



Exceptional service in the national interest

Developing Manufacturing and Engineering Partnerships



Hosted by: Sandia National Laboratories in Partnership
The University of Texas at El Paso



Sandia National Laboratories is a multimission laboratory managed and operated by National Technology & Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International Inc., for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525.SAND2019-11784 PE



AGENDA

- 8:30 AM Introductions – Laura Lovato
- 8:40 AM Welcome – Dr. Heather Wilson, UTEP
- 8:55 AM About Sandia National Laboratories – Dr. James Peery
- 9:10 AM Build Back Better Award – Dr. Ahsan Choudhuri
- 9:25 AM Sandia's Supply Chain – Louis Griego
- 9:40 AM Sandia's National Security Requirements – Dennis Helmich
- 9:55 AM Sandia's PPVS Requirements – Alfonso Lopez-Gaston
- 10:10 AM Break
- 10:25 AM Sandia's Hi-Rel Custom Tech Requirements – Tri Trinh
- 10:40 AM Sandia's Fabrication Requirements – Jeremy Cottle
- 10:55 AM Sandia's Supply Chain Risk – Amber Romero
- 11:10 AM Working with Sandia – Laura Lovato
- 11:25 AM Introduction to WIPP – Ryan Williamson
- 11:40 AM Introduction to Borderplex Alliance – Denise Avila
- 11:55 AM Closing Remarks – Laura Lovato
- 12:00 PM Networking



Dr. Heather Wilson
President of The University Texas at El Paso



Dr. James Peery

Labs Director for Sandia National
Laboratories

SANDIA'S HISTORY IS TRACED TO THE MANHATTAN PROJECT

THE WHITE HOUSE
WASHINGTON

May 13, 1949

Dear Mr. Wilson:

I am informed that the Atomic Energy Commission intends to ask that the Bell Telephone Laboratories accept under contract the direction of the Sandia Laboratory at Albuquerque, New Mexico.

This operation, which is a vital segment of the atomic weapons program, is of extreme importance and urgency in the national defense, and should have the best possible technical direction.

I hope that after you have heard more in detail from the Atomic Energy Commission, your organization will find it possible to undertake this task. **In my opinion you have here an opportunity to render an exceptional service in the national interest.**

I am writing a similar note direct to Dr. O. E. Buckley.

Very sincerely yours,
Harry Truman

Mr. Leroy A. Wilson,
President,
American Telephone and Telegraph
195 Broadway,
New York 7, N. Y.



- July 1945: Los Alamos creates Z Division
- Nonnuclear component engineering
- November 1, 1949: Sandia Laboratory established
- AT&T: 1949–1993
- Martin Marietta: 1993–1995
- Lockheed Martin: 1995–2017
- Honeywell: 2017–present

SANDIA IS A FEDERALLY FUNDED RESEARCH AND DEVELOPMENT CENTER (FFRDC) MANAGED AND OPERATED BY

National Technology & Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International Inc.

Government-owned, contractor-operated

FFRDCs are long-term strategic partners to the federal government, operating in the public interest with objectivity and independence and maintaining core competencies in missions of national significance

NATIONAL SECURITY IS OUR BUSINESS

For more than 70 years, Sandia has delivered essential science and technology to address the nation's most challenging security issues



PURPOSE

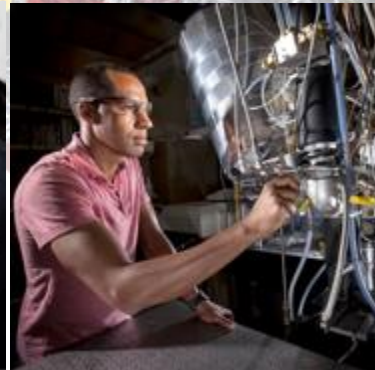
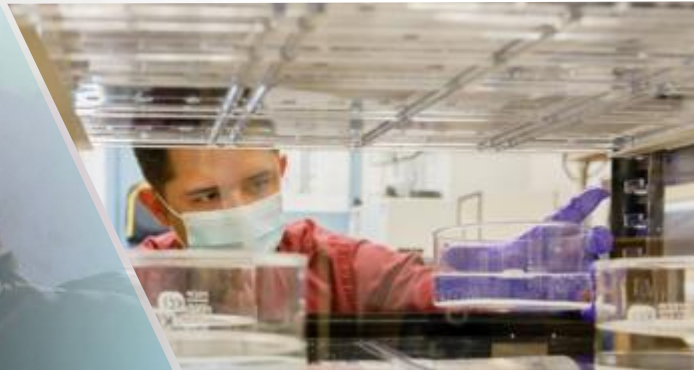
Render exceptional service in the national interest

VISION

To be a leader in keeping the world safe and secure

MISSION

We use innovative science and engineering to anticipate and solve the most challenging national security problems



WE PLAY A CRITICAL ROLE IN THE NATIONAL CONVERSATION THAT LOOKS AT THE FUTURE OF GLOBAL SECURITY

The geopolitical environment is rapidly changing and the U.S. must prepare for technology surprise with speed, agility, and innovation

OBJECTIVE

IN 10 YEARS, WE WILL HAVE UNLEASHED HIGH-VELOCITY ENGINEERING TO COUNTER GLOBAL THREATS BY:

- Anticipating future threats
- Applying revolutionary science and engineering
- Dramatically reducing delivery timelines
- Inspiring and including contributions from all
- Leading the enterprise
- Serving as an FFRDC with objectivity and independence in the public interest
- Taking appropriate risks

Resulting in:

● SUSTAINED U.S. TECHNICAL ADVANTAGE

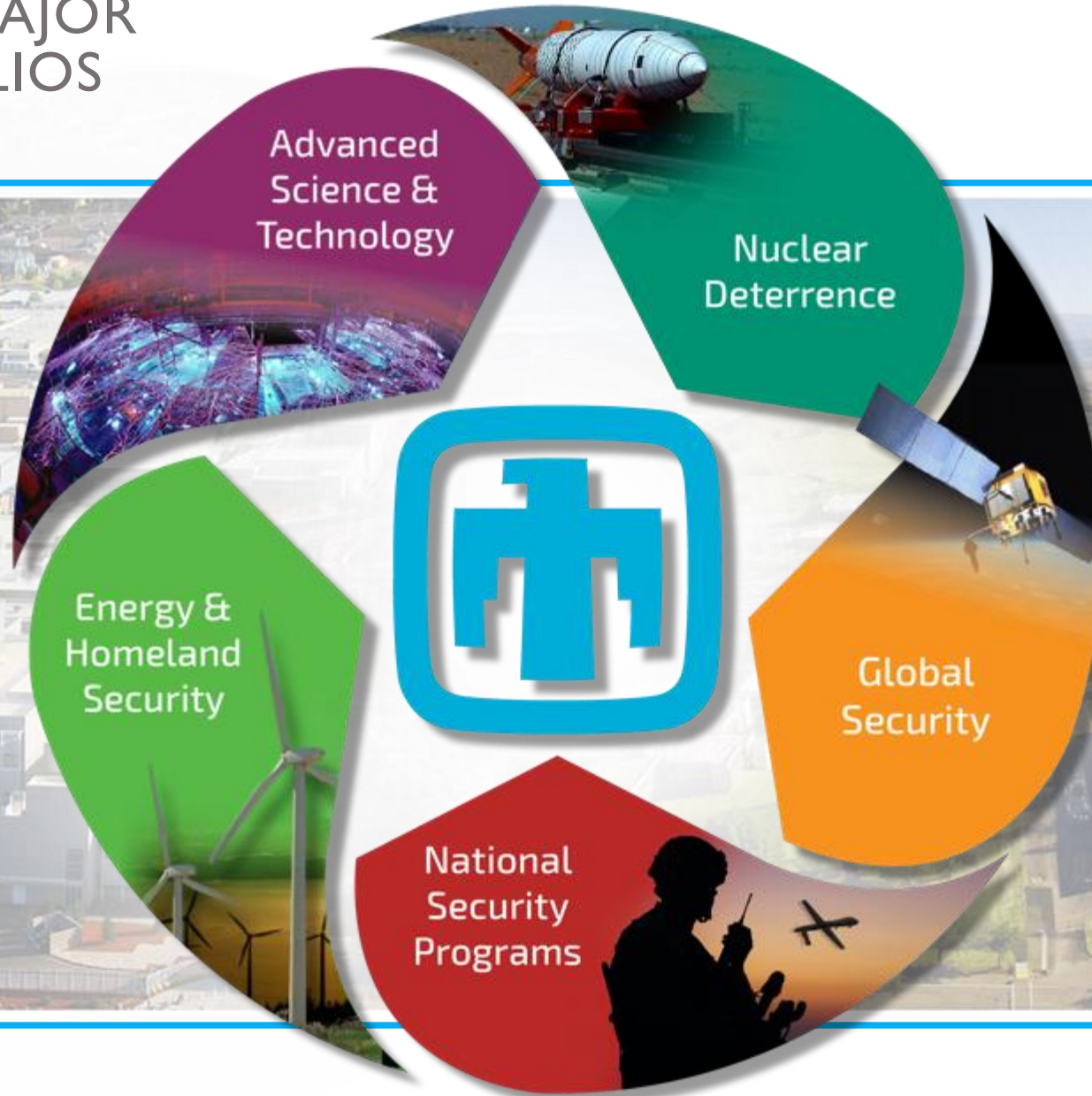
● AN UNSTOPPABLE TEAM

● BREAKTHROUGH INNOVATIONS

● TIMELINES CUT IN HALF

● CONTINUED EXCEPTIONAL SERVICE IN THE NATIONAL INTEREST

SANDIA HAS FIVE MAJOR PROGRAM PORTFOLIOS





NUCLEAR DETERRENCE

Responsibilities form a critical mandate

Warhead systems engineering & integration



Design agency for nonnuclear components

- Gas transfer systems
- Radar
- Safety systems
- Arming, fuzing, and firing systems
- Neutron generators

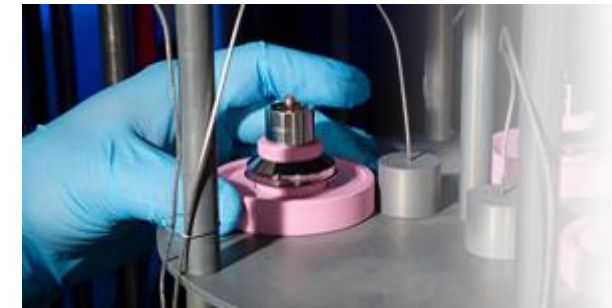


Sandia's Mission Assurance organization proactively prevents defects and ensures mission success

Multidisciplinary capabilities

Required for design, qualification, production, surveillance, computation/experimentation

- Major environmental test facilities & diagnostics
- Materials sciences
- Light-initiated high explosives
- Computational analytics



Production agency

- Neutron generators
- Sandia external production
- Microelectronics
- Thermal batteries



NUCLEAR DETERRENCE

Seven major programs are carried out



Mk21 Arming & Fuzing Assembly



W88 Alteration (ALT) 370



Mobile Guardian Transporter



W80-4 Life Extension Program (LEP)



B61-12 Life Extension Program

W87-1 Modification Program

W93 Program



GLOBAL SECURITY

Protects the nation from threats at home and abroad

- Develop space- and ground-based sensor systems for monitoring emerging threats
- Supply technology, crisis response, and training to respond to a crisis associated with weapons of mass destruction
- Provide capabilities for protecting U.S. nuclear weapons and materials at fixed sites and in transit
- Produce systems that deter proliferation and verify compliance with international agreements using space-borne and ground-based sensing technology
- Lead global technical engagement to prevent the misuse of nuclear, chemical, biological, and radiological materials





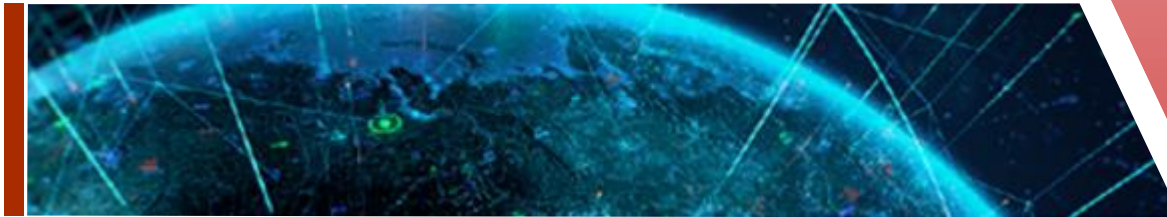
NATIONAL SECURITY PROGRAMS

Provide trusted, threat-informed pathfinder technology for national security

Information Operations



Proliferation Assessments



Science & Technology Products



Surveillance & Reconnaissance



Integrated Military Systems

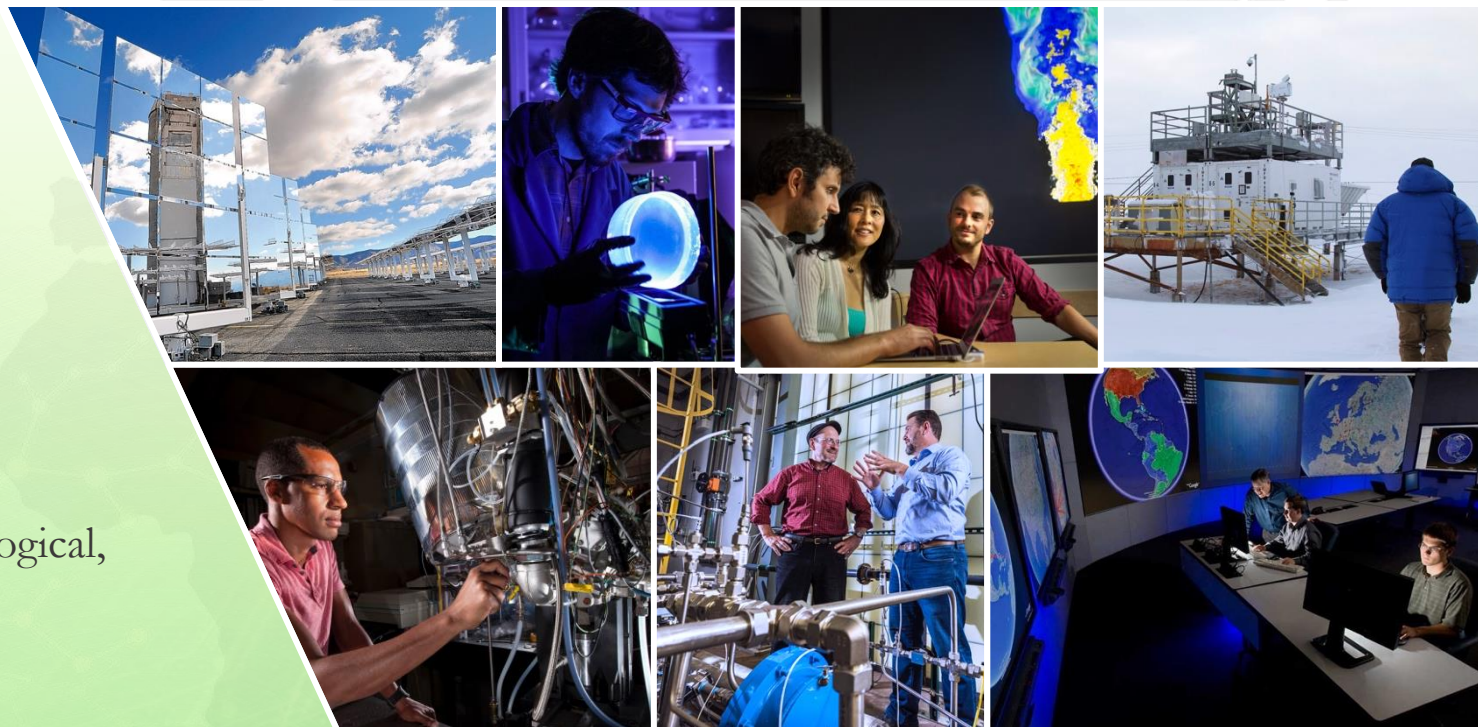




ENERGY & HOMELAND SECURITY

Secures the nation's critical infrastructures and environment against attacks, threats, and climate change by performing world-class research and development

- Enable the full potential of renewable energy and subsurface resources
- Ensure the safety, security, and resilience of nuclear power and the electric grid, and the safe management and disposal of radioactive wastes
- Advance efficient and sustainable energy use for a changing world
- Reduce the nation's vulnerability to chemical, biological, radiological, and nuclear threats
- Increase our nation's digital and physical critical infrastructure security and resilience to natural and human-made threats





ADVANCED SCIENCE & TECHNOLOGY

Integrates multidisciplinary efforts to advance the science of the possible for Sandia's missions



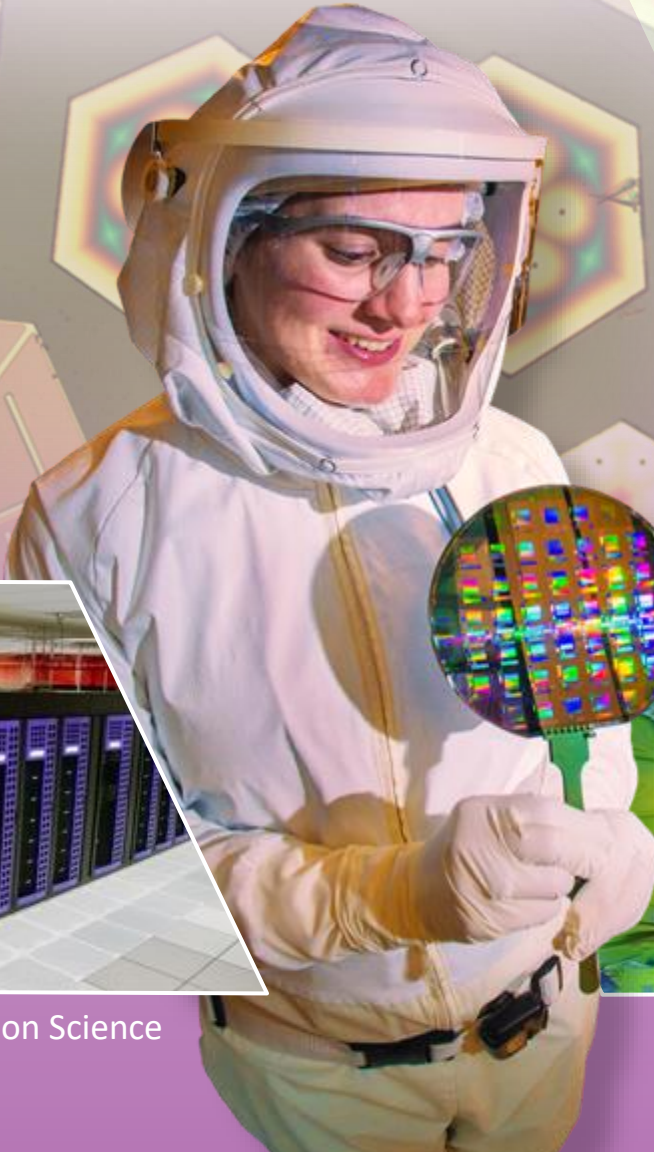
OFFICE OF SCIENCE (SC) PROGRAM

- Advanced and unique scientific and engineering capabilities support SC's priorities for DOE's missions
- SC-funded Sandians perform innovative, world-class research that cannot be pursued elsewhere and achieve national and international impact while countering science and technology surprise
- Provides an important talent pipeline, helping to attract and retain the best and brightest fundamental science researchers who contribute broadly across Sandia's missions over their careers

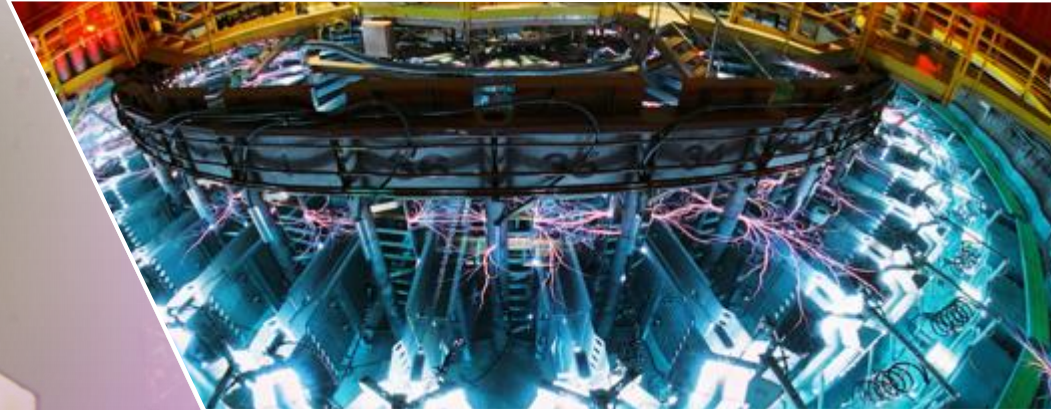


ADVANCED SCIENCE & TECHNOLOGY

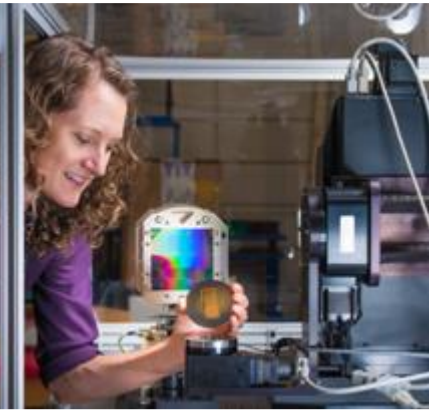
Research Foundations play an integral role in mission delivery



Nanodevices & Microsystems



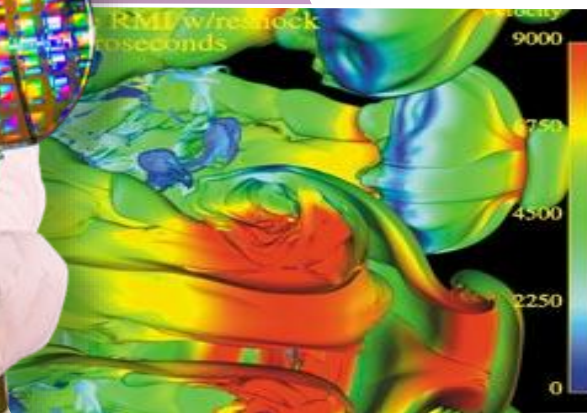
Radiation, Electrical, and High Energy Density Science



Materials Science



Computing & Information Science



Engineering Science



Earth Science



Bioscience

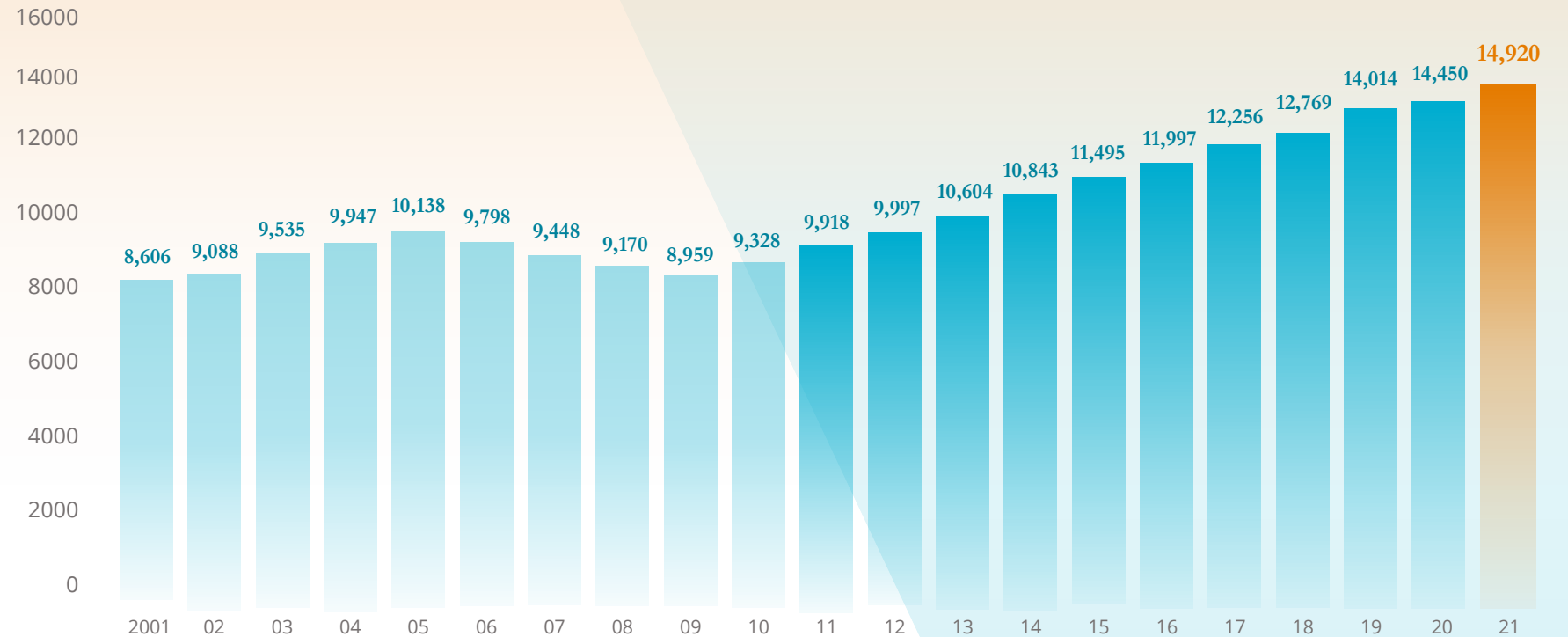
SANDIA'S WORKFORCE IS GROWING

Staff has grown by more than 5,000 since 2011 to meet all mission needs

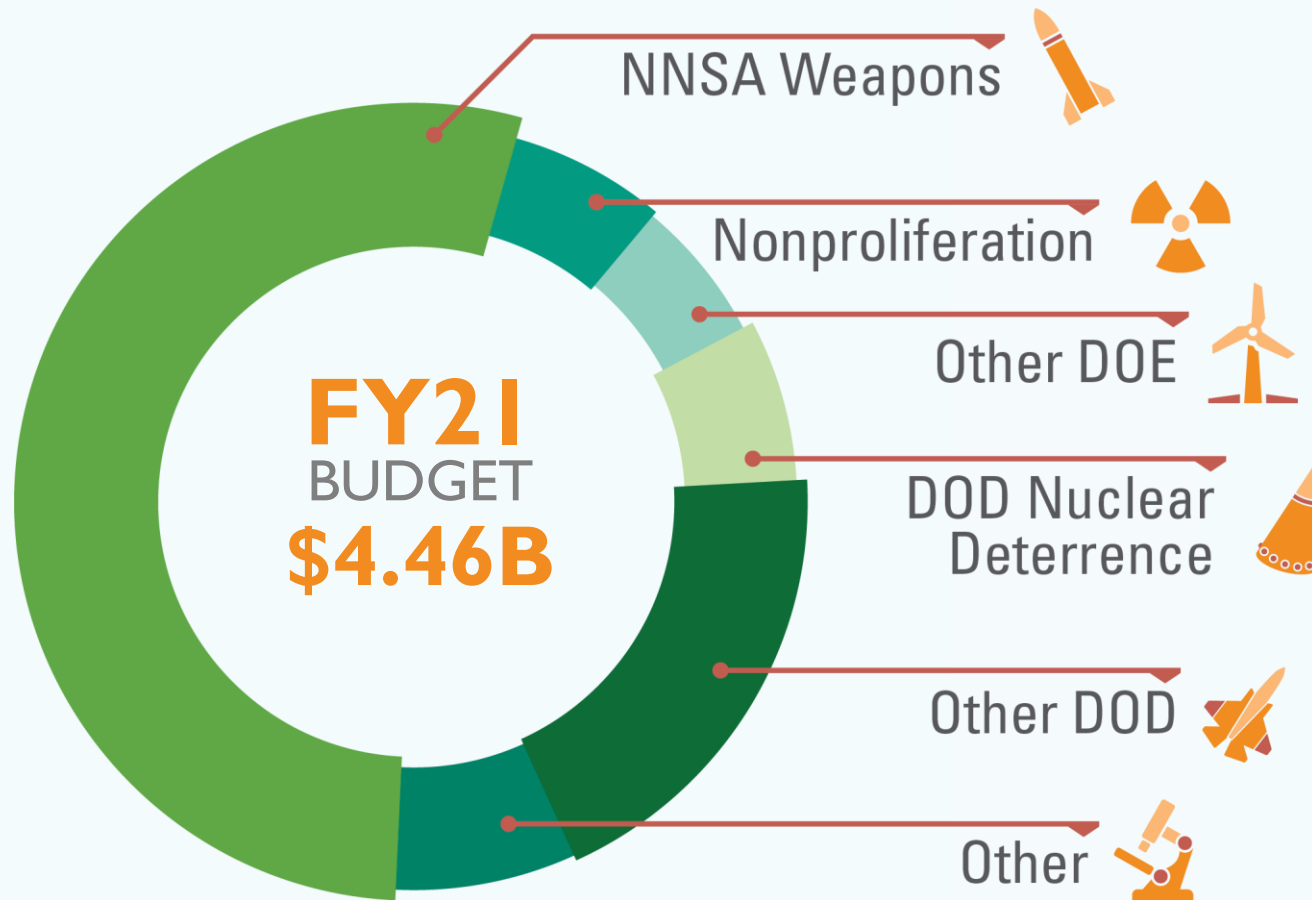


13,078
New Mexico

1,842
California



OUR BUDGET COVERS A BROAD RANGE OF GOVERNMENT AND OTHER WORK



OTHER

Department of Homeland Security
Other federal agencies | Nonfederal entities
CRADAs, licenses, royalties | Inter-entity work



DOD

Air Force | Army | Navy
Defense Threat Reduction Agency
Ballistic Missile Defense Organization
Office of the Secretary of Defense
Defense Advanced Research Projects Agency
Intelligence Community



OTHER DOE

Science
Energy Efficiency and Renewable Energy
Nuclear Energy
Environmental Management
Electricity Delivery and Energy Reliability
Other DOE



NONPROLIFERATION

NNSA/NA20 | State Department



Dr. Ahsan Choudhuri

University of Texas at El Paso
Associate Vice President
Aerospace Center (cSETR)

Professor of Aerospace and Mechanical
Engineering



Louis Griego

Sandia National Laboratories
Director of Integrated Supply Chain

INTEGRATED SUPPLY CHAIN OPERATIONS



Procurement

- Acquisition planning, strategic purchasing
- Just-in-Time purchases
- P-Card purchases
- Subcontracts

Approved Purchasing System (\$20M) for 3 years



Logistics

- Property Management
- Receive/Deliver packages
- Corporate Storage
- Shipping/Mail Services
- Hazardous/Non-Hazardous Moves

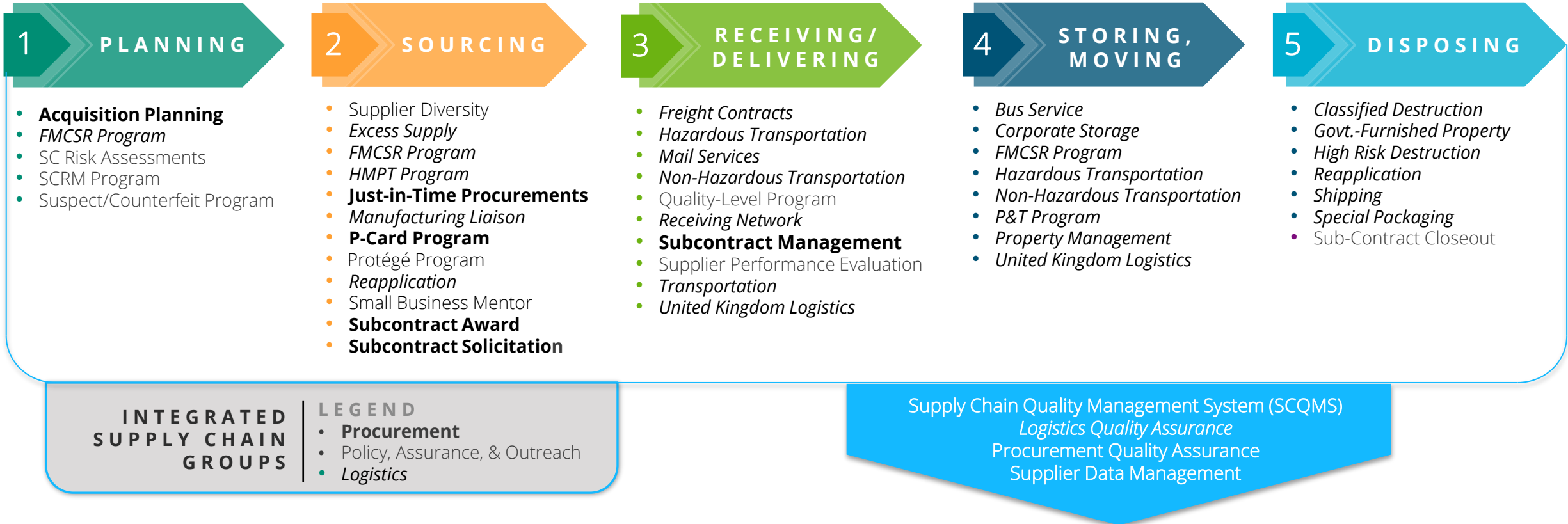
Approved Property Management System



Policies, Assurance & Outreach

- Active suppliers monitored for debarments or sanctions
- Detailed risk assessments performed for critical purchases
- Small Business Forums
- Improved small business spend
- Authors and issues quarterly Congressional Newsletters
- Publishes Annual Economic Impact Brochure

INTEGRATING KEY PROCESSES AND FUNCTIONS ACROSS THE ENTIRE VALUE STREAM TO ACHIEVE MISSION REQUIREMENTS



OUTPUTS *for the Customer*

- Customer Satisfaction
- Reduction in Lead Times
- Approved Contractor Purchasing System
- Improved Cycle Time
- Efficiency Gains
- Approved Property Management System
- Lower Costs
- Reduced Shrinkage
-
- Reliable Sources

SUPPLY CHAIN THREATS AND DISRUPTIONS



Continued Impact of COVID-19

Supply shortages, unpredictable forecasting, logistic roadblocks, etc.



Repercussions from Geo-Political events

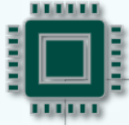
Russia/Ukraine Conflict, sanctions, threats from adversaries



Inflation and rapidly changing materials costs

Pricing changes for raw materials driven by variation in demand

ONGOING SUPPLY CHAIN DISRUPTIONS SCRM MONITORS



Electronic Materials

- Resistors
- Integrated Circuits
- Cables and Connectors
- Wires
- Coax Coating
- Semiconductor Chips
- Printed Circuit Boards (PCB)
- Printed Wiring Assemblies (PWA)
- Fiber optic Cable
- Rare-metal components
- Hardware
- FPGA – Field Programmable Gate Array chips
- COTS electronics
- IT Networking equipment



Chemicals

- Neon Gas
- Caustic Soda
- Isocyanate
- Phosphates
- Dessicants - silica gel
- Acrylonitrile Butadiene Styrene (ABS)
- Polymer adhesives (particularly 3M products)
- Blasting media- abrasive powder
- Ethylene Glycol
- 1-Methyl-2-pyrrolidinone (NMP)
- Anti-foam fluid
- Silicon
- Magnesium



Labor per Industry

- Manufacturing (non-durable goods)
- Transportation
- Warehouses
- Manufacturing (durable goods)
- Wholesale Trade
- Construction
- Information Technology



Construction Materials

- Concrete
- Forklifts
- Fleet vehicles
- HEPA filters
- Roofing / ceilings
- Flooring
- Lumber
- Gypsum
- Pipes
- Insulation
- Polyvinyl Chloride (PVC)
- HVAC
- Boilers
- Paint
- Gypsum wallboard
- Air Handling Units
- Electrical equipment
- Doors



Metals

- Copper
- Kovar
- Rare Earth Metals (Erbium, Scandium)
- Molybdenum metal sheets and powder
- Aluminum
- Steel
- Tin products
- Iron
- Palladium
- Copper foil
- Nickel
- Titanium
- Lithium
- Cobalt
- Pig iron



Packaging / Shipping

- Corrugated Packaging
- Crude Oil / Diesel Fuel
- Plastic Containers
- Pallets
- Polyethylene (PE)
- Polypropylene (PP)
- Monoethylene (MEG)
- Polystyrene foam
- Trailers for transportation



Miscellaneous

- Batteries
- Vacuum chambers
- Rubber-Based Products
- Resin-Based Products
- Plastics / Plastic Resins
- Rubber
- Glass
- Adhesives
- Medical lab equipment
- Pipettes
- Dry ice
- Carbon black
- Epoxy curing agents

CURRENT SUPPLY CHAIN DISRUPTIONS

Disruption	Customer	Cause of the Disruption	Impact
Shortage of IT Professionals & IT Networking Equipment	<ul style="list-style-type: none"> NM & CA data centers High Performance Computing 	<ul style="list-style-type: none"> Classified computing does not allow for a remote option (which seems to be more important to staff than higher pay). However, pay rates are still too low. 	<ul style="list-style-type: none"> The latest GII/DOL has been increased ~4.5% and more suppliers are requesting it. Some suppliers who have historically not requested rate increases are seeking equitable adjustments of 10-15% on their rates. Deliverable schedules are often taking twice as long to complete due to personnel shortages.
Customized Printed Circuit Boards and Printed Wiring Assemblies	<ul style="list-style-type: none"> Mobile Guardian Transport 	<ul style="list-style-type: none"> Raw material shortages (Copper foil and Pre Prag) Backlog, companies haven't fully caught up. Some relief has occurred, but it is not fully recovered. 	<ul style="list-style-type: none"> Individual purchase orders have been delayed but the overall schedule has not been impacted yet
Chemical shortages	<ul style="list-style-type: none"> W80-4 PPVS 	<ul style="list-style-type: none"> Companies have not caught up from pandemic supply issues. Chemicals with a limited life and long lead times (6+ months) are expiring too soon for use. 	<ul style="list-style-type: none"> Final schedules have not yet been impacted; however smaller deliverable schedules are getting tighter
HVAC units, High Voltage Switching Gears, Steel, Roofing Materials, Labor, Air Handling Units, Vacuum Chambers	<ul style="list-style-type: none"> Large A&E construction projects 	<ul style="list-style-type: none"> Raw material and semi-conductor computer chip shortages Rising diesel fuel costs 	<ul style="list-style-type: none"> Anticipating project delays of at least 6-8 months Prices are increasing ~50%

SCRM PRIORITY INITIATIVES

Subcontractor Risk Assessment

- Full risk analysis on suppliers that looks into their Cybersecurity Indicators, Financial Health, Risk Events/Indicators, Sandia Past Performance, Counterfeit Indicators, Foreign Corporate Linkages, Non-US Labor, Lower Tier Supply Chain.

Suspect Counterfeit

- Identification and investigation into potential Suspect/Counterfeit items within the laboratory to minimize safety and security issues.

Score

- Internal performance feedback metrics are gathered to address subcontractor issues

QL inspection

- Every quality significant item received requires an inspection be completed to identify any potential safety, security or suspect/counterfeit concerns.



Dennis Helmich

Sandia National Laboratories
Director of Integrated Military Systems
Development

NATIONAL SECURITY PROGRAMS & INTEGRATED MILITARY SYSTEMS

OVERVIEW



Director of Integrated Military Systems

Dennis R. Helmich



CENTER 5400

NATIONAL SECURITY PROGRAMS

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Background

National Security Programs



INFORMATION OPERATIONS



INTEGRATED MILITARY SYSTEMS



PROLIFERATION ASSESSMENTS



SCIENCE & TECHNOLOGY PRODUCTS



SURVEILLANCE & RECONNAISSANCE



Integrated Military Systems



Develops, demonstrates, and supports the fielding of game changing integrated systems and technologies to solve our warfighters' most challenging, urgent, and high-risk problems.

SUBPROGRAMS

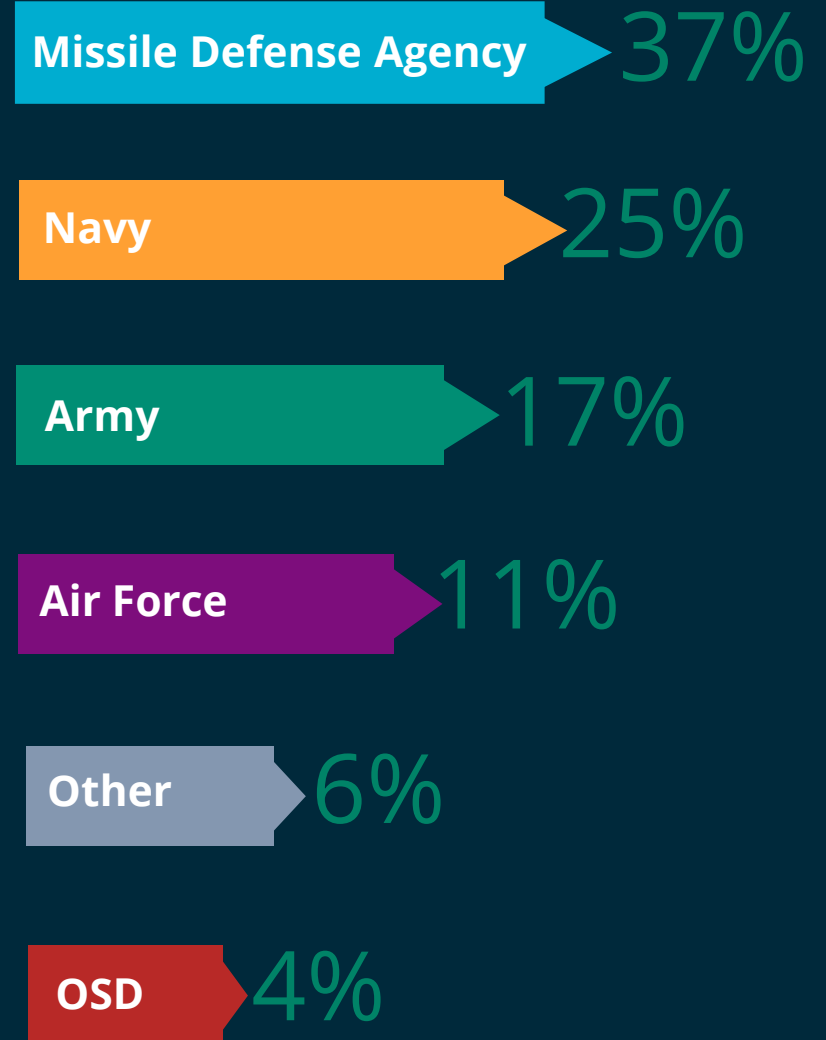
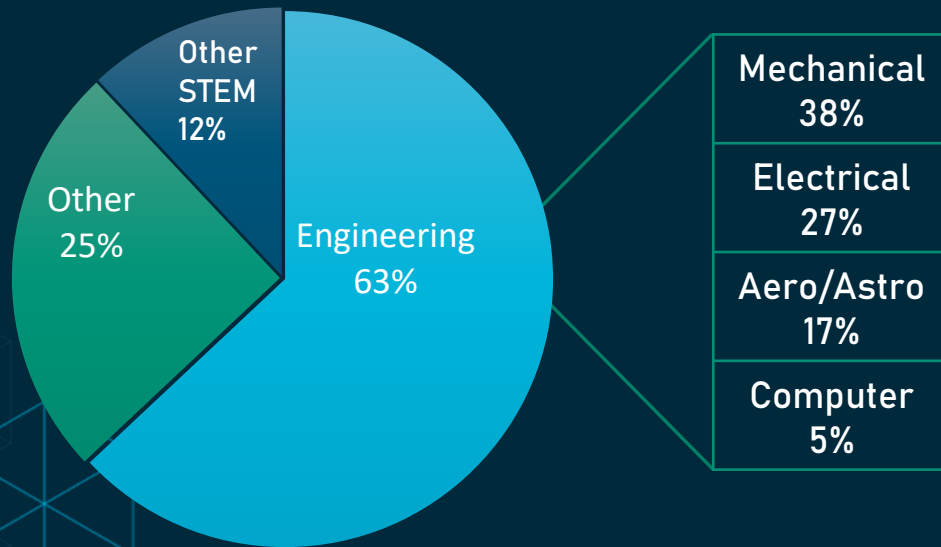
- Missile, Air, and Space Defense
- Next Generation System Analytics
- Pathfinder Technologies
- Strike Systems and Aerospace Technologies



Integrated Military Systems



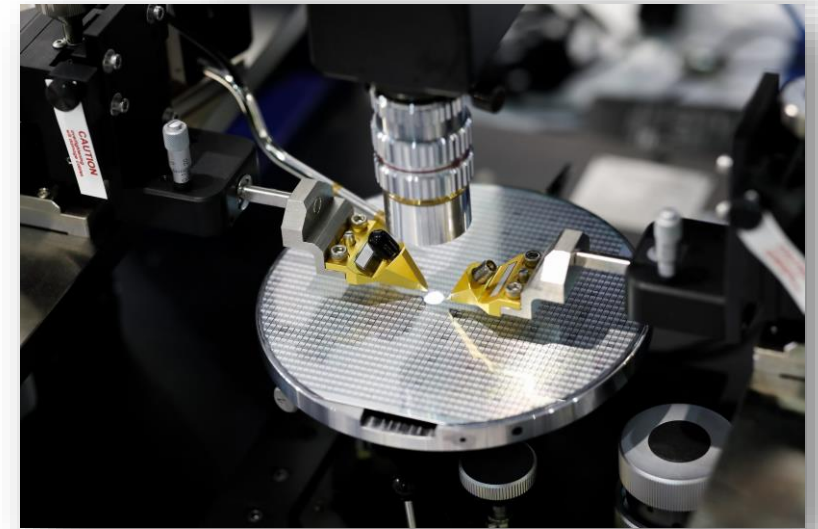
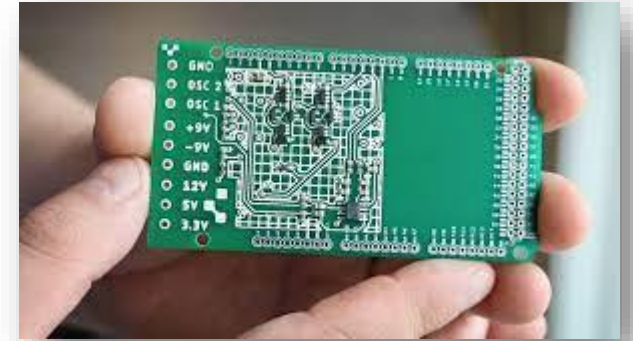
- Center consists of 400 staff with multi-disciplinary backgrounds.
- Majority of work performed is schedule driven so supply chain and procurements are a critical issue for the Center.



Products We Procure across NSP



- Printed wiring boards and assemblies
- Machined metal housing and structural components
- Cable assemblies
- Electronic sub-assemblies and housings
- Energetic components
- Electromechanical actuators
- Automated test equipment
- RF sub components and assemblies
- Microelectronics fabrication tools



Nearly all procurements for IMS are at the OUO/CUI/ITAR level or higher



Future Needs



High Op Tempo (HOT) for Hypersonics (H4H)

Cooperatively funded, planned and executed **annual flight test campaign** utilizing **precision sounding rockets** for rapid maturation of enabling offensive and defensive hypersonic technologies



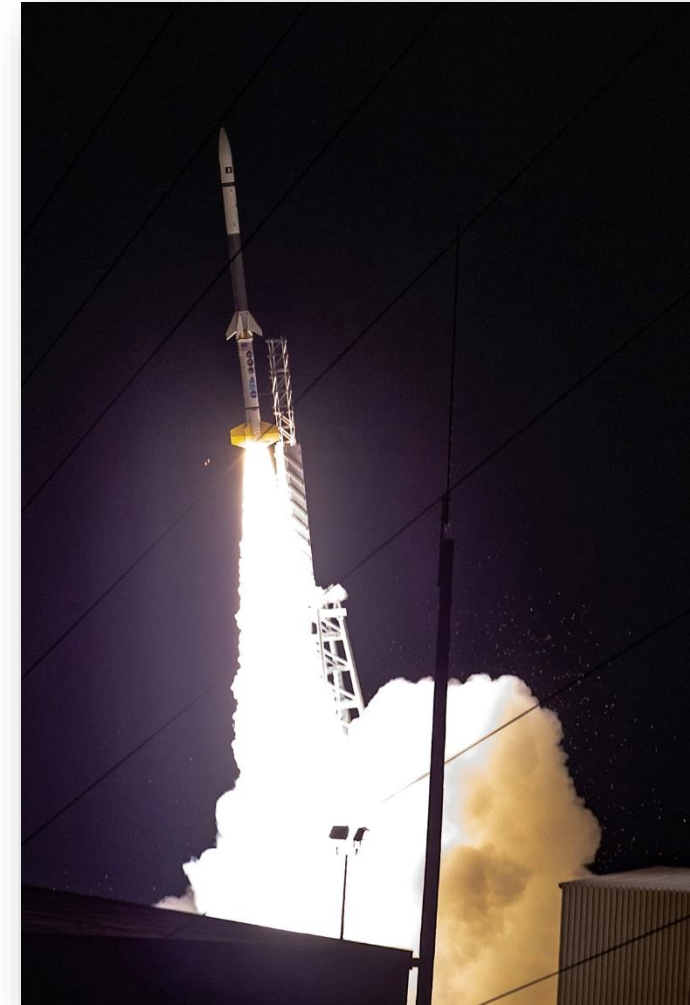
Precision sounding rockets achieve hypersonic environments at a **fraction of the cost and complexity** of typical "all-up" flight tests

Boost-phase conditions are different (e.g. spinning), but reach equivalent velocities and environments

Simplified rail-launched vehicles without flight termination systems reducing complexity and costs

Multi-shot campaigns provide economies of scale that enable further cost effectiveness while maximizing workforce development

The H4H Program speeds up technology and workforce development with increased testing opportunities, accelerates innovation, research, and prototyping and will result in rapidly improving the U.S. hypersonic capabilities in-parallel to full system flight tests



Increasing Hypersonic Testing Through MACH-TB



\$15M

targeted cost per
full-scale test

<\$7M

sub-scale testing per
launch vehicle

Objective

support hypersonic programs by creating opportunities to test technologies with robust, agile and modular approaches.

Test Bed Approach

- Incremental approach to rapid testing
 - Increasing trajectory complexity
- Use of additive manufacturing for Thermal Protection System and Sub-Structures (ORNL)
- Rocket Lab Electron Launch Vehicle (30 launches to date)

\$100K - \$1M

per test/ride-along

20+

partners from
industry, national
labs, & academia

Dynetics
A Leidos Company



Sandia National Laboratories

SPINLAUNCH

OAK RIDGE
National Laboratory

CORVID

KRATOS
DEFENSE & SECURITY SOLUTIONS

STRATOLAUNCH

ROCKETLAB

CAMINO: Center for Advanced Manufacturing Innovation



Current State

- Need for increased speed and agility
- Serial processes
- Siloed, scattered capabilities
- Administrative delays and cultural hurdles

Goals

- **Rapid prototyping capabilities to the component level**
- **Home** for Sandia's Advanced Materials and Manufacturing capabilities
- **DA/PA enclave relationships**
- **Rapid design/build/test iterations** using HPC, SOTA equipment
- Integrated and co-located R&D with **government, industry, and academia**

Proposed "CAMINO" Off-Site Facility

A NATIONAL RESOURCE FOR SPECIALIZED AM CAPABILITIES

ADVANCED
MANUFACTURING
CAPABILITIES

MSRF: STEWARDING
NOVEL MATERIALS
SYNTHESIS AND
DISCOVERY

MISSION
FOCUSED RAPID
PROTOTYPING

Co-locates Industry, Government, & Academia

- Accelerates and supports tech transfer: Spin-In and Spin-Out
- Low barriers to R&D partnerships with industry and academia
- Accelerated workflows, rapid prototyping, & solutions to "tech mat" roadblocks

Designs for manufactur-ibility

Couples TRL & MRL advances - ensuring high TRL isn't reached without the ability to manufacture at scale.



Creates New Solutions to Old Problems

- Cables, next-generation interconnects, & backshells
- Polymers, Metal, Composites Advanced Manufacturing
- AM qualification and insertion



URGENT NATIONAL
SECURITY DRIVER



AML LEASE
EXPIRATION



SNL ND
MISSION TIES



PARTNERSHIPS



MISSION-SPECIFIC
PROTOTYPING



Alfonso Lopez-Gaston

Sandia National Laboratories
Purchase Product Value Stream Manager

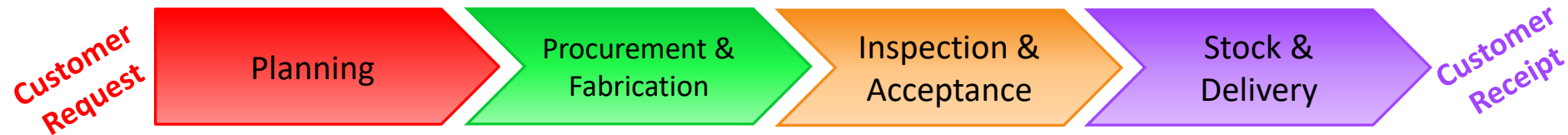
PURCHASE PRODUCT VALUE STREAM

- The Purchased Product Value Stream is responsible for product engineering and materials planning for production missions at Sandia National Laboratories.
- We provide technical leadership in the various engineering disciplines (mechanical, chemical, materials science, and electrical) to identify, develop, deliver, assure, and sustain a commercial supply base for weapon components, materials, subassemblies, and custom tooling.
- We anticipate and manage risk within the supply chain, researching alternate materials, defining and developing test and evaluation methodologies, developing design of experiments, identifying and developing supplier capabilities, and leading qualification activities.
- We provide materials planning expertise using industry-standard materials-planning processes and tools to initiate the procurement phase and monitoring the supply chain to meet product-realization schedules.

PPVS OVERVIEW

PPVS is responsible for interactions with the commercial supply base for input materials that will go into high rigor/high consequences design, development and production activities at SNL.

Materials include raw materials, piece parts, components, sub-assemblies and tooling.



Goal: Quality Parts & Services Delivered On-Time, for the Lowest Cost, with Maximum Agility.

PPVS OVERVIEW

91 Engineering Commodity Sets

Piece Parts

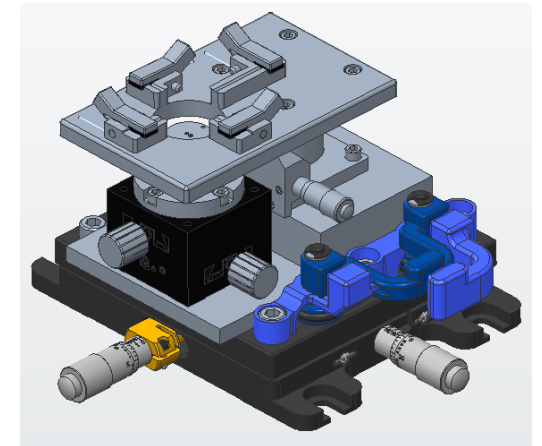
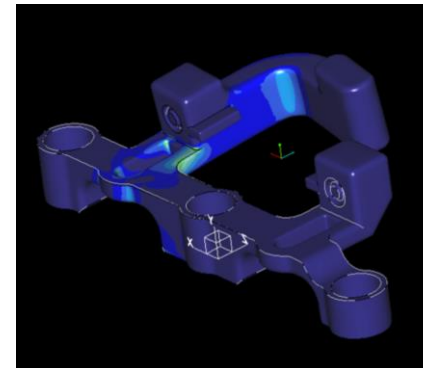
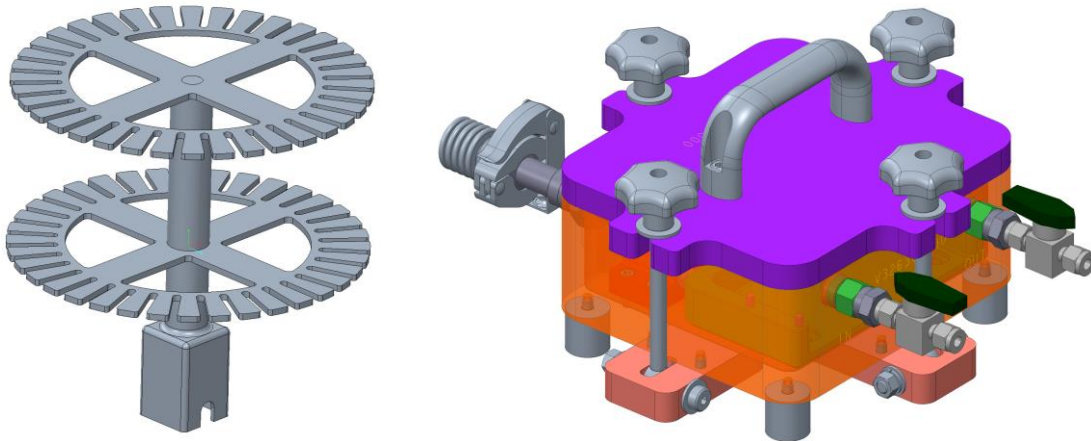
- Metal, Foam, Molded & Plastic Components
- Ceramics, Cermets, Composites
- Raw Materials, Braze Materials, Chemicals
- Electrical Components, Cables, Connectors
- COTS: Electrical, Nuts & Bolts, Tapes, Adhesives

Inspection Services

- Mechanical, Electrical, Chemical
- Non-Destructive

Tooling, Gages, Fixtures, Molds

- Plastic, Metal, Multi-material
- 3D printed or supplier produced



WHAT TO EXPECT WHEN WORKING WITH PPVS

- What can prospective suppliers expect when working with the Purchased Product Value Stream at Sandia National Laboratories?
- Potential discussions with Sandia Purchased Product Engineer (PPE)
 - What tolerances can the supplier meet?
 - What capabilities does the supplier have?
 - What capacity does the supplier have?
 - What kind of customer base does the supplier generally support?
 - Does the supplier carry any external accreditation (AS9100, ISO9001, etc.)?
 - Willingness to do work with Sandia
 - Willingness to go through quality assessment
- Development purchase order to determine if supplier meets part requirements
- Site visit by Purchased Product Engineer
 - Facility tour
 - Discuss future work
 - Technical discussions

POTENTIAL SUPPLIER QUALIFICATIONS NEEDED

- Supplier's Quality Management System (SQMS) may need to be approved prior to a procurement contract being placed
 - Product Quality Requirements (PQR) Assessment:
 - Audit at Supplier's location
 - Graded approach: PQR1010, 1020, 1040, 1050 & 1060
 - Re-approval required every 3 years
- Technical Capability Assessment
- Designated Calibration Source (DCS) approval is required if supplier data is to be used for acceptance. Re-approval is every 2 years.
- Atomic Energy Act (AEA) certified if the parts are Export Controlled



Break

This presentation will resume in 15 minutes



Tri Trinh

Sandia National Laboratories
Manager of Hi-Rel Custom Technologies

1**High Reliability Custom Technologies****2****Supplier Requirements****3****Needed Products and Services****4****Unneeded Products and Services**

HIGH RELIABILITY CUSTOM TECHNOLOGIES

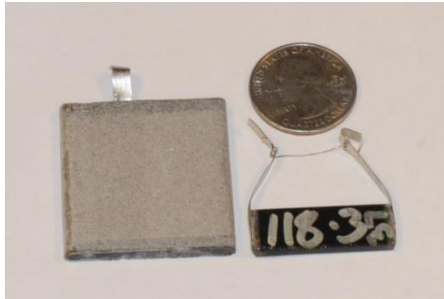


Role	Design Agency (DA)
Responsibilities	DA responsibilities throughout product realization process e.g. conceptual design, development, qualification, production, sustainment
Department Size	17 (includes 1 Manager)
Experience (yrs)	0-20
Funding (\$M)	12-16
Current Activities	<ul style="list-style-type: none">• Steady state production• Development• Early technology maturation

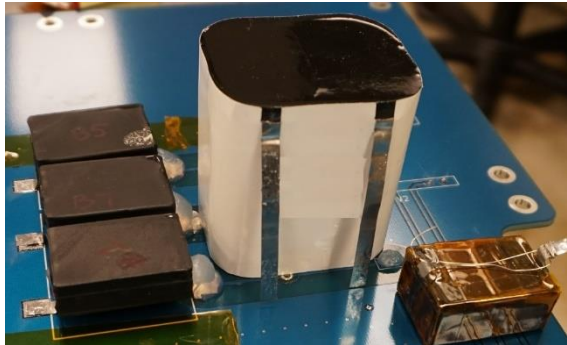
We support the nation's Nuclear Deterrence mission by providing design expertise and hardware.

HIGH RELIABILITY CUSTOM TECHNOLOGIES

Capacitors

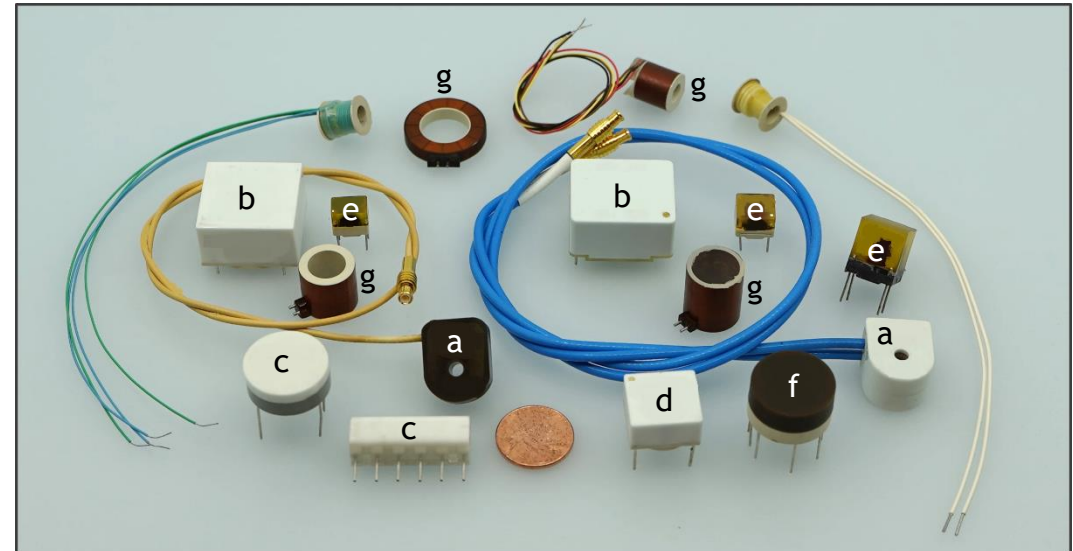


Mica (left), Polymer Multilayer (PML, right)



Mylar (center), Polymer Multilayer (PML, left and right)

Magnetics



- a. Current Viewing Transformers
- b. Flyback
- c. Inductors
- d. Isolation Transformers
- e. Pulse Transformers
- f. Push-pull
- g. Solenoid Coils
- h. Stator Windings (not pictured)

SUPPLIER REQUIREMENTS

- Experience working with production for high consequence applications e.g. aerospace, automotive, medical, military, etc.
- International Traffic in Arms Regulations (ITAR) certified
- US citizens
- Access controlled areas for storage of parts and/or acceptance testers
- Environment controlled processing and storage areas

NEEDED PRODUCTS AND SERVICES

- Injection molding with liquid crystal polymer for small quantities
- Populating boards
- Winding large quantities of capacitor and magnetics prototypes
- Capacitor and magnetics production
- Testing engineering support e.g. hardware, LabVIEW

UNNEEDED PRODUCTS AND SERVICES

- Capacitor and magnetics engineering design



Amber Romero

Sandia National Laboratories
Supply Chain Analyst



Jeremy Cottle

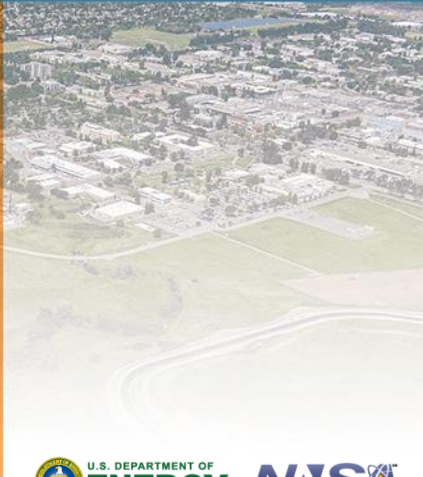
Sandia National Laboratories
Team Lead of Manufacturing Liaison



Sandia
National
Laboratories

MEET SANDIA NATIONAL LABORATORIES,
YOUR HIGH MAINTENANCE CUSTOMER
in the NATIONAL INTEREST

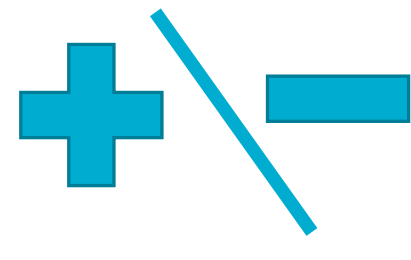
Amber Romero, Supply Chain Analyst
Jeremy Cottle, Manufacturing Liaison Team Lead
Integrated Supply Chain Management



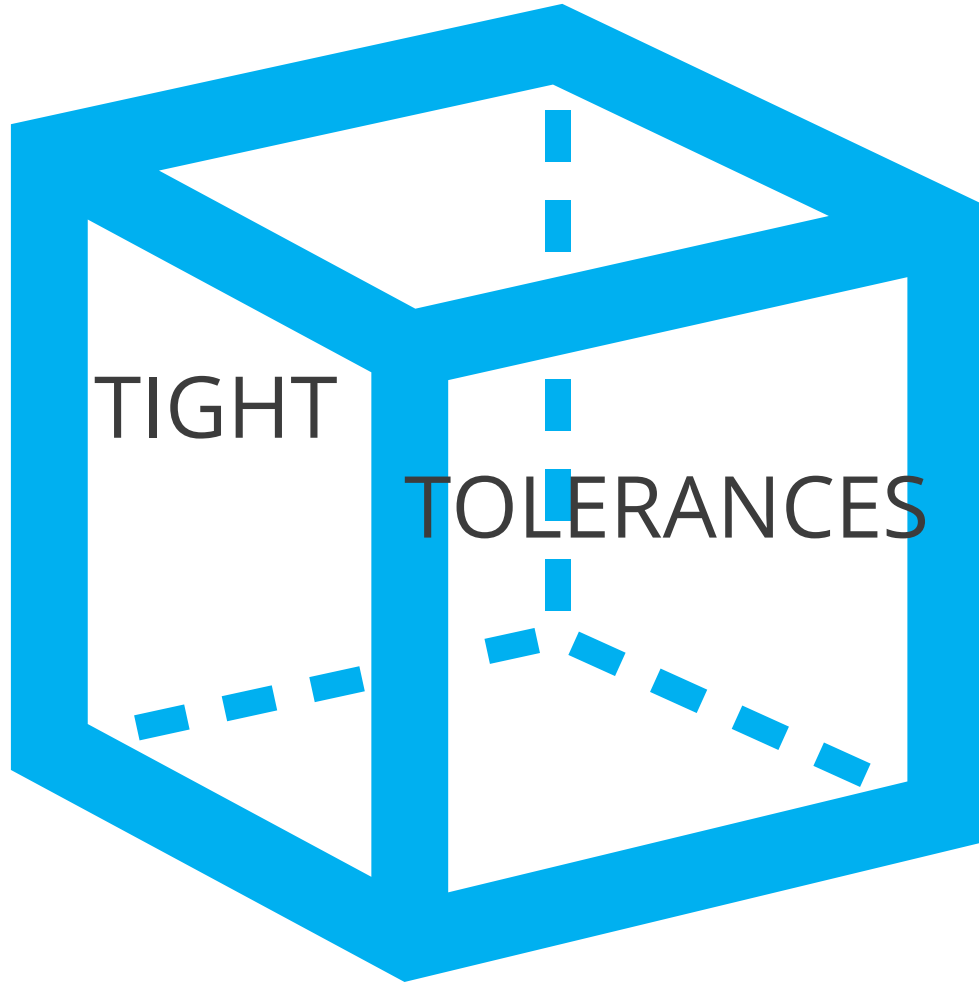
Sandia National Laboratories is a multimission laboratory managed and operated by National Technology & Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International Inc., for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525.

SAND xxxx

TECHNICAL CAPABILITIES



0.001"
or greater



FLATNESS
DIAMETER
THICKNESS



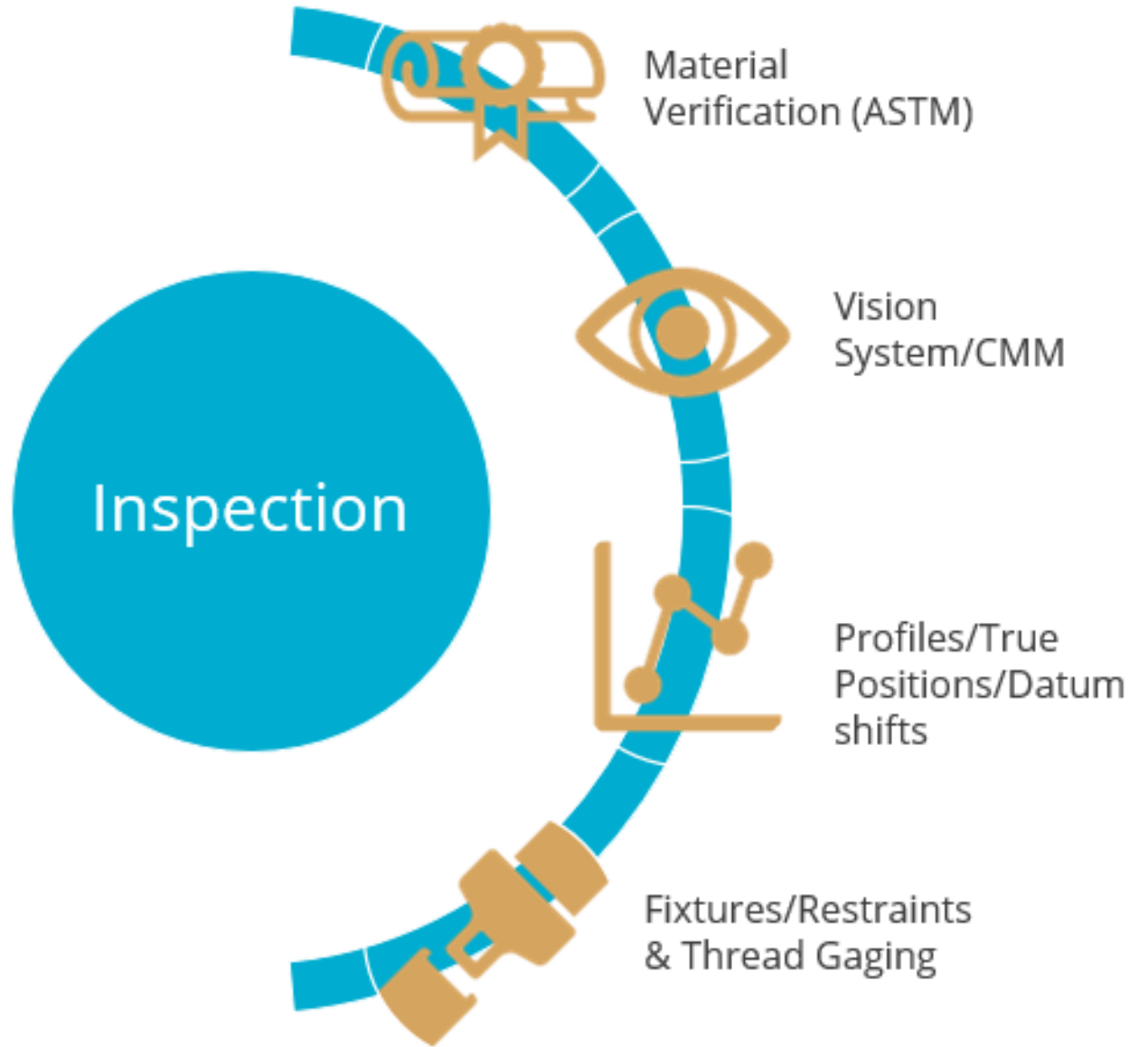
TECHNICAL CAPABILITIES



INSPECTION



Large and Small Envelope



ACCESS TO SUPPORT/ SUB-SUPPLIER CAPABILITIES



Heat Treatment/Annealing

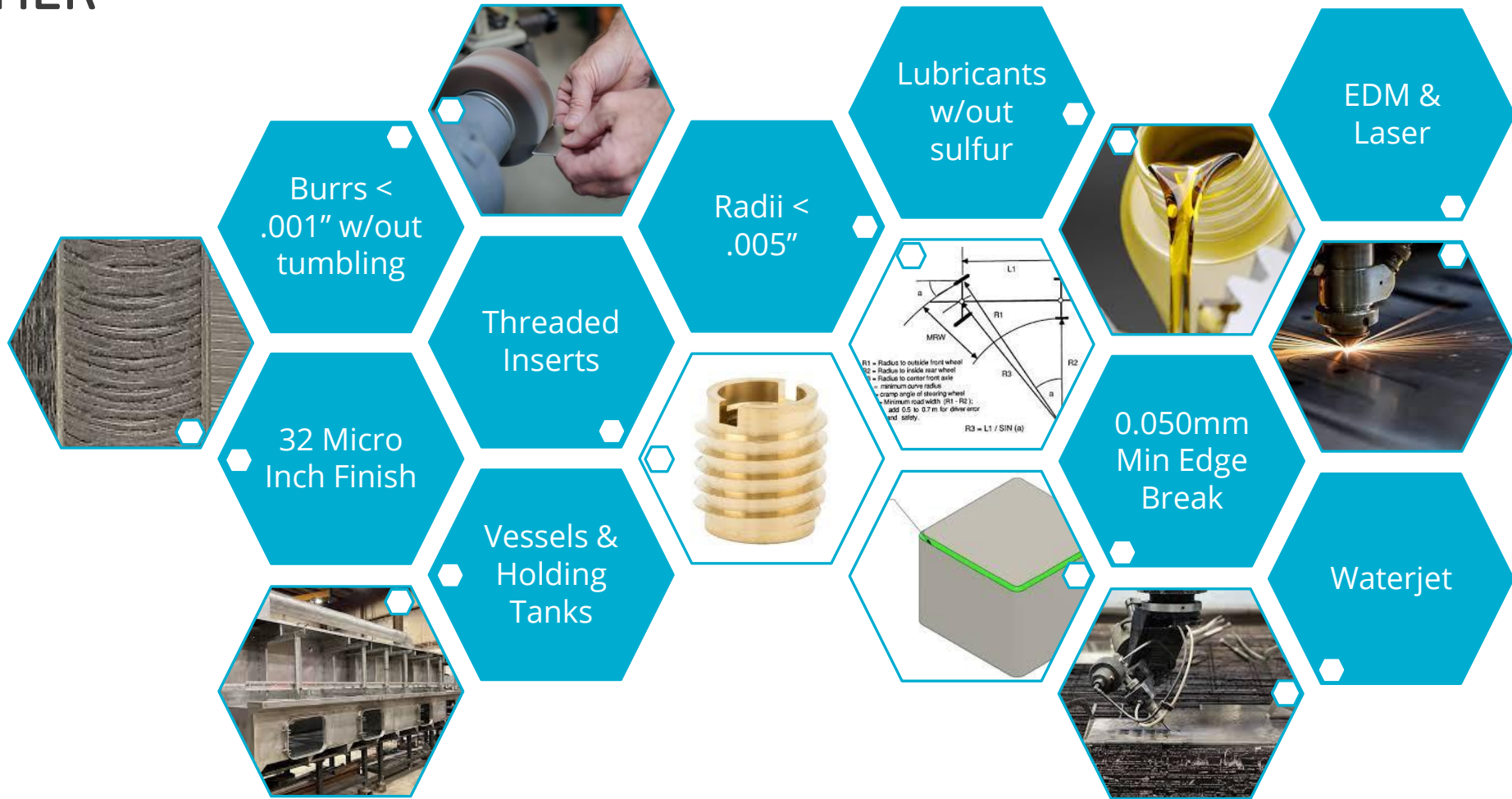


Conversion/Chromate Coat

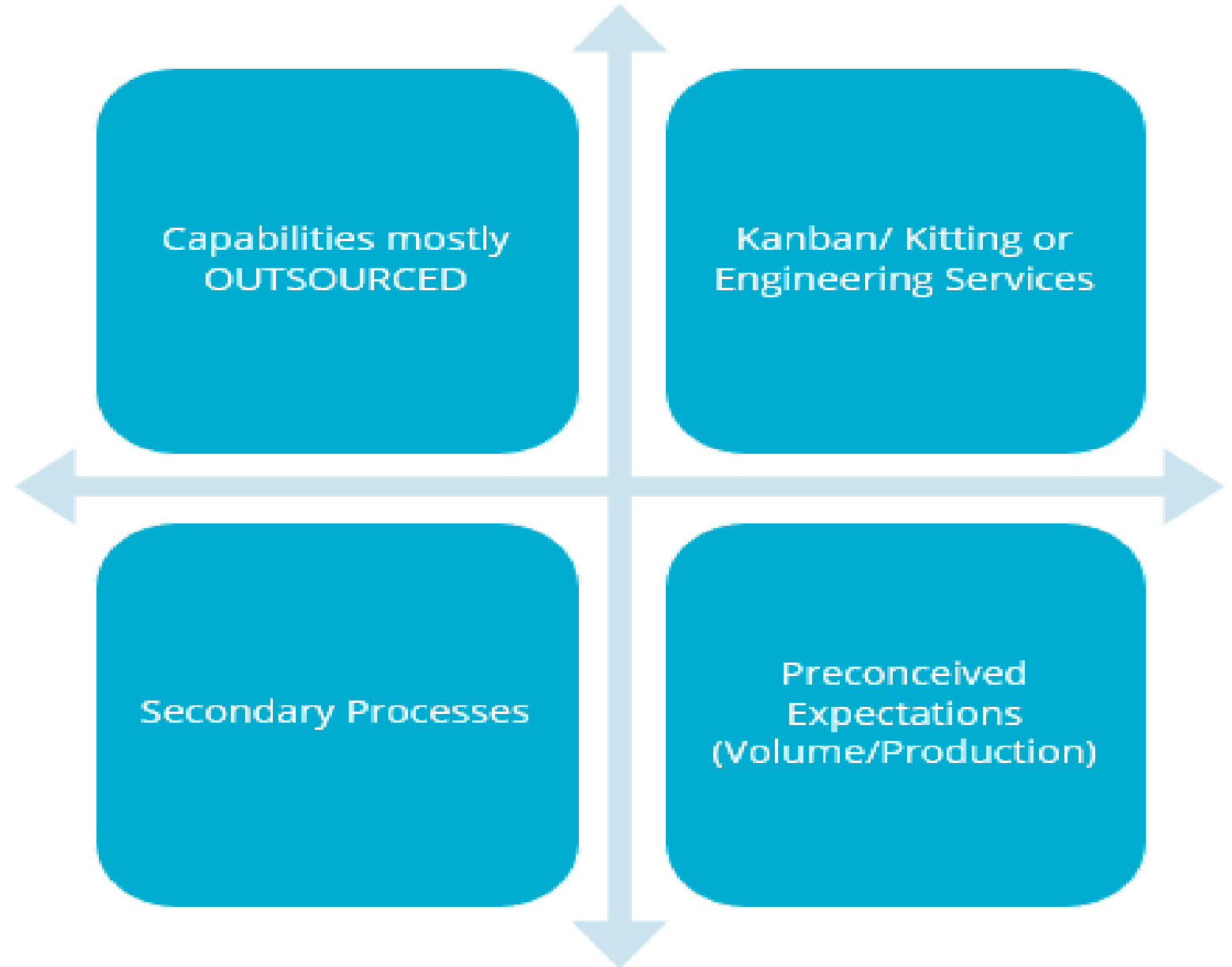
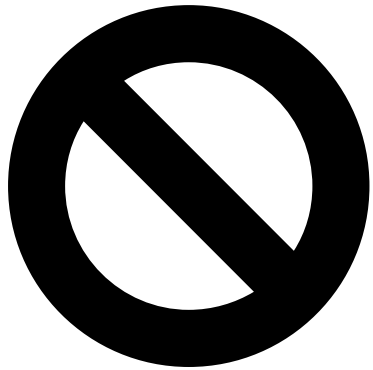


Powder Coating

PRECISION/ OTHER



WHAT ARE WE NOT LOOKING FOR???



LOW RISK SUPPLIERS



No foreign influences; Domestic raw materials



History of on-time delivery and hitting tolerances



Cybersecurity and Physical Security



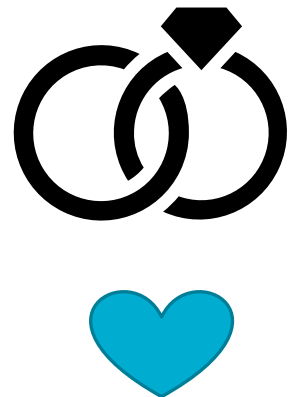
Quality Management System



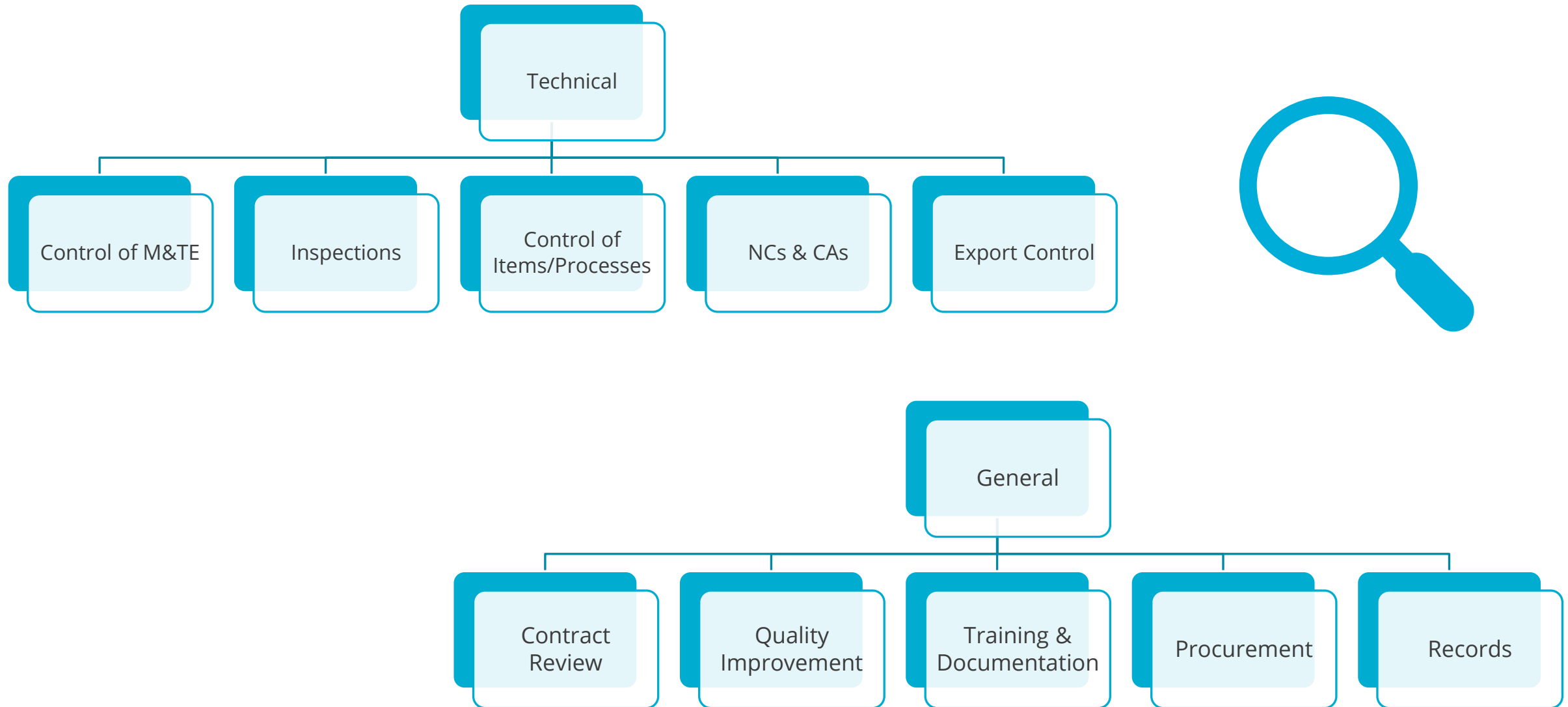
Communicative & Adaptive



ELEMENTS OF A ROBUST QUALITY MANAGEMEN SYSTEM



ELEMENTS OF A ROBUST QUALITY MANAGEMENT SYSTEM



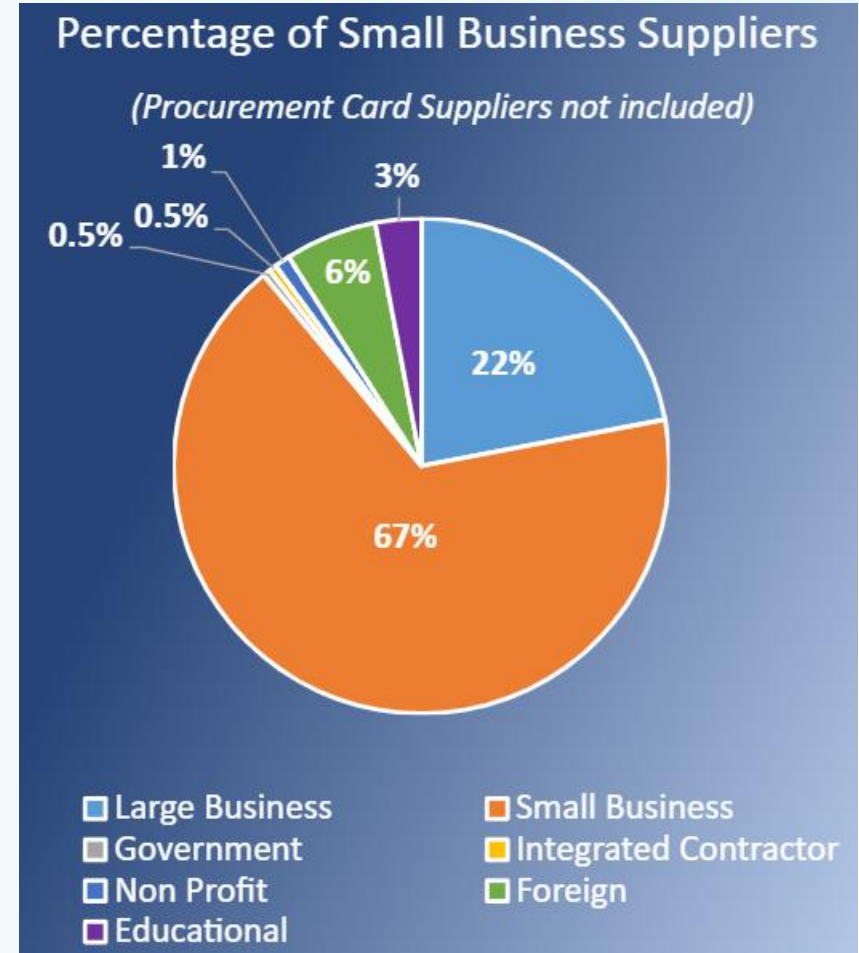


Sandia National Laboratories
Supplier Diversity Department

FY22 SMALL BUSINESS ACTIVITY

	Goal	% Achieved	\$ Achieved
Small Business	60%	66.38%	\$1.1B
Small Disadvantaged Business	15%	19.30%	\$321M
Woman-Owned Small Business	10.5%	12.74%	\$212M
HUBZone	4%	5.18%	\$86M
Veteran-Owned Small Business	7%	11.66%	\$194M
Service-Disabled Veteran-Owned SB	5.5%	8.17%	\$136M

Sandia has exceeded its small business goals for the 6th year in a row!



SANDIA'S TOP SUBCONTRACTING INDUSTRIES

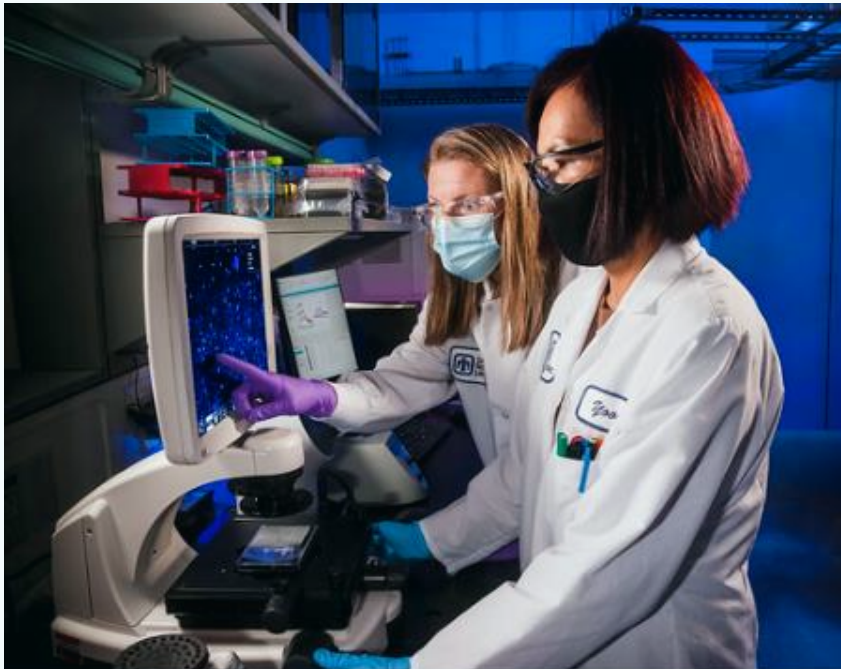
Computer Related Services

Research and Development in the Physical Engineering and Life Sciences

Commerical and Institutional Building Construction

Engineering Services

Electronic Computer Manufacturing



FY23 SMALL BUSINESS GOALS

Small Business Categories	Goals
Small Business	60.50%
Small Disadvantaged Business	15.50%
Woman-Owned Small Business	10.50%
HUBZone Small Business	4.00%
Veteran-Owned Small Business	7.00%
Service-Disabled Veteran-Owned Small Business	6.00%

REGISTER IN ISUPPLIER

Supplier Registration

Step 1: Access iSupplier Portal Registration Page

iSupplier Registration page: [Register here](#)

To register in Sandia's iSupplier Portal go to the Registration Page and fill out both of the required pages before clicking the register button.

IMPORTANT: Upon completion of the iSupplier registration you will receive an email containing a username and a temporary password. You will need to change your password within 3 days upon receipt of the email.

Step 2: Enter Company Name & Contact Information

To begin your company's registration, you must enter the required information:

- Legal Company Name
- Tax Country
- Non-US Tax Registration Number
- Federal Tax ID Number
- DUNS Number
- Additional Contact Information

CONTACTS

For questions regarding iSupplier Registration email: supreg@sandia.gov

For questions regarding existing iSupplier account concerns email: isupplier@sandia.gov

For assistance from our Supplier Diversity & Small Business Team email: supplier@sandia.gov

Questions for Electronic Invoicing email: invoice@sandia.gov

Questions regarding Payments or General Accounts payable email: aphelp@sandia.gov



VIEW & SUBSCRIBE TO THE BUSINESS OPPORTUNITIES WEBSITE



Sandia
National
Laboratories

iSupplier Portal

Close



Sandia Business Opportunities Website (BOW)

Information about Subscribing and Responding to BOW Postings

You must register as a Sandia supplier to respond to an opportunity or to subscribe to BOW postings. Use the "Register" link to register, which can take a few days. Once registered, use the "Login" link to log in.
[Register](#) [Login](#)

BOW List

Click the Id link in the first column to view details.

Id	NAICS	Posting Type	Posting Title	Posted	Posting Close	Competition Type
2617	332311: Prefabricated Metal Building and Component Manufacturing	RFQ	20' New High Cube Container with Double Door	22-Nov-2022	29-Nov-2022 10:32	Small Business First
2616	334417: Electronic Connector Manufacturing	RFQ	Electrical Measurement System	22-Nov-2022	29-Nov-2022 16:10	Set-Aside - Small Business
2613	561210: Facilities Support Services	Sources Sought	ISO 14001 Audit	22-Nov-2022	30-Nov-2022 11:14	Set-Aside - Small Business
2612	541519-2: Other Computer Related Services, Information Technology Value Added Resellers	Sources Sought	International Business Machine (IBM) Hardware, Software and Support Services	21-Nov-2022	29-Nov-2022 10:46	Set-Aside - Small Business
2611	541715-1: Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	Sources Sought	Computational Fluid Mechanics	18-Nov-2022	26-Nov-2022 15:53	Set-Aside - Small Business
2608	541612: Human Resources Consulting Services	Sources Sought	Organizational Development	16-Nov-2022	30-Nov-2022 15:43	Set-Aside - Small Business
2606	541612: Human Resources Consulting Services	Sources Sought	Management Coaching	16-Nov-2022	30-Nov-2022 15:42	Set-Aside - Small Business
2605	541612: Human Resources Consulting Services	Sources Sought	Executive Leadership Coaching	16-Nov-2022	30-Nov-2022 15:41	Set-Aside - Small Business
2604	334516: Analytical Laboratory Instrument Manufacturing	Sources Sought	Combined Reactive-Ion Etch and Plasma-Enhanced Chemical Vapor Deposition Package	16-Nov-2022	24-Nov-2022 14:49	Set-Aside - Small Business

OUTREACH EVENTS

Attend our Small Business Forums

Date	Focus	Location
November 29, 2022	Developing Manufacturing & Engineering Partnerships	El Paso, TX
May 17, 2023	Service-Disabled Veteran-Owned Small Business	Livermore, CA
August 29, 2023	Partnership with DOE OSDBU & Local Small Business Resources	Albuquerque, NM

Request a Virtual, 30 Minute 1:1 Supplier Engagement

- Hosted every 3rd Wednesday of the Month
- Email supplier@sandia.gov

Questions? Email: supplier@sandia.gov





Ryan Williamson

Waste Isolation Pilot Plant (WIPP)
Small Business Program Manager

WIPP is a National Solution

America's only deep geologic repository for the permanent disposal of defense-generated transuranic (TRU) radioactive waste

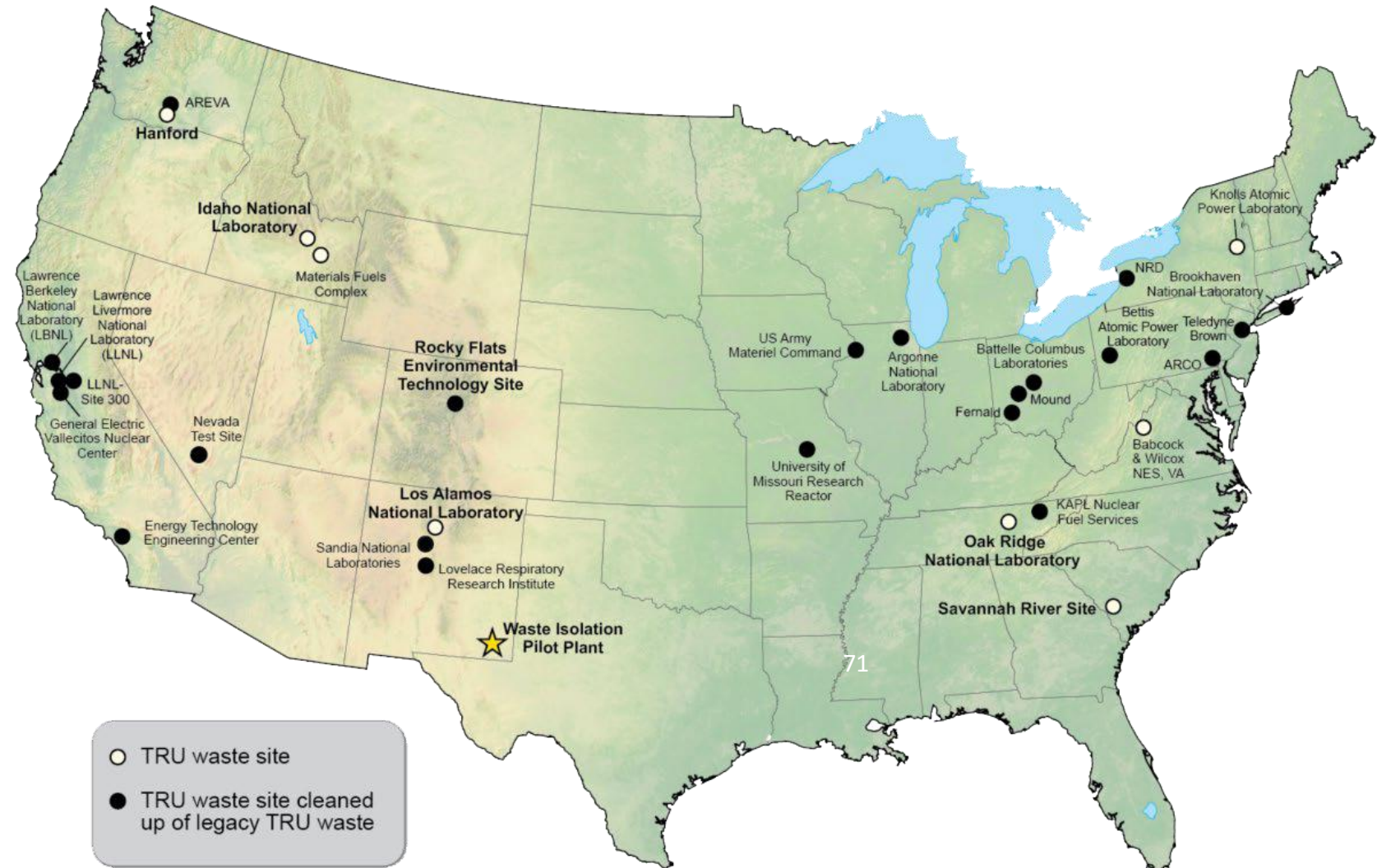
Owned by the U.S. Department of Energy and managed and operated by contractor Nuclear Waste Partnership (NWP)



National Cleanup Mission

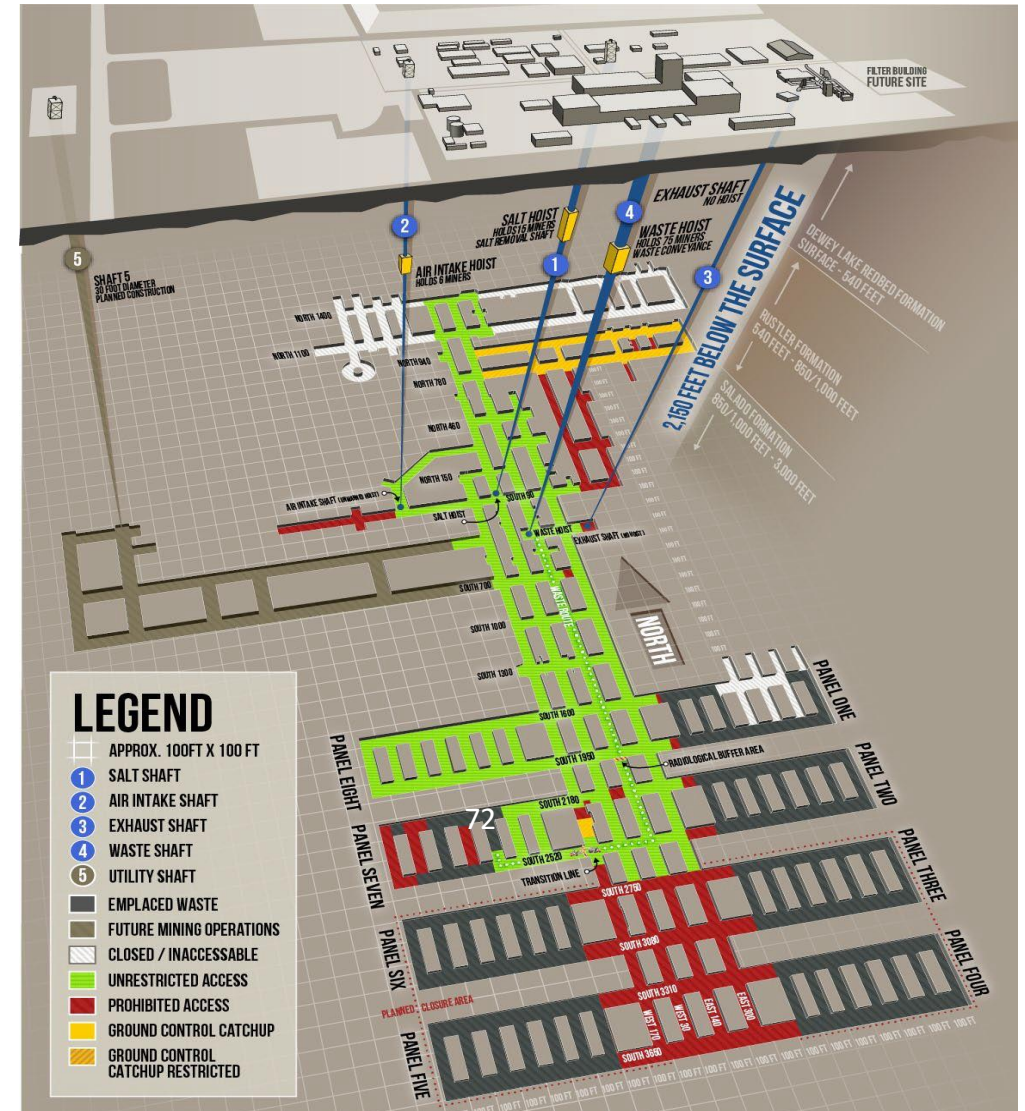
Total number of TRU waste sites cleaned up to date:

22



Repository

- 2,150 feet deep
- Eight disposal panels
- Four vertical shafts
- Controlled ventilation
- North Experimental Area



Mining

- Underground excavation began in 1982
- More than 12 miles of drift are mined underground



Disposal

- More than 3.4 million ft³ of waste disposed
- More than 269,360 waste containers underground



Preparing for Opportunities at WIPP

- Selected Opportunities Posted to WIPP Website
 - Website: <http://www.wipp.energy.gov/nwp-procurement.asp>
 - Sources Sought listings
 - Open Requests for Proposals

- Complete a NWP Supplier Application
 - Include all requested information
 - List applicable North American Industry Classification Codes (NAICS)

- Register in SAM.GOV
 - Make sure information in SAM.GOV is consistent with what is on your NWP Supplier Application

WIPP Procurement Page

Procurement

Opportunities

Sources Sought

Open Requests for Proposals

NWP General Terms & Conditions for Commercial Items (4-19, Rev. 5)

NWP General Provisions for Cost Reimbursement Contracts (GP/CR 12-20, Rev. 5)

NWP General Provisions for Firm Fixed Price Construction Subcontracts (11-21, Rev. 9)

NWP General Provisions for Firm Fixed Price Orders (12-20, Rev. 7)

Representations and Certifications Greater than \$25,000

Approval/Variation Transmittal Register

Approval/Variation Request (May 2013 form)

Approval/Variation Request Comment Sheet

NWP Supplier Application

<https://wipp.energy.gov/nwp-procurement.asp>

Top Subcontracting Categories in FY 2022

<u>NAICS</u>	<u>Category Description</u>
■ 238910	Site Preparation Contractors
■ 561320	Temporary Help Services
■ 332999	All Other Miscellaneous Fabricated Metal Product Manufacturing
■ 541330	Engineering Services
■ 334519	Other Measuring and Controlling Device Manufacturing
■ 332439	Other Metal Container Manufacturing
■ 541620	Environmental Consulting Services
■ 541611	Administrative Management and General Management Consulting Services
■ 333924	Industrial Truck, Tractor, Trailer and Stacker Machinery Manufacturing
■ 333413	Industrial and Commercial Fan and Blower and Air Purification Equipment Manufacturing

Major Activities at WIPP

- New Construction
- Infrastructure Projects



Looking Ahead



Current investments to improve infrastructure (next few years)

- 2023 – 19 projects (Electrical capacity/Solar Array, Contact-Handled/Remote-Handled)

Planned investments (longer term)

- New buildings





Denise Avila

The Borderplex Alliance of El Paso
Director of Strategic Initiatives



THE BORDERPLEX ALLIANCE

WHO ARE WE

The Borderplex Alliance is an award-winning economic development and policy advocacy organization. The Alliance is independent, non-partisan, and private sector-led. Our mission is to bring jobs, hope, and opportunity to the region.

- Funded and Led by the Private Sector
- Partners with Community and Regional Organizations
- Focused on Business Recruitment, Expansion and Retention
- Provides Regional Advocacy

WHAT WE DO

The Borderplex Alliance helps potential investors get acquainted with the region by offering:

 Regional Briefings	 Site Selection Analysis	 Industrial Tours
 Connection to decision makers	 Strategy	 Advocacy
 Data Analysis	 Incentive Structure + Analysis	 Business Consultations

PAST PROJECTS



SINCE 2013

The Borderplex Alliance has helped bring **OVER 20,000 JOBS** and **\$1.4 BILLION IN INVESTMENT** to the Borderplex Region.

RECENT RECOGNITIONS



Economic Development Organization of the Year

International Economic Development Council



Community Economic Development Award

Texas Economic Development Council



Moving Forward Award

El Paso Hispanic Chamber of Commerce

RECENT EXPANSIONS



“I can confidently say that there is no place that compares to the El Paso region. Our El Paso operation acts as a **model plant** to the whole Eaton system. Here, we experience **low turnover** and a **continual increase in output**, week over week. We are very pleased with our decision to have recently expanded our manufacturing footprint to El Paso.”

- Alex Mora, **Site Executive at Eaton**



EXISTING OPERATIONS



The Borderplex Alliance 2025 ASCEND PLAN

QUICK FACTS

OVERVIEW

- 32 Goals, 139 Actions (28% complete)
- A Regional Focus – working across borders for collective prosperity
- Addresses shared regional priorities (developed via survey)
- Sets target industries and illuminates emerging opportunities

THE TOP 5 ECONOMIC DEVELOPMENT PRIORITIES

- 1.1) Business attraction, retention and expansion
- 2.2) New business creation
- 3.3) International trade promotion
- 4.4) Increasing wages
- 5.5) Improving the quality of life

The Borderplex Alliance

BUYER – SUPPLIER PROGRAM

OUR MISSION

The mission of Borderplex Buyer - Supplier Connections is to Introduce and connect regional suppliers and large manufacturing companies.

**The Borderplex Alliance aims to be your go-to buyer/supplier connector. We do not endorse any particular buyer or supplier.*

BENEFITS

Create awareness of the local suppliers in the region for buyers

Helps buyers meet or exceed diversity goals

Reduces buyers lead time for delivery

Identify customer opportunities for local suppliers

HOW TO CONNECT*

Virtual presentation by buyer with suppliers invited

In person small meeting with a few, select suppliers

Small speed dating event (timed, tailored with special invitations)

Supplier/Buyer Summit

The Borderplex Alliance

BUYER – SUPPLIER PROGRAM

WHAT MAKES US DIFFERENT?

- Personalized connections with buyers
- Introductions tailored to your company's needs
- Data base of vetted suppliers
- No time investing required
- Follow ups to assure your company was able to connect with the suppliers

Exceptional service in the national interest

