

Department of the Air Force

Eielson AFB Microreactor Pilot Pre-Proposal Conference



12 October 2022

Department of the Air Force

Welcome & Kickoff



**Ms. Ashley Sadorra, CTR
Office of Deputy Assistant Secretary of
the Air Force for Environment, Safety
and Infrastructure (SAF/IEE Energy)**



Agenda

0900-0930

Registration Opens

Attendees process through base security and travel to Eielson AFB (Yukon Club)

0930-0935

Welcome & Kickoff, Administration

Ms. Judith Willis, Office of Deputy Assistant Secretary of the Air Force for Environment, Safety and Infrastructure (SAF/IEE Energy) (5 mins)

0935-1005

Eielson AFB Microreactor Pilot Overview

Ms. Nancy Balkus, Deputy Assistant Secretary of the Air Force for Environment, Safety and Infrastructure (SAF/IEE) - Opening Remarks (5 mins)

Col Tony Alvarado, 354 MSG/CC - Mission Brief (15 mins)

Lt Col Christopher Higgins & Ms. Alexa Greene, 354 CES - Siting & Environmental Brief (10 mins)

1005-1115

RFP Scope of Work & Land Lease Focused Presentation

Ms. Charlene Woods, DLA Energy - RFP Scope (45 mins)

Mr. Tom Brown, Air Force Civil Engineer Center, Installations Directorate (AFCEC/CID) - Real Estate Brief (10 mins)

Mr. David Mairs, Air Force Civil Engineer Center, Installations Directorate (AFCEC/CIU) - Lease Brief (10 mins)



Agenda

-
- | | |
|-----------|---|
| 1115-1230 | General Questions from the Audience & Networking Opportunity
<i>Questions to be Recorded</i>
<i>Ms. Charlene Woods, DLA Energy</i> |
| 1230-1400 | Lunch Break |
| 1400-1600 | Coal Plant Overview & Site Visit
<i>Bus Tour of available land lease sites, power control center (operations room), & coal plant</i>
<i><u>Guide:</u> Lt Col Christopher Higgins, 354 CES/CC</i> |
| 1600-1615 | Break
<i>(Yukon Club)</i> |
| 1615-1655 | Open Forum for Questions
<i>Questions to be Recorded</i>
<i>Ms. Charlene Woods, DLA Energy; Ms. Judith Willis, SAF/IEE Energy; Mr. David Mairs, AFCEC/CIU;</i>
<i>Ms. Leslie Brown, SAF/GCN; & Lt Col Christopher Higgins, 354 CES/CC</i> |
| 1655-1700 | Closing Remarks & Conference Conclusion
<i>Ms. Nancy Balkus, SAF/IEE</i> |
-

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Speaker Introductions:

Ms. Nancy Balkus

Deputy Assistant Secretary of the Air Force for Environment, Safety and Infrastructure (SAF/IEE)



Department of the Air Force

Speaker Introductions:

Col Tony Alvarado

354 MSG/CC



Department of the Air Force

Speaker Introductions:

***Lt Col Christopher Higgins & Ms. Alexa
Greene***

354 CES



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Speaker Introductions:

Ms. Charlene Woods

DLA Energy



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Speaker Introductions:

Mr. Tom Brown

Air Force Civil Engineer Center, Installations Directorate (AFCEC/CID)



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Speaker Introductions:

Mr. David Mairs

Air Force Civil Engineer Center, Installations Directorate (AFCEC/CIU)



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Eielson AFB Microreactor Pilot Overview



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Opening Remarks



**Ms. Nancy Balkus
Deputy Assistant Secretary of the Air
Force for Environment, Safety and
Infrastructure**

EIELSON AFB, ALASKA



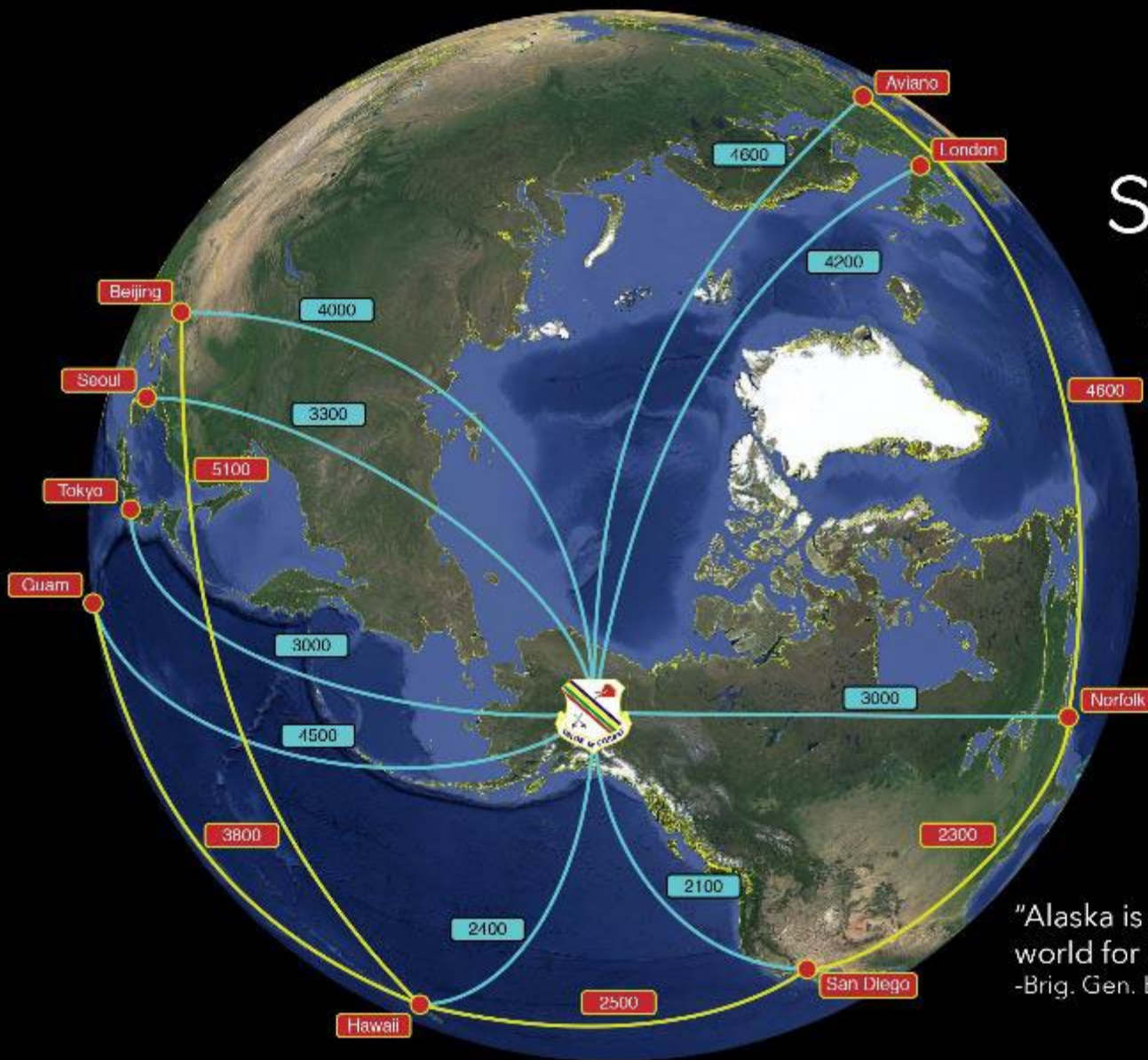
354 FW Mission Brief

Valor in Combat

Why Are We Here?



ALASKA'S STRATEGIC LOCATION



"Alaska is the most central place in the world for aircraft operations."
-Brig. Gen. Billy Mitchell, 1935

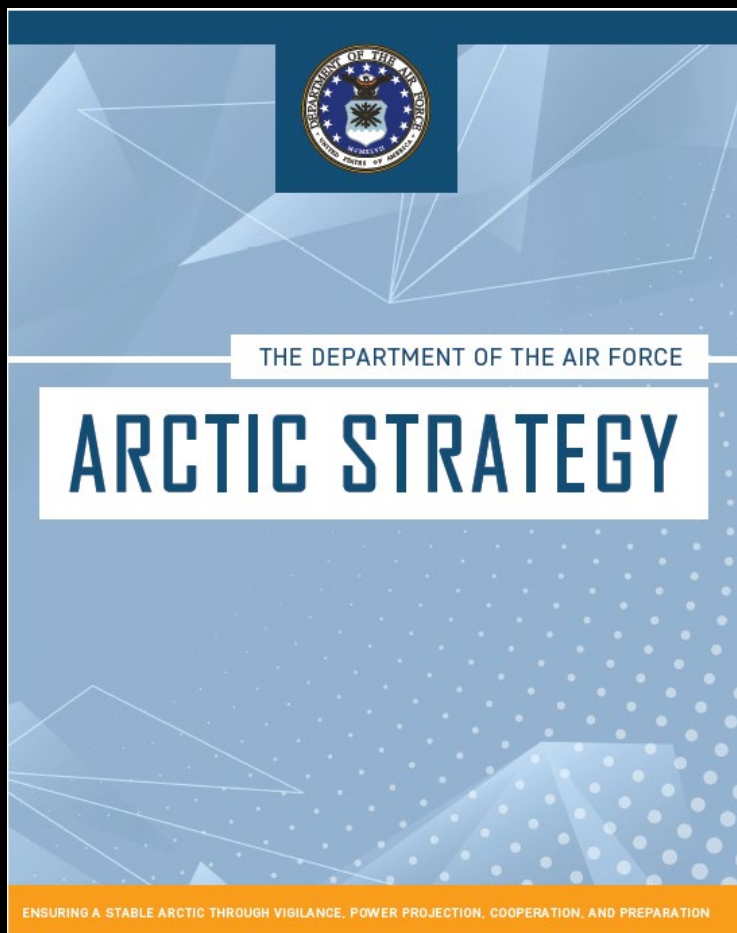
2022 National Defense Strategy

*“The Department will act urgently to sustain and strengthen deterrence, with the People’s Republic of China (PRC) as our **most consequential strategic competitor and the pacing challenge for the Department**”*

DEFENSE OBJECTIVES

- Defending the homeland
- Deterring strategic attacks
- Deterring aggression, prioritizing the PRC challenge in the Indo-Pacific
- Building a resilient Joint Force and defense ecosystem

2020 USAF Arctic Strategy



“Russia is an Arctic nation...China is not an Arctic nation.

“As strategic as the Arctic is to power projection, it is equally critical to deterrence and U.S. defense.”

Enhance. A Closer Look at our Infrastructure



**~ 200 Billeting &
Temp Dorm Rooms**



**Central Heating
& Power Plant**



**Joint Mobility
Center**



**48M Gallon JP-8
Storage Capacity**

Ramp Space for 160+ Fighter Aircraft

14,500' Runway

**40+ Heavy Aircraft
Or Bombers**



Who We Are – Our Team and Demographics



■ Active Duty:	3,151
■ Family Members:	6,479
■ Civilians & Contractors	3,426
■ Tenant Units	77
■ Retirees	2,391
■ Yearly Economic impact:	\$1.2B

CAO 25 May 2022



Our Partners on Eielson



168th Wing



210th Rescue Squadron



**Det 460 Air Force Technical Applications Center
(AFTAC)**



66th Training Squadron

354th Fighter Wing Mission

Mission

- The 354th FW provides USINDOPACOM combat-ready fifth-generation airpower, advanced airpower integration training, and strategic arctic airpower basing.

Vision

- The world's premier fighter wing—ready to compete, deter, and win the high-end fight with a diverse, ready, innovative, and lethal force!

Deploy, Train, Project

354th Fighter Wing LOEs

Deploy

Deploy Lethal Fifth Generation Combat Airpower

Train

Train Advanced Airpower Operations

Project

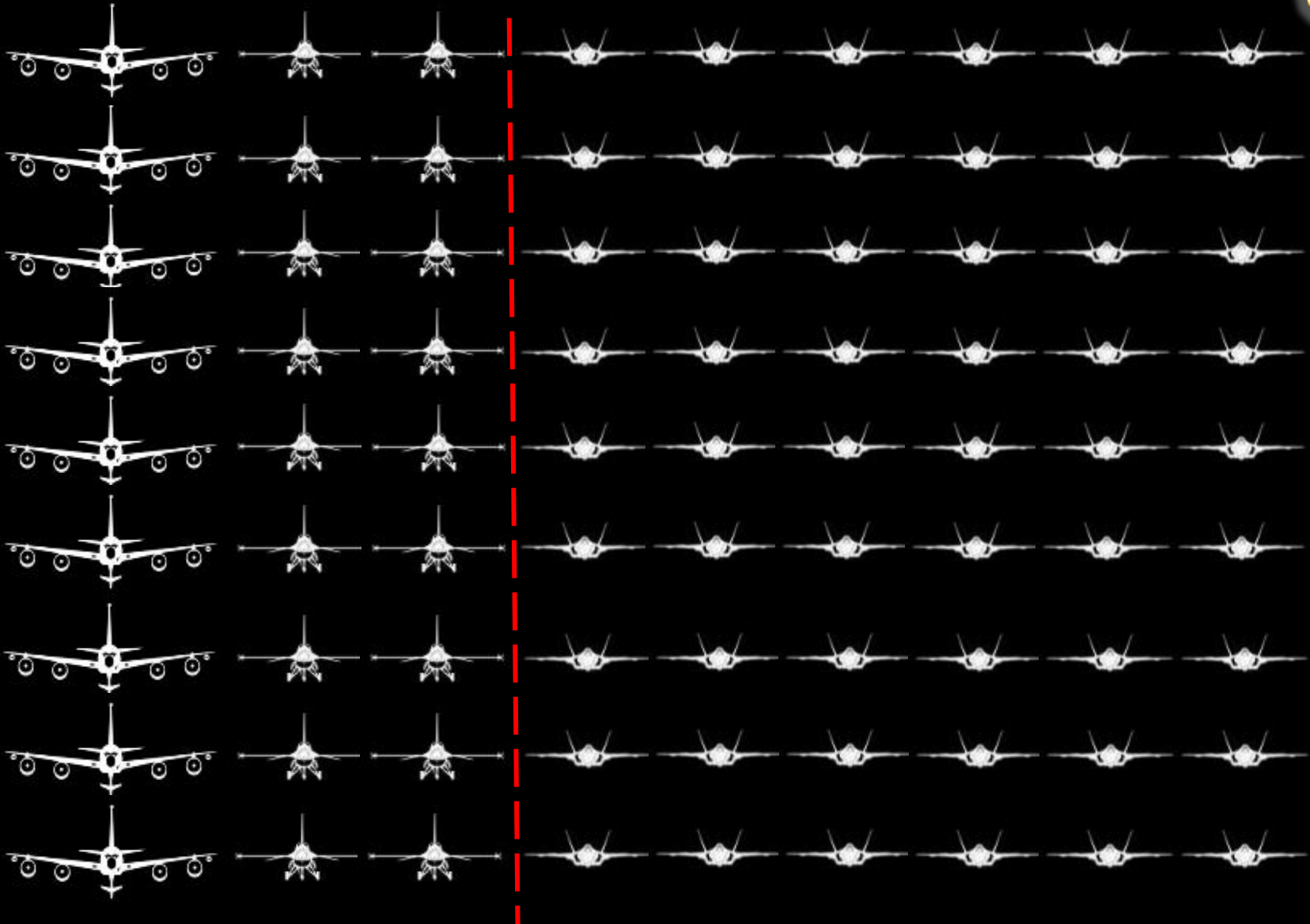
Project Strategic Airpower

Deploy, Train, Project

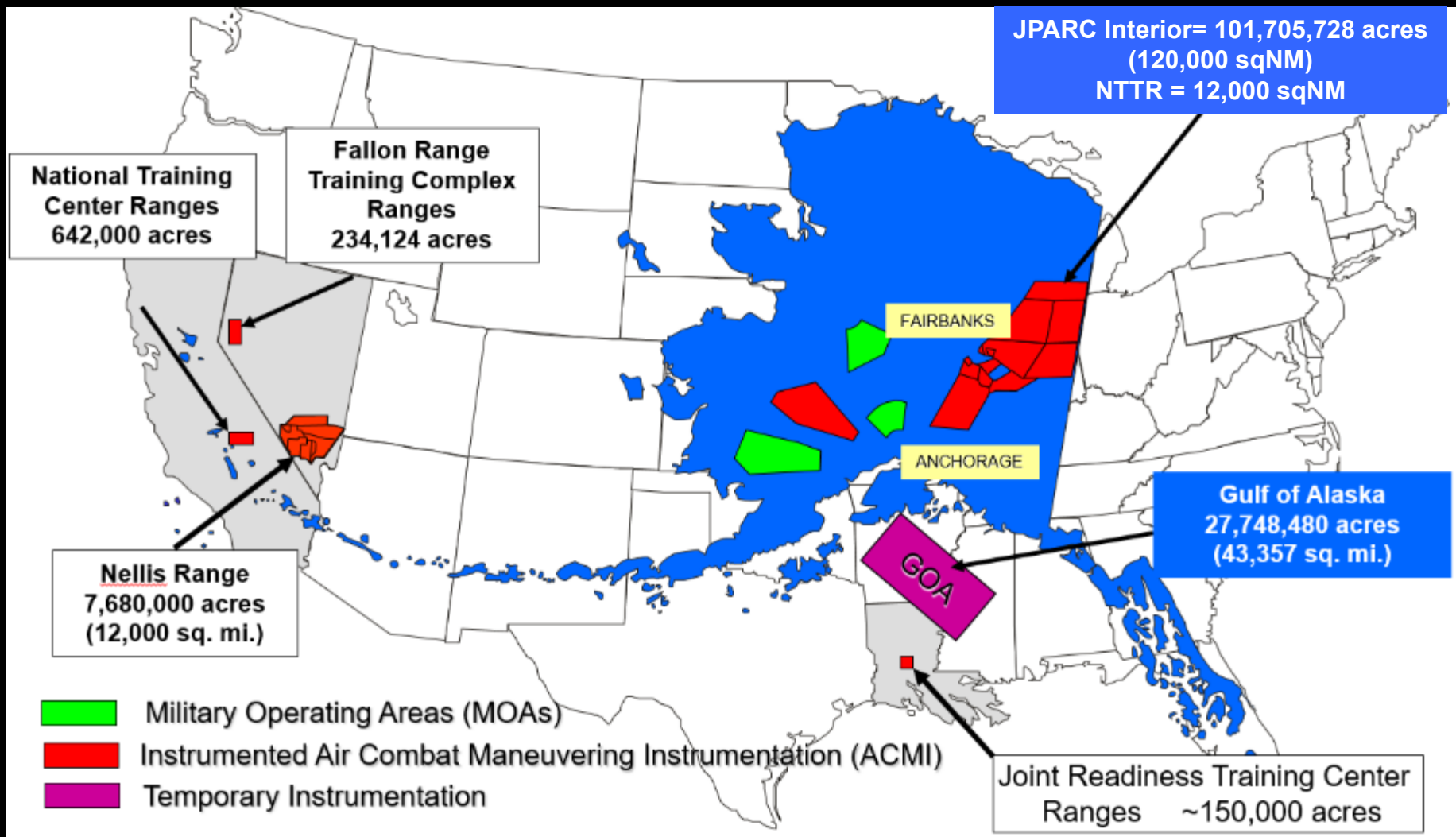
Deliver F-35 Combat Capability



Eielson Aircraft: 2020 to 2022



Train and Integrate Advanced Operations



Train and Integrate Advanced Operations



Cope North



Red Flag Alaska



Valiant Shield

Project Strategic Airpower



Heritage of Eielson & Pioneers Before Us



EIELSON AFB, ALASKA



Valor in Combat!

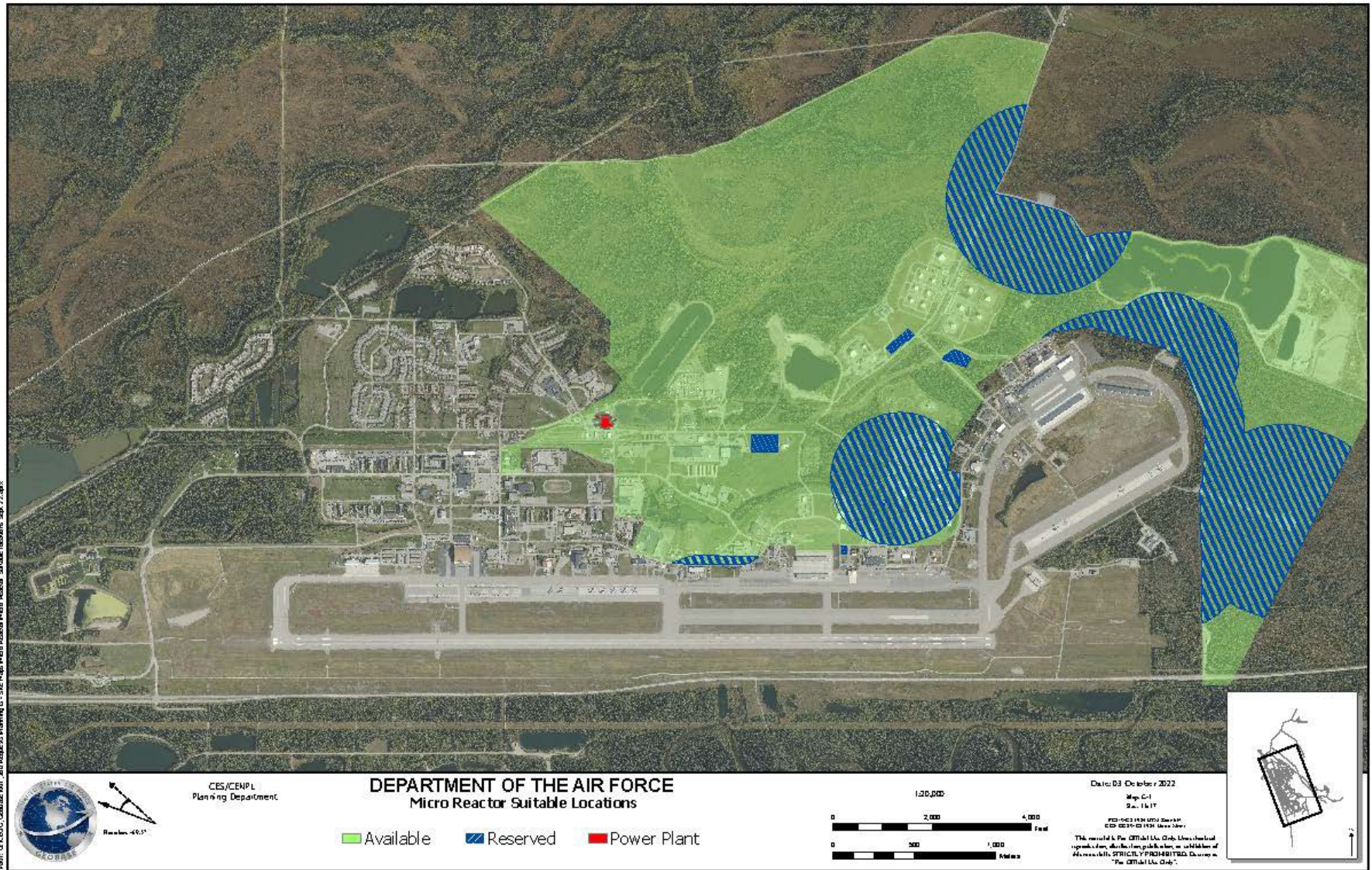


Siting & Environmental

Mrs. Alexa Greene, 354 CES
12 October 2022



Overall Potential Site Area





Site Conditions

■ Wetlands:

- Much of the open area behind the cooling pond and tank farms are wetlands and/or within the 100-yr floodplain.

■ Contamination:

- PFAS plume exists from the outer edge of the tank farm to the west/northwest in groundwater. Recently, EPA just issued updated draft LHA values for PFOA and PFOS, which lowers it down to a nearly non-detect level.
- If siting is selected down in the main industrial areas, work plans and saps will be required as there are multiple overlying contaminated sites in most of the green regions. Consider innovative construction and building up versus out in this area.
- Green regions to the east end of the flightline are less likely to be impacted by contamination in groundwater and soil. If the site is selected in this region, we will need to verify that the plume hasn't changed for PFAS in this direction.
- Part of the green region going north towards Quarry hill may be viable as there is limited contamination in this zone (most of it is near the explosive quantity distance arc).

■ Other:

- The area around the schools and the power plant frequently have intense fogging in the winter due to the moisture in the emissions from the power plant

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RFP Scope of Work & Land Lease Focused Presentation





DLA Energy Installation Energy Eielson AFB Pre- Proposal Conference Small Micro-Reactor (SMR)

Charlene Woods
Contract Specialist
October 12, 2022





Agenda

- Who we are and our mission
- DLA Energy Installation Energy contract programs
- SMR General requirements
- Request for Proposal overview
- Milestones
- Points of Contact



DLA Energy Overview

- Mission: To enable mission readiness by providing globally resilient energy solutions to the Warfighter and Whole of Government
- Vision: The trusted leader in innovative energy solutions aligned with the speed of change.



DLA Energy Installation Energy

- Actively administering over \$5.0 billion in natural gas, electricity, coal, large scale renewable energy and Energy Savings Performance Contracts for over 200 customers (DoD and Federal Civilian)
- Major focus areas include:
 - Execution of resilient energy and energy conservation requirements utilizing power purchase agreements, ESPCs and UESCs
 - Execution of agreements for implementation of electricity demand response at federal facilities
 - Transitioning portfolio to carbon pollution-free electricity (CFE)



SMR General Requirements

- Fixed-site micro-reactor to deliver 1-5MW of power for no less than 2 years without refueling
- Be licensed by NRC prior to operation
- Operate in subarctic climate at AF installation in Alaska. Meet all Federal and State environmental laws and regulations
- Contract period: up to 30 years
- Interconnect with existing infrastructure
- Meet NIST, DoD and other cybersecurity standards

Eielson AFB was selected in part due to its resilient power needs for mission assurance, limited access to clean energy, existing energy infrastructure and compatible climate.



Request for Proposal

- Resilient Energy Supply Agreement for the provisioning, production, purchase and delivery of electricity and steam generated by an on-site Small Modular Reactor at Eielson AFB
 - Contractor procures/finances/installs/owns/operates/maintains the energy production facility
 - Government purchases electricity and steam at fixed price per kWh/per Mlbs.
 - 20-year generation/purchase term; seven (7) year construction period and three (3) year demolition period
 - Use of property conveyed via separate real estate agreement



Request for Proposal

<i>Contract Estimated Summary</i>					
CLIN#	Supplies	Contract purchase and delivery term (in years)**	Total estimated quantity	Annual estimated quantity	Total estimated contract \$ value
0001	Delivered electricity	20	788,400,000 kWh	43,800,000 kWhs	TBD
0002	Steam	20	10,160,000 Mlbs	508,000 Mlbs	TBD
0003	Rental Credit	30			\$73,162.50*

- Government estimates the project size: 5 MW



Request for Proposal

- Includes Interconnection Discussions with Golden Valley Electric Association
- Requirements for construction will adhere to Code of Federal Regulations, Title 10-Energy for nuclear development
- Developer will work with NRC on NEPA, licensing and testing for operating permit.
 - Will be included in executed contract
- Energy security and resilience included
- General Terms and Conditions outlined within the RFP
 - Contractor-specific T&Cs can be submitted with the proposal for government's review and consideration
- Only the Contracting Officer can affect changes



Request for Proposal

- The proposed evaluation factors are:
 - Factor 1: Technical Approach
 - Factor 2: Technical Risk
 - Factor 3: Past Performance
 - Factor 4: Price
- Non-price evaluation factors are listed in descending order of importance. When combined, the non-price evaluation factors are approximately equal in importance as price.



Request for Proposal

- Providers shall prepare the proposal according to the titles and page limits of each volume described below:

Volume	Title	Maximum Page Limit
I	Technical Proposal	50 pages
II	Past Performance	10 pages
III	Price Proposal	None
IV	Contract Documentation	None

- Offeror shall prepare and submit one hard copy of Volumes I through IV of its proposal in separate three-ring binders and an electronic version.
 - Price proposal files shall be submitted in PDF format & text searchable
- All amendments must be signed and returned.



Milestones

- RFP issuance: September 26, 2022
- Pre-proposal conference: October 12, 2022
- Cut-off for RFP questions: November 15, 2022
- RFP closing: November 29, 2022, 14:00 EST
- Any proposal received after this time is considered late and will not be accepted.
- Issue Notice of Intent of Award: est. June 2023



Points of Contact

- DLA Energy Installation Energy, Fort Belvoir, VA
- Andrea Kincaid, 571.363.8231, andrea.kincaid@dla.mil
- Charlene Woods, 571.767.8583, charlene.woods@dla.mil



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Real Estate Brief



Mr. Tom Brown
Air Force Civil Engineer Center,
Installations Directorate (AFCEC/CID)

Air Force Civil Engineer Center



***Nuclear Microreactor
Energy Assurance
Lease Opportunity at
Eielson AFB, AK***

**Dave Mairs
AFCEC/CIUE
13 Oct 22**

Battle Ready... Built Right!



Purpose



To provide information about the Air Force Enhanced Use Lease and Energy Assurance Lease (EAL) program



Overview



- **EUL/EAL Program Goal / Objectives**
- **What is an EUL/EAL**
- **AF EUL/EAL Program**
- **Benefits and Successes**
- **EUL/EAL Solicitation**
- **Qualified Lessee Selection**
- **Keys to Success**
- **Summary**



What is an EUL/EAL?



- **An EUL/EAL is a lease agreement between the Air Force (AF) and a third-party for the development of non-excess, underutilized AF-managed land located at an AF installation; leased installation property must be Federally-owned**
 - **Lessee is responsible** for project utilities, infrastructure and services and may be taxed by state and local governments
 - **Developer (lessee) is responsible for design, construction, maintenance and operation of improvements to the leased property**
 - **DAF receives cash rent payments and In-kind consideration (IKC) in return for right to develop leased property (greater than appraised Fair Market Value)**
- **Energy Assurance Leases (EALs) are executed under the EUL program**



AF EUL/EAL Program



- ***Goal of AF EUL Program: Monetize non-excess AF real estate where and when it makes sense***
 - Maximize benefit/return to AF
 - Compatibility with AF mission required
 - Long-term project viability – must be self-sustaining from an operations and maintenance stand point.
 - Identifies and develops real property value-based transactions (VBTs), EULs and EALs and manages the portfolio
 - Provides long-term oversight to ensure both the AF and Lessee comply with statutory requirements of 10 USC § 2667 and lease documents
 - ***Goal of AF EALs: to provide installations with energy security and resiliency ensuring a reliable source of power during emergencies and power outages***
- Commercial and/or Private Partnership Required!**

Your Success is Our Mission!



Benefits



■ Air Force

- EULs - Consideration (cash rent) can be used to recapitalize AF facilities and infrastructure while supporting AF initiatives
 - Can reduce installation operating costs
- EALs - AF receives energy resiliency or other energy related benefits
- EULs and EALs - Facilitate community collaboration and relations

■ Developer

- Financially beneficial business deal
- Potential tax incentives and proximity to utilities
- Ensures a single and stable Lessee and ensures project site security with installation security
- Generates and sells power to the Air Force

■ Local Community and State

- Supports base, local, and State economic development; increases tax base (EULs and EALs) and generates jobs

Your Success is Our Mission!



Successes



■ Commercial EUL projects in the AF portfolio

- Hotels
- Business Parks
- Sports Complex
- Solar photovoltaic solar arrays
- Waste Reclamation Facilities
- Mixed-use commercial

■ IKC received by AF installations

- Fitness Center - Nellis AFB, NV
- Security Gate - Hill AFB, UT
- Security Forces Bldg - Hill AFB, UT
- Fire Fighting Training Facility - Eglin AFB, FL
- Joint use airport - Eglin AFB, FL
- Sustainment, repair and maintenance (SRM) projects – multiple bases
- Energy Resiliency (first right to power in emergencies and power outages) - Tyndall AFB, FL



Your Success is Our Mission!



Summary



- **Goal of AF EUL and EAL Program:**
 - **EULs: Monetize non-excess AF real estate where and when it makes sense**
 - **EALs: Energy resiliency via first right to back up power during emergencies or power outages and/or other energy-related benefits**
- **Projects involve the lease of Government-owned and AF-managed real estate to a private developer or utility company for commercial development in return for energy resiliency**



Contact Information



EUL Program Contacts:

- **Mr. Dave Mairs, Program Manager**
EUL Execution Branch, Real Estate Development Division
Air Force Civil Engineer Center (AFCEC/CIUE)
Email: david.mairs@us.af.mil
Telephone: 361-290-3400
- **Ms. Julia Cantrell**
Chief, EUL Execution Branch, Real Estate Development Division
Air Force Civil Engineer Center (AFCEC/CIUE)
Email: julia.cantrell@us.af.mil
Telephone: 210-322-4699



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Questions & Networking



Ms. Charlene Woods
DLA Energy

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Lunch Break

1230-1400



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Coal Plant Overview



Eielson AFB's Central Heat & Power Plant

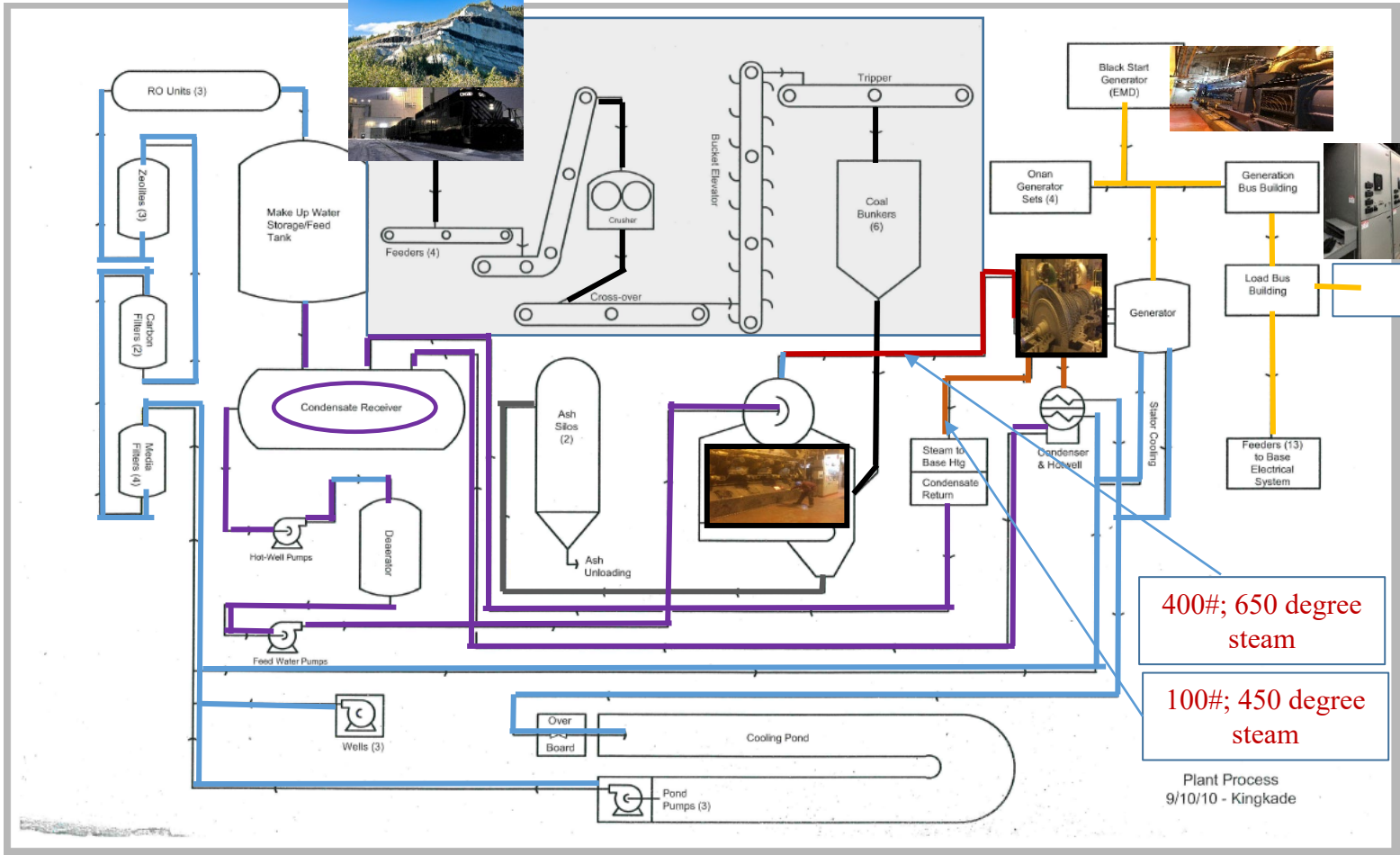


Eielson AFB's Central Heat & Power Plant

Process Overview



GVEA



400#; 650 degree
steam

100#; 450 degree
steam

Plant Process
9/10/10 - Kingkade

Eielson AFB's Central Heat & Power Plant

Plant Layout - Staffing



Operations (1 Supv)

(5 Person Ops Crew 24/7)

Boiler Side

3 Positions Required by AFI 36-1068

- 1 – WG-10 Boiler Operator
- 1 – WG-08 Boiler Ops Asst
- 1 – WG-05 Ash Puller

TG Side

- 1 – WG-10 Power Cont

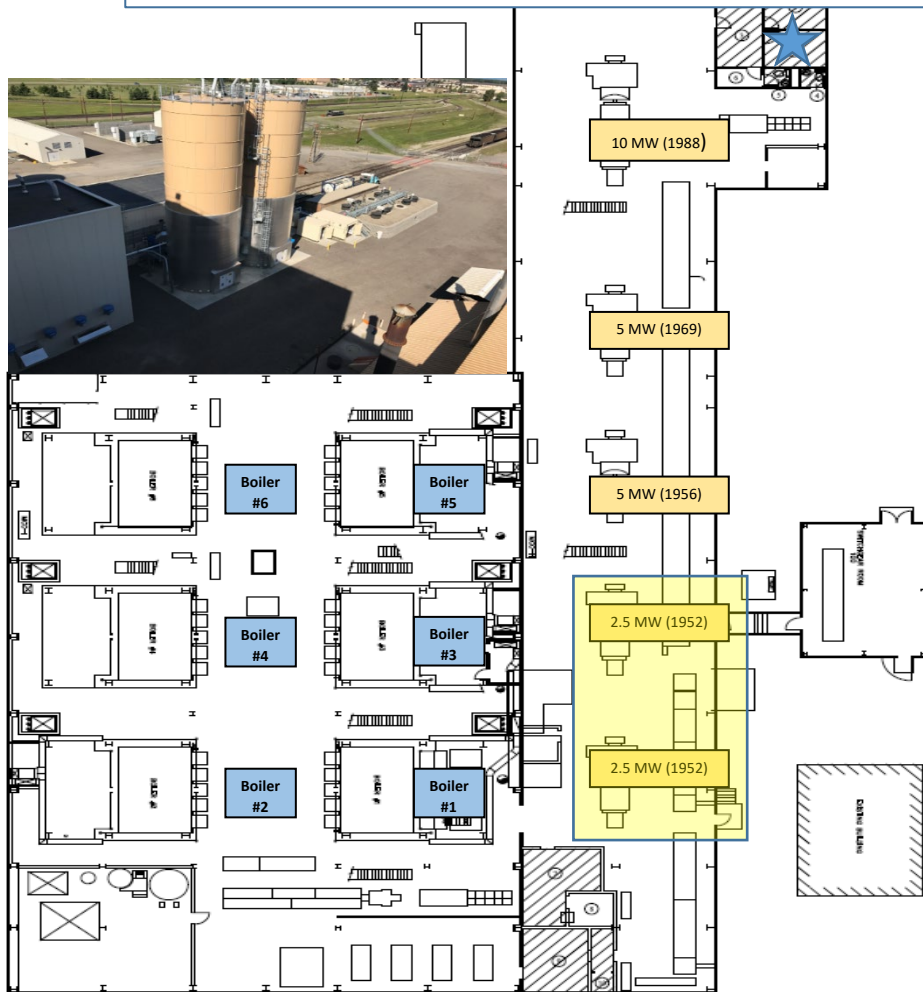
Supervision

- 1 – WS-09 Shift Supv

150,000 SqFt Facility

- 17 Out Bldgs/Structures
- 100ft Basement to Roof of main bldg

(Supv & Asst are eyes/ears for entire area inside fence line)



Maintenance (1 Supv)

- 6 Boiler Mechs (1 WL)
- 3 Pipefitters
- 5 Controls Techs (1 WL)
- 2 Materials Expeditors
- 1 Welder
- 1 Electrician

95+% of facility/equipment maintenance done in-house

Coal and Rail (1 Supv)

- 8 Coal and Rail Ops (1 WL)
- 2 Locomotive Engineers
- 1 Locomotive Mech

3 Locomotives
12 Miles of track
24 Switches
18 Crossings

Eielson AFB's Central Heat & Power Plant

Plant Growth



Top Row

- New Boiler Ammonia Injection
- New Boiler Sorbent Injection
- New Boiler Chemical Processing
- Plant Electrical Distribution Switchgear



Bottom Row

- Continuous Emissions Monitoring System
- Updated Plant Controls Network

Eielson AFB's Central Heat & Power Plant

Workforce Overview

Current Workforce (Funded)

Operations = 26 Positions

- 5 person ops crews for 24/7 plant operations X 5 (WG-05 OT fills 5th crew)
- 1 Water Treatment/Lab Tech (WG-08)
- 1 Operations Supervisor

Coal & Rail = 12 Positions

- 8 Coal and Rail Ops (1 WL)
- 2 Locomotive Engineers
- 1 Locomotive Mech
- 1 Coal & Rail Supervisor

Maintenance = 19 Positions

- 6 Boiler Mechs (1 WL)
- 3 Pipefitters
- 5 Controls Techs (1 WL)
- 2 Materials Expeditors
- 1 Welder
- 1 Electrician
- 1 Maintenance Supervisor

Operations: 24/7 Staffing; performs all boiler ops, turbine ops, water/condensate, and ash pulling operations.

Unfunded = 5 WG-08 Boiler Ops Asst and 1 WG-05 Boiler Ops Helper

Coal & Rail: Perform all coal operations to include coal purchasing, reception, processing, and ash removal. Performs all locomotive and rail operations, inspections, and preventative maintenance.

Unfunded = 1 WG-11 Locomotive Mech, 1 WL-08 Work Lead and 5 WG-08 Coal and Rail Ops

Maintenance: Keep a 67 year old plant running smoothly! Mix of old mechanical systems and modern tech heavy systems.

Unfunded = 2 WG-11 Controls Techs, 2 WG-11 Electricians, 3 WG-10 Boiler Mechs and 1 WG-10 Pipefitter

Current Shortfall



Full fill of 6 person Ops Crews
5 WG-08 and 1 WG-05

Provides for safe and efficient ops of a plant that's changed significantly.
New Total: 32 Funded Positions

Full fill of Coal & Rail Positions
1 WG-11, 1 WL-08 and 5 WG-08

Increased plant demand from mission growth = more coal and a night shift to meet boiler requirements.
New Total: 19 Funded Positions

Partial increase
1 WG-11 Control Tech, 1 WG-11 Electrician and 2 WG-10 Boiler Mechs

Tailored to meet MX needs from plant modernization and ops tempo increase.
New Total: 23 Funded Positions

Eielson AFB's Central Heat & Power Plant Infrastructure and Distribution



100#; 450 degree steam Supplied to base
Condensate returned to CH&PP 5-7% Loss



Electrical Distribution 7200 Phase to Phase
4160 Phase to ground Delta

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Coal Plant Site Visit



Lt Col Christopher Higgins
354 CES/CC

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Break

1600-1615



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Questions & Networking



Ms. Charlene Woods, DLA Energy
Ms. Judith Willis, SAF/IEE Energy
Mr. David Mairs, AFCEC/CIU
Ms. Leslie Brown, SAF/GCN
Lt Col Christopher Higgins, 354 CES/CC

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Closing Remarks



Ms. Nancy Balkus
Deputy Assistant Secretary of the Air
Force for Environment, Safety and
Infrastructure