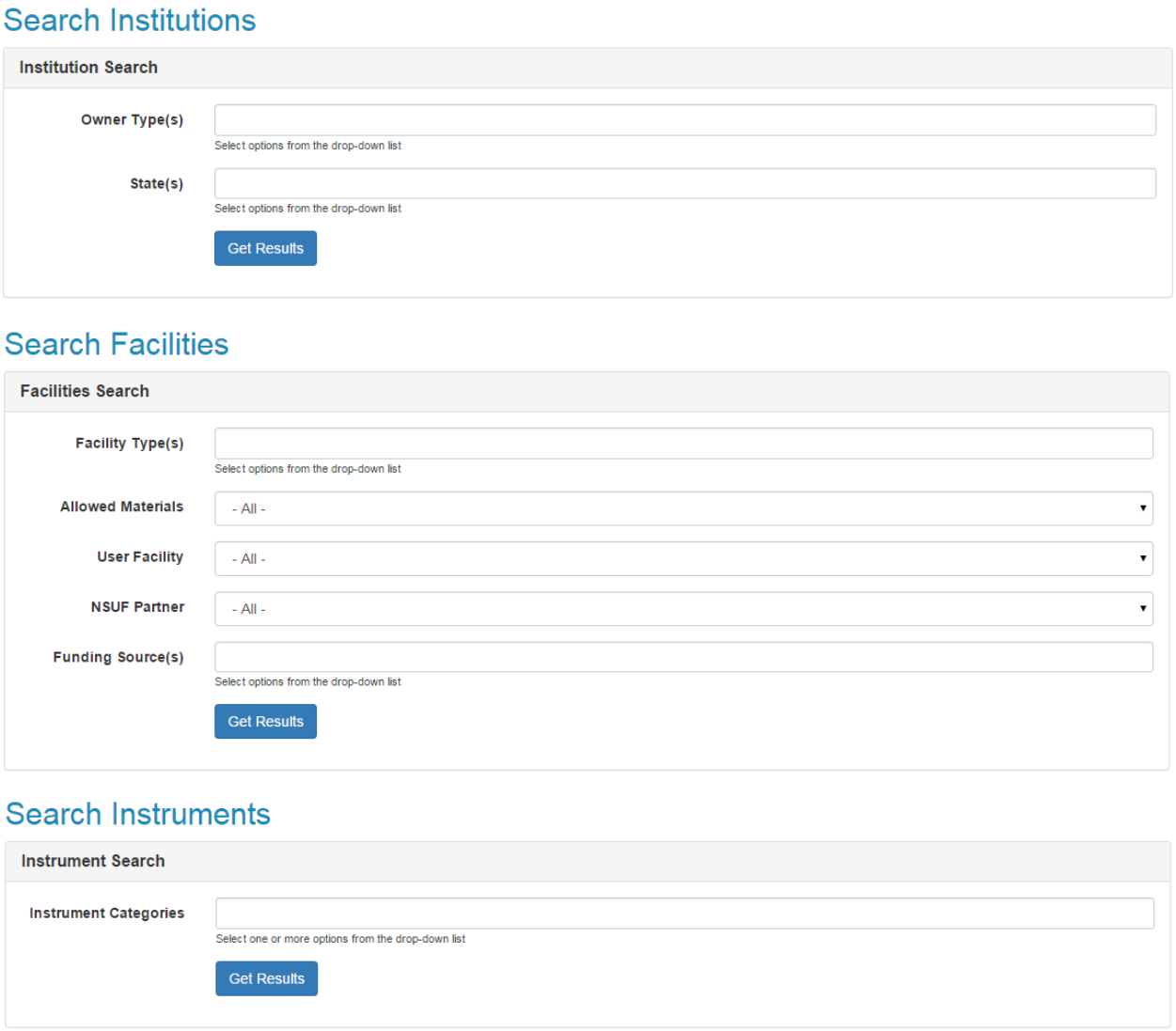

Figure 18. NEID search pages reached using the home page **Search** function.

As a simple example, the user has chosen to query the database for a list of all NSUF partner facilities. This is done by clicking on the Search option from the home page and then selecting Facilities. This takes the user to the Search Facilities page, as shown in the middle of Figure 18. For this example search, the user wants to know which hot cell facilities are also NSUF partners.

To find this information, the user clicks in the Facility Type(s) block shown in Figure 18, selects Hot Cells, moves to the NSUF block, and selects option YES. Finally, the user clicks on Get Results. The resulting page is shown in Figure 19.

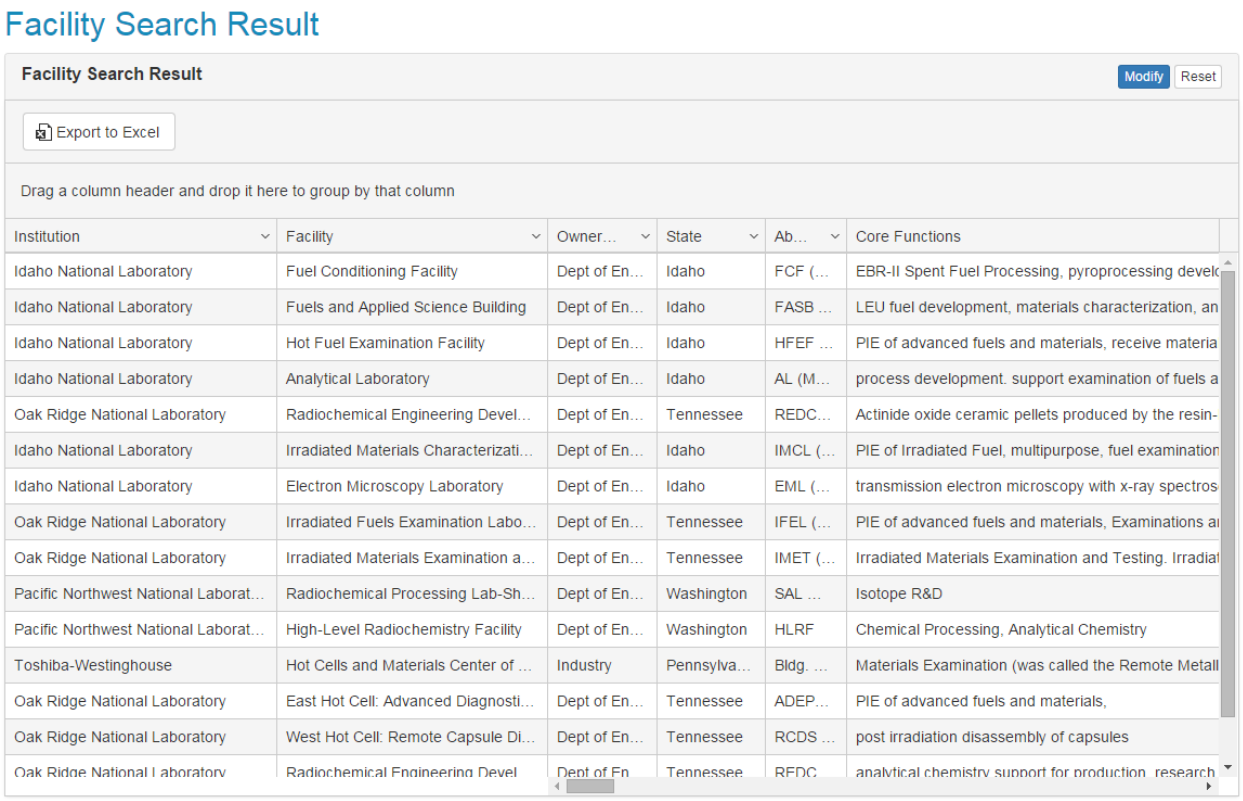

Figure 19. Query results for facilities that are NSUF partners.

The data in these columns can be sorted and filtered prior to export. Only a few columns of data are shown on the screen at one time. The rest of the data can be accessed using the scroll bars at the bottom and side of the screen. Data columns can be added or removed prior to export by clicking on the ‘v’ to the right side of the column heading. This brings up the column options menu shown in Figure 20.

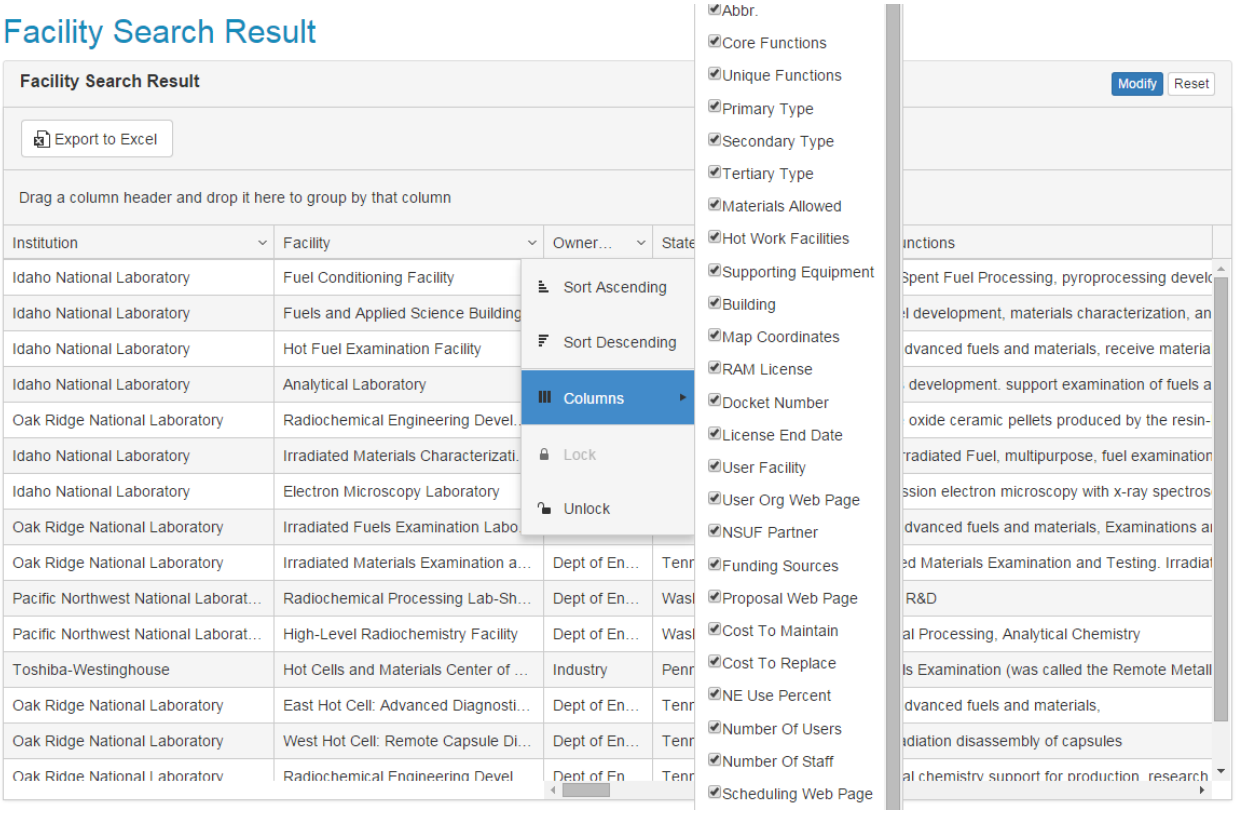

Figure 20. Sorting and filtering data in the Facility Search Result window.

The data can also be sorted by pulling column headers up above the header row, similar to the Browse Data grid functionality. This is illustrated in Figure 21, which shows the NSUF hot cell data further sorted by owner type and state.

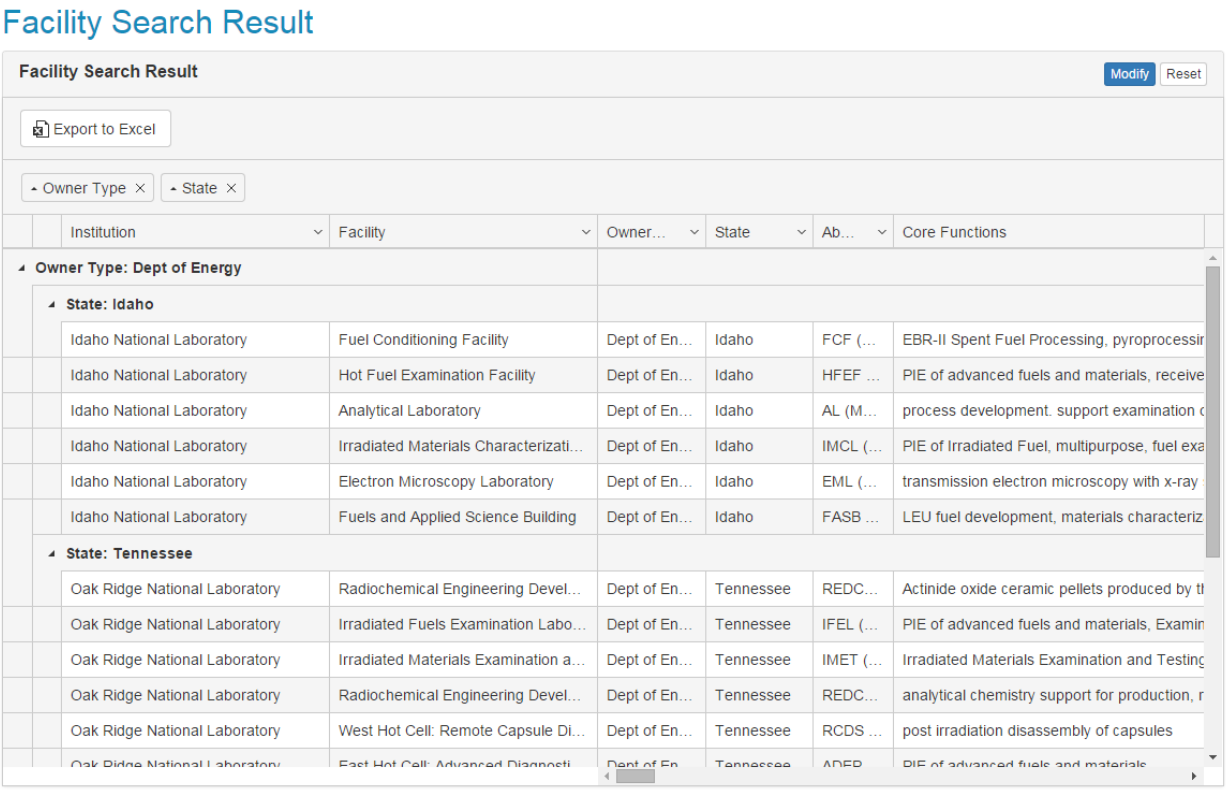

Figure 21. Sorted query result for hot cell facilities that are NSUF partners.

These data can be viewed as-is or, with the appropriate access level, exported to Microsoft Excel 2007+ format. The query can also be modified using the **Modify** button in the upper right portion of the screen. Figure 22 shows the data following an export to Microsoft Excel. The spreadsheet is set up similarly to the database, with filters in place for each column of data.

	A	B	C	D	E	F	G	
1			Institution	Facility	Owner Type	State	Abbr.	C
2	Owner Type: Dept of Energy							
3		State: Idaho						
4			Idaho National Laboratory	Fuel Conditioning Facility	Dept of Energy	Idaho	FCF (MFC-7(	El
5			Idaho National Laboratory	Hot Fuel Examination Facility	Dept of Energy	Idaho	HFEF (MFC-	P
6			Idaho National Laboratory	Analytical Laboratory	Dept of Energy	Idaho	AL (MFC-75	p
7			Idaho National Laboratory	Irradiated Materials Characterization Lab	Dept of Energy	Idaho	IMCL (MFC-	P
8			Idaho National Laboratory	Electron Microscopy Laboratory	Dept of Energy	Idaho	EML (MFC-7	tr
9			Idaho National Laboratory	Fuels and Applied Science Building	Dept of Energy	Idaho	FASB (MFC-	LI
10		State: Tennessee						
11			Oak Ridge National Laboratory	Radiochemical Engineering Developmer	Dept of Energy	Tennessee	REDC-1(Bldg	A
12			Oak Ridge National Laboratory	Irradiated Fuels Examination Laboratory	Dept of Energy	Tennessee	IFEL (Bldg. 3	P
13			Oak Ridge National Laboratory	Irradiated Materials Examination and Te	Dept of Energy	Tennessee	IMET (Bldg.	Ir
14			Oak Ridge National Laboratory	Radiochemical Engineering Developmer	Dept of Energy	Tennessee	REDC-1(Bldg	ai
15			Oak Ridge National Laboratory	West Hot Cell: Remote Capsule Disasser	Dept of Energy	Tennessee	RCDS in IFEL	p
16			Oak Ridge National Laboratory	East Hot Cell: Advanced Diagnostics and	Dept of Energy	Tennessee	ADEPT (IFEL	P
17		State: Washington						
18			Pacific Northwest National Laboratory	High-Level Radiochemistry Facility	Dept of Energy	Washington	HLRF	C
19			Pacific Northwest National Laboratory	Radiochemical Processing Lab-Shielded	Dept of Energy	Washington	SAL @ RPL (	Is
20	Owner Type: Industry							
21		State: Pennsylvania						
22			Toshiba-Westinghouse	Hot Cells and Materials Center of Excelle	Industry	Pennsylvania	Bldg. 302, Cl	M
23	Owner Type: University							
24		State: Massachusetts						
25			Massachusetts Institute of Technology	Massachusetts Institute of Technology R	University	Massachusetts	MITR. MITR	co

Figure 22. Sorted query result for hot cell facilities, exported to Microsoft Excel.

4. User Feedback

The Infrastructure Management Program and the NEID are continuous process-improvement programs and will be continually updated, expanded, and improved. You can supply feedback to the administrator through the contact link in the user menu or directly from most pages by clicking on the **Feedback** button. Please be as precise as possible when supplying feedback.

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