INL

Supplier Engagement Webinar Series

November 11 • 9 a.m. MT

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November 11, 2020

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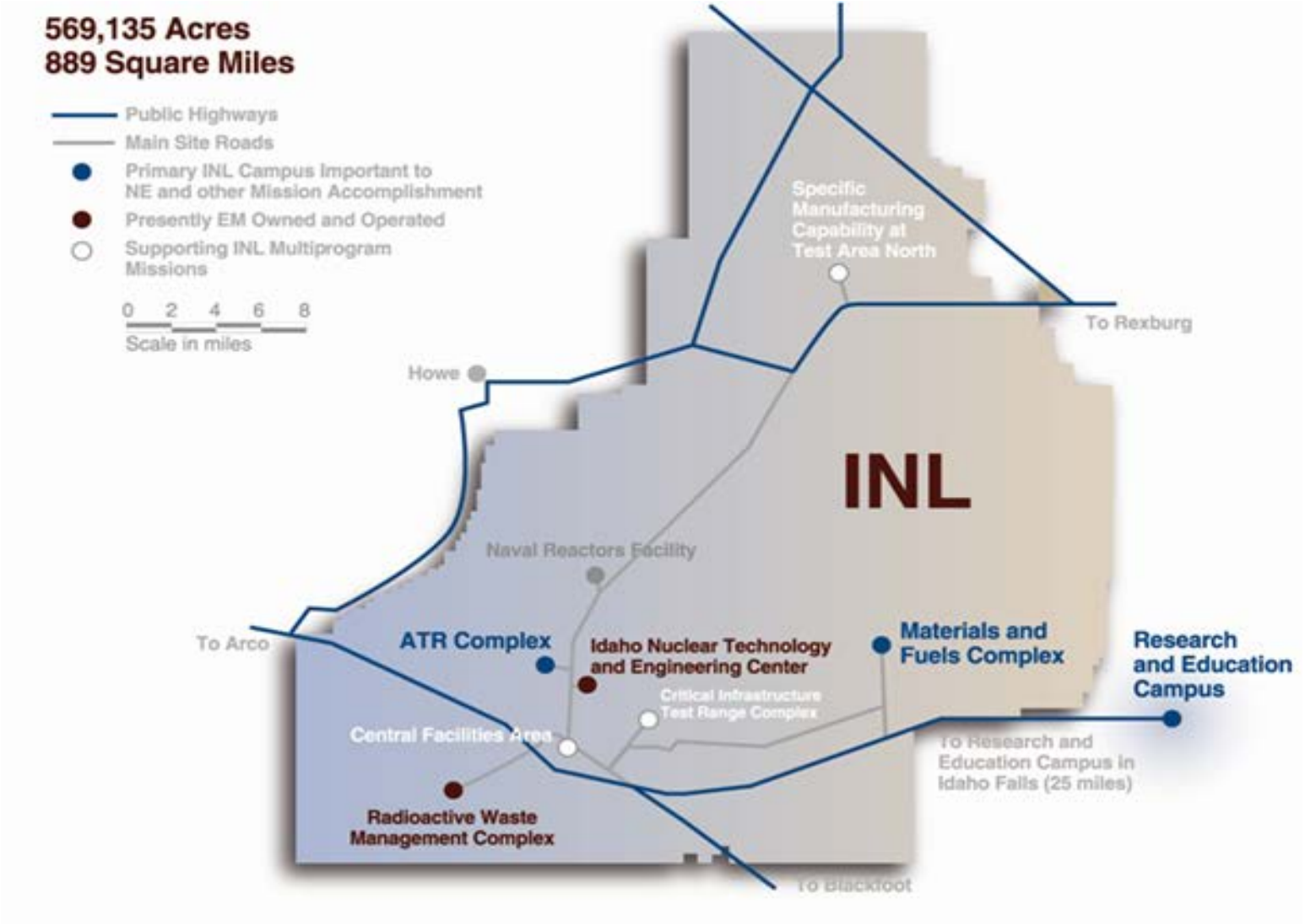
Supplier Engagement Webinar Series #6

INL Fabrication & Machining Needs

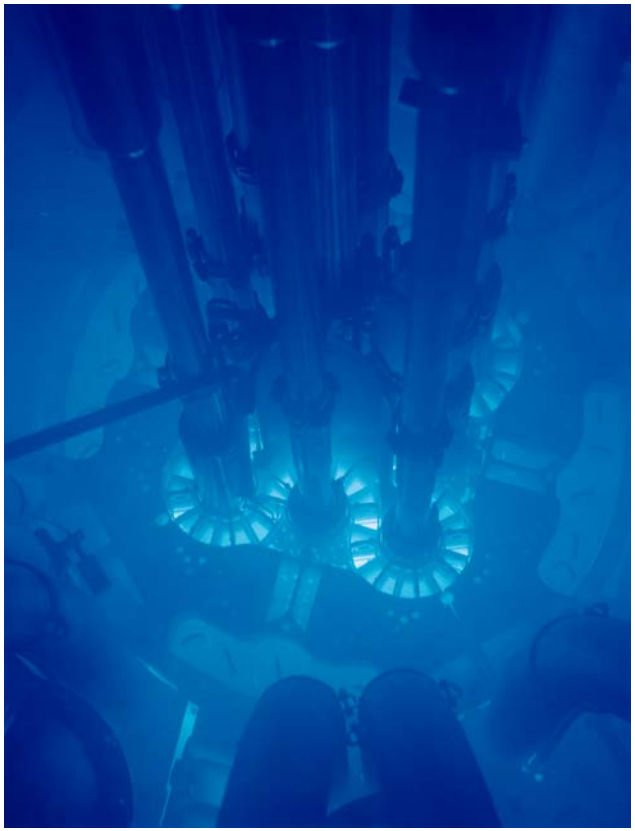
Idaho National Laboratory

Idaho National Laboratory



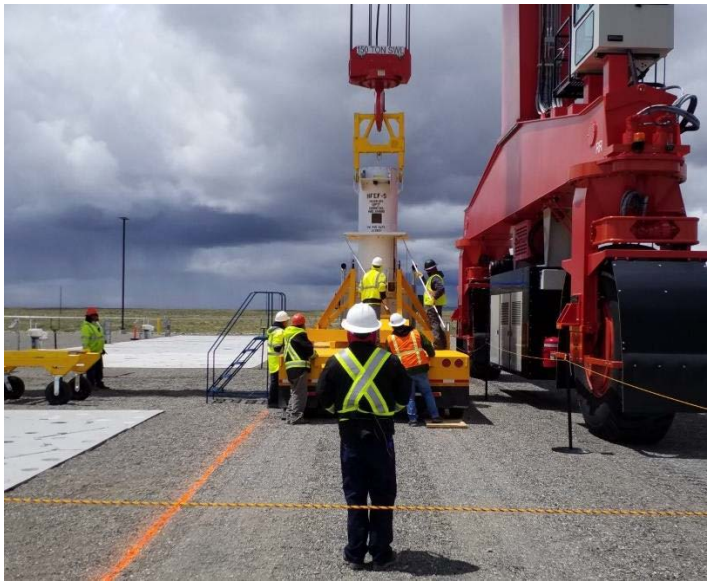
Advanced Test Reactor

- Advanced Test Reactor
  - 3 Nuclear Facilities



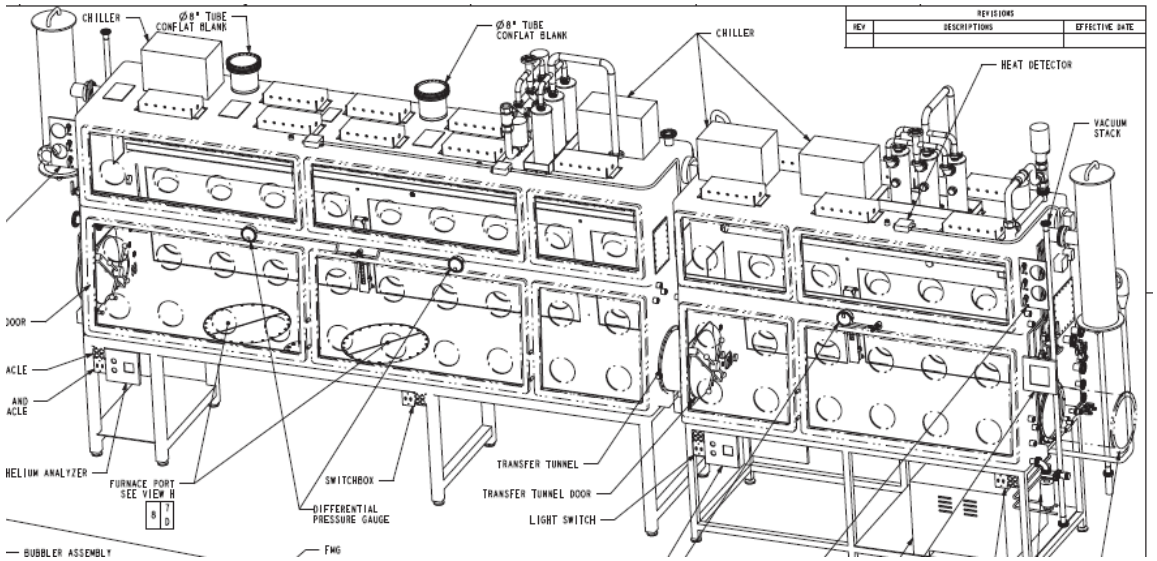
Materials and Fuels Complex

- 13 Nuclear Facilities
- Other Facilities



INL Needs

- Need for fabricators and machine shops to be able to integrate designs
  - Examples – Glovebox with equipment such as furnaces, chillers, hoists
  - Design/build capability
  - Ability to work to a quality program



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INL Fabrication & Machining Needs

Idaho National Laboratory

Some Important Things to Consider (QA Perspective and not all inclusive)

- There are three quality levels at INL as defined by our procedures (BEA Only).
  - Nuclear Use (QL-1) – Credited by safety basis document for nuclear safety function (Typically requires supplier/subcontractor to have an NQA-1 based program)
  - Commercial Use (QL-3) – Mission-related industrial facility and research items (Certifications such ISO-9001, ISO-17025, commercial distributor)
  - General Use (QL-4) – “Off the shelf” items requiring compliance to standard warehousing quality standards (None required)
  - Note: QL-2 is a procurement path in which Commercial Grade Dedication is used as a procurement option in which safety related items will be purchased using commercial grade dedication methods and may not require the supplier to have an QA Program. Commercial Grade Dedication places the responsibility upon the contractor (BEA) to develop the technical and quality basis requirements required for an item to perform its required safety function(s).

Some Important Things to Consider (QA Perspective and not all inclusive)

- Regardless of quality level, no matter the size of your company, there are common tools that we can use to achieve quality.
- Understand the requirements of the contract documents (Purchase Order/Subcontract, Statement of Work, Specification, Quality Clauses)
- Understand what parts of your program are important/applicable to the work and how they are to be implemented during performance of the work
- Take note of any hold points, witness points, surveillances, vendor data submittals etc., to ensure scheduling is adequately planned.
- Make sure that it is clear on what are the required/preferred method for communicating issues/concerns during work performance.

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INL Fabrication & Machining Needs

Idaho National Laboratory

We have a diverse set of core support services

BUSES • PARKING • FLEET • FUELING

NON-NUCLEAR BUILDINGS • GROUNDS • UTILITIES

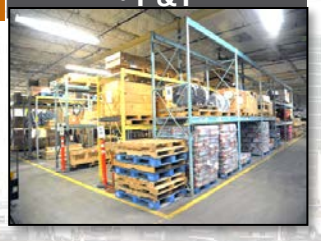
SPACE • LAND USE • REAL ESTATE • D&D • LEASES • MOVES

CAMPUS PLANNING • SUSTAINABILITY

CONSTRUCTION • ENGINEERING

FABRICATION • WELDING • MACHINING • GLASS BLOWING

SHIPPING • RECEIVING • STORAGE • SUPPLIES • P&T



INSTRUMENT CALIBRATIONS

*We **enable science** while **protecting** assets*

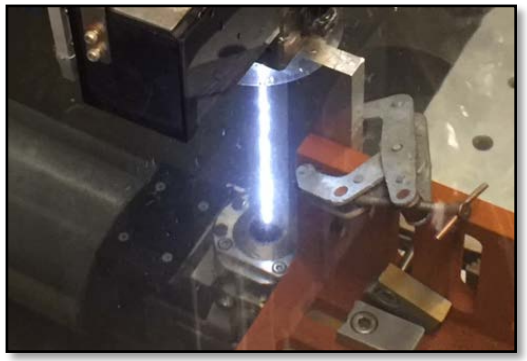
Advanced Manufacturing, Fabrication, and Calibration (AMFAC)

Vision

Fusing science and innovation with the art of fabrication.

Mission

Providing excellent service, outstanding quality, consistent performance, and innovative solutions as a trusted team member supporting success of the INL mission.



Advanced Manufacturing, Fabrication, and Calibration

Key Functions & Services

- **Fabrication Services**
  - Machining
  - Welding
  - Prototyping/Mock-up
  - Glass Blowing
  - Embedded Technical Support in Research Teams

- **Advanced Manufacturing**
  - Develop and operate novel tools and processes to advance manufacturing capability and material evolution.

Advanced Manufacturing, Fabrication, and Calibration - by the numbers

Operational Statistics

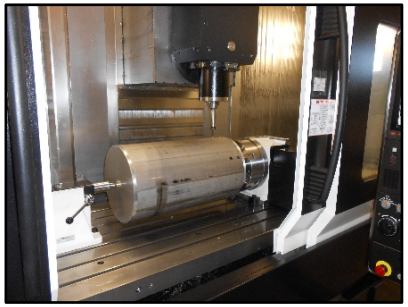
4 Primary Fabrication Facilities

> 500 Fab. Work Requests/Year

> 60 CNCs in Operation

CNC CAPABILITY

Mills	26	Gundrills	2
Lathes	17	Waterjet	1
EDMs	6	Grinder	1
> Additional CNC systems			8



Who We Are

- We provide fabrication, demonstration, deployment, calibration, and technical support services to INL programs and projects. We are responsive to customer needs through cost-effective and timely delivery of services, applying the highest standards meeting technical objectives, and ensuring safety in meeting our vision and mission.
    - Provide fabrication and calibration solutions to enable projects and programs to execute as designed.
    - Partner with off-site providers as necessary to support fabrication and calibration capabilities in meeting priority demands.

THE COOL THINGS WE DO

- We accommodate science by shaping materials, building components, and providing one-of-a-kind items for experiments and maintenance with exactness, while providing innovative technical solutions.

Most of our fabricated items are small with the quantities of one and the materials INL commonly uses are stainless steel, aluminum, zircaloy, inconel, titanium.

INL Blanket Master Contract

- INL developed an outsourcing process called INL Blanket Master Contracts in 2016. This process was developed to help reduce the time in getting a contract awarded to outside manufacturing companies.

- Currently we have nine outside manufacturing companies on the Blanket Master Contract List.
  - The size of these companies range from small local shops to large out of state shops.
  - Their capabilities also range from small to large depending on the equipment.

- On the Blanket Master Contracts we award approx. $400K per year.
  - Manufacturing demand at INL continues to increase.

- There are manufacturing companies that have only machining capabilities and others that have only manufacturing capabilities. There are a couple manufacturing companies that have both manufacturing and machining capabilities.
  - INL needs companies that have both manufacturing/machining capabilities.

INL External Manufacturing Resources

- Machining capabilities:
  - CNC/manual mills
  - CNC/manual Lathes
  - EDM(wire/sinker)
  - Vertical/horizontal boring machines
  - Gun drilling
- Manufacturing capabilities:
  - Welding processes: GTAW, GMAW, SMAW (Welding PQR, WPS, Qualified Welders to the common welding codes)
  - Water jet
  - Laser cutting
  - Saws
  - Cutting
  - Grinding
  - Forming
- Inspection capabilities:
  - CMM (Coordinate Measuring Machine)
  - Caliper
  - Micrometers
  - Indicators
  - Comparators
  - Gage Blocks
  - Height Gages

Summary

- Machining and Fabrication:
  - 90% of our work is small, engineered components/assemblies
  - Very little production work. Usually items consisting of Qty 1
  - INL needs outside vendors with both machining/fabrication capabilities
  - All INL fabrication that involves welding will require PQR, WPS, WQ, Weld inspections
  - All (BMC) will require 100%-dimensional inspection, unless stated otherwise on the contract

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BEA Procurement Perspective

- INL Vendor Portal (vendor.inl.gov)
- INL Opportunities Portal
- Commonly used NAICS Codes: 332999 and 332710
- Brett's Perspective on INL Fabrication Needs
  - Communication, Communication, Communication!
  - Quality Assurance Requirements
- Typical Request For Proposal
  - Requirements
  - Documents
  - Bid Time Frames
  - Award Criteria
  - Debrief

BEA Procurement Perspective

- Issuance of Contracts/PO's
  - Terms and Conditions
  - Payment Terms, Milestone Payments
  - Documents
  - Quality Clauses
  - Change Request (INL's Change Order)
- Vendor Data System, VDS Forms, Etc.
- Managing Projects
- Potential Follow-on Work
- Final Thought - Please, only bid the work you are confident that you can succeed at…..Don't be afraid to pass on work that would not create success for all parties.