



WELCOME TO Y-12!





Y-12 INDUSTRY VISIT REQUEST FOR PROPOSAL DE-SOL-0001458

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Acting Y-12 Site Office Manager



GROUND RULES



Only the Source Evaluation Board (SEB) has the authority to change or clarify the Request for Proposal (RFP). Any information presented during the site tours that differs or may be viewed as a change to the RFP will not be considered an amendment to the final RFP.

Questions on this presentation should be for clarification of the material presented. Any questions that are deferred should be provided to the SEB website.

Questions on this afternoon's tours that cannot be answered on the spot must be written on index cards for collection at the end of the visit.

OAK RIDGE RESERVATION FACILITIES

**Y-12 National Security
Complex**
National Nuclear Security
Administration



**Oak Ridge National
Laboratory**

Department of Energy–ORO
Managed by UT-Battelle



**East Tennessee
Technology Park**

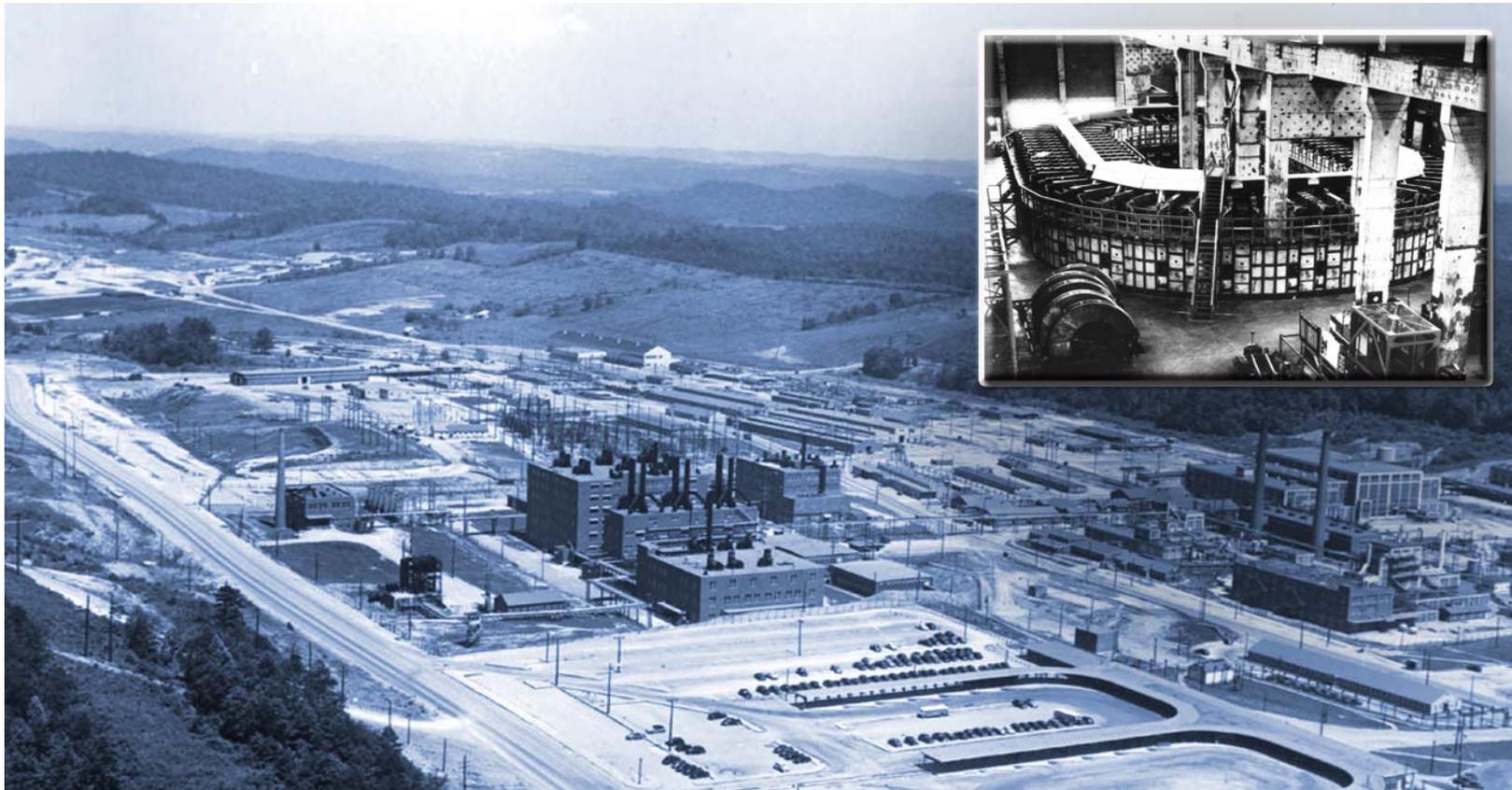
Department of Energy–ORO
Managed by URS | CH2M
Oak Ridge LLC



HISTORICAL PERSPECTIVE



- Created in 1943 as part of the Manhattan Project
- Provided the enriched uranium for “Little Boy,” the atomic bomb used to end WWII





CALUTRONS





Y-12 THROUGH THE DECADES



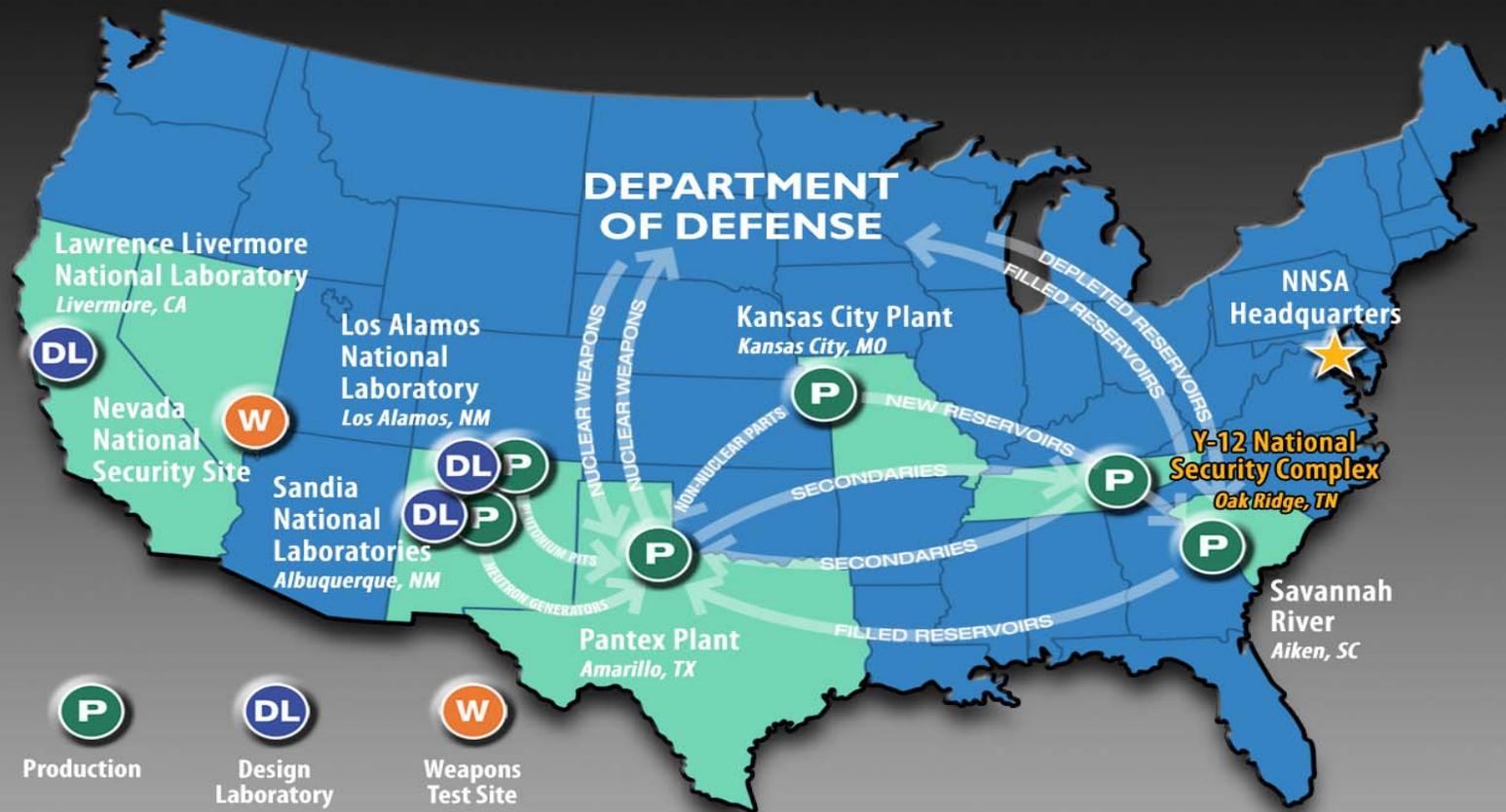
- 1950s move to thermonuclear weapons
- 1960s and 70s Cold War construction surge
- 1980s and 90s process and utility upgrades
- 1990 – 1995 Cold War ends; U. S. moratorium on underground nuclear testing



NUCLEAR SECURITY ENTERPRISE

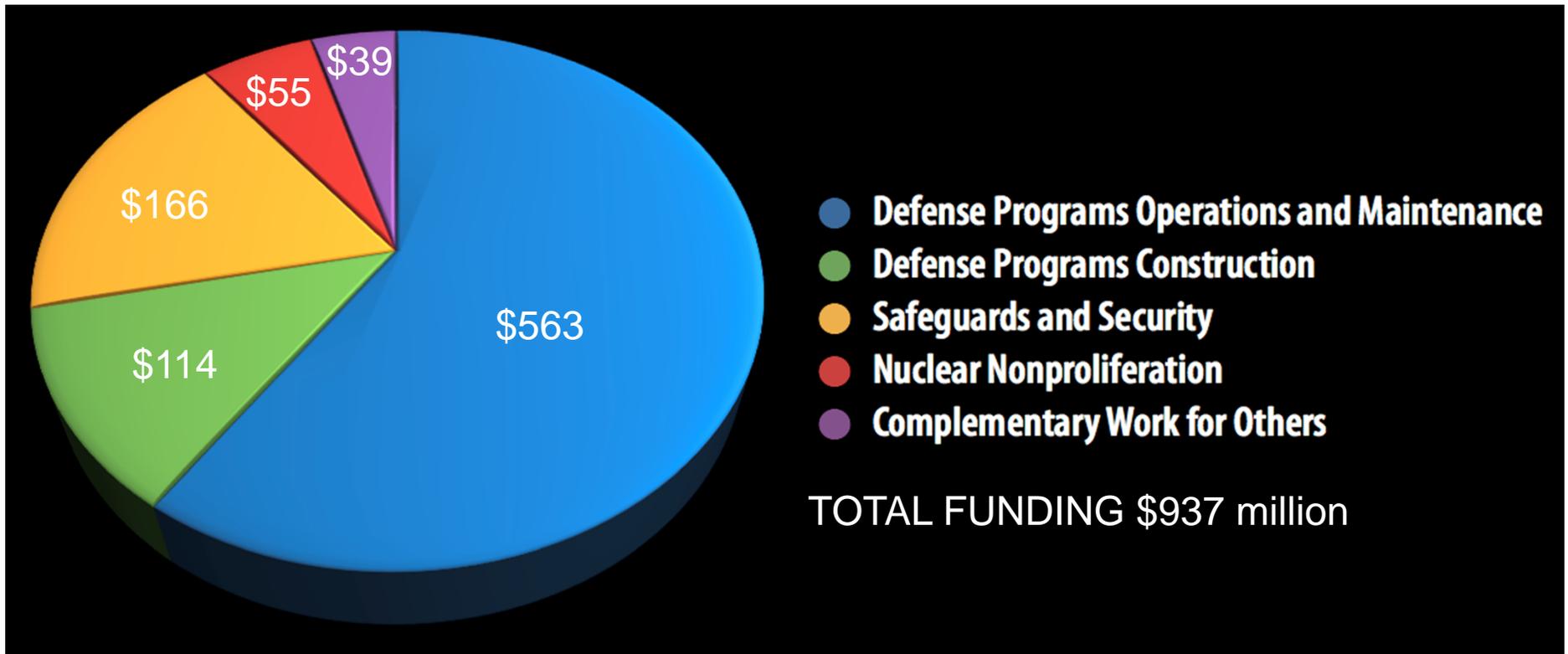


Six production facilities and three design labs





ACTUAL Y-12 FY 2011 FUNDING (\$M)





DISCUSSION TOPICS



- Programs
- Security
- Operations
- Engineering and Nuclear Safety
- ESH & QA
- General Management
- Projects
- Transformation



TODAY'S MISSIONS



- Sustain a safe, secure and effective nuclear arsenal
- Supply the U.S. nuclear Navy
- Prevent nuclear proliferation and nuclear terrorism
- Solve global security challenges



SUSTAIN A SAFE, SECURE AND EFFECTIVE NUCLEAR ARSENAL

- Chemical processing
- Casting
- Rolling and forming
- Machining
- Component manufacturing
- Testing, evaluation and quality assurance
- Disassembly, dismantlement and disposition
- Packing and storage





SUPPLY THE U.S. NUCLEAR NAVY



- **Y-12 is the only supplier of highly enriched uranium**
 - Navy's current annual requirement is more than 3.7 MTU
 - MOA between Defense Programs and Naval Reactors requires HEU through 2050





PREVENT NUCLEAR PROLIFERATION AND NUCLEAR TERRORISM



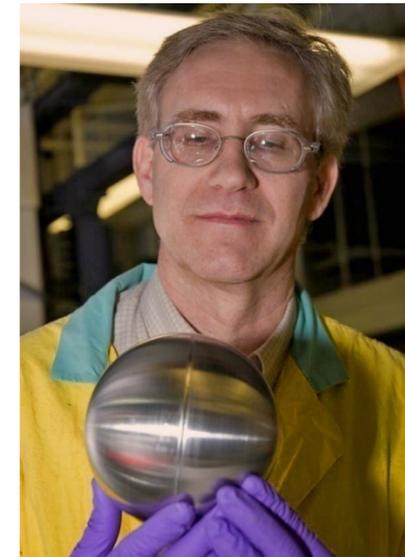
- Convert and supply uranium for peaceful uses
- Secure and recover nuclear materials globally
- Detect uranium and the proliferation of weapons of mass destruction



Rolling Mill



Training Exercise



Radiological Signature
Training Device



SOLVE GLOBAL SECURITY CHALLENGES



- Nuclear technology and materials
- Manufacturing and technical services
- Physical and radiological protection





SUPPLY MATERIAL FOR RESEARCH REACTORS





SECURITY



- Interface with Protective Force Contractor
- Agreements with other local law enforcement entities
- Relationship with Oak Ridge Office





OPERATIONS



- Highly complex nuclear and chemical facilities
- Major utilities include steam, compressed air, high voltage electrical, potable water, inert gas, brine cooling
- Processes require a focus on disciplined nuclear operations
 - Training
 - CONOPs
 - Personal accountability
- Continue safe operation of 9212 to bridge the gap until UPF is complete
- Maintenance of aging infrastructure
 - Corrective Maintenance versus Preventive Maintenance





ENGINEERING AND NUCLEAR SAFETY



- Nuclear Facilities/Authorization Basis
 - Nine operating Category 2 non-reactor nuclear facilities
 - Approximately 50 Vital Safety Systems (VSS)
 - Covered by 10CFR830 compliant safety basis updated annually with revisions throughout the year to support operational changes
 - Implementation Verification Reviews performed following safety basis revision and federal approval to ensure appropriate procedures, training, configuration management, etc. are in-place to support change.
 - Downgraded or eliminated all Category 3 facilities
 - One Category 2 non-reactor nuclear facility (UPF) under design
- Criticality Safety
 - Safety basis for nine nuclear facilities determined that a criticality accident is credible
 - Eight facilities contain Criticality Annunciation (remaining facility is on-site transport vehicle)
 - Approximately 200 process NCS evaluations supported by another 400 technical reports and analysis documents



ES&H AND QA



- Environment, safety, and health
 - Integrated Safety Management System
 - Job Hazard Analysis / Activity Level Work Control
 - Worker Safety and Health Program (10 CFR 851)
 - Standard Industrial Hazards
 - Hazardous Materials include HF and ACN
 - Radiological Control (10 CFR 835) and Chronic Beryllium Disease Prevention Program (10 CFR 850)
 - Fire Protection (DOE O 420.1B)
 - Emergency Preparedness/Continuity of Operations (COOP)
- Quality Assurance
 - Applied to many areas such as facilities, weapons, software, procurement, and projects
 - Integration of NQA-1 and QC-1 programs
 - Stamping delegation and product acceptance
 - Shop Floor Modernization (MOMentum)



GENERAL MANAGEMENT



- Day-to-day business functions
 - Financial
 - Human Resources
 - Internal audit and controls
 - Procurement
- Small business subcontracts and interactions
- IT solutions such as wireless and cloud computing
- Public and intergovernmental affairs – significant interest from outside entities
- Contractor Assurance System – important part of doing business
 - Maintain a comprehensive set of metrics for plant health monitoring
 - Transparency in day-to-day operations
- Process and Productivity Improvements
 - Lean initiatives / six sigma



PROJECTS

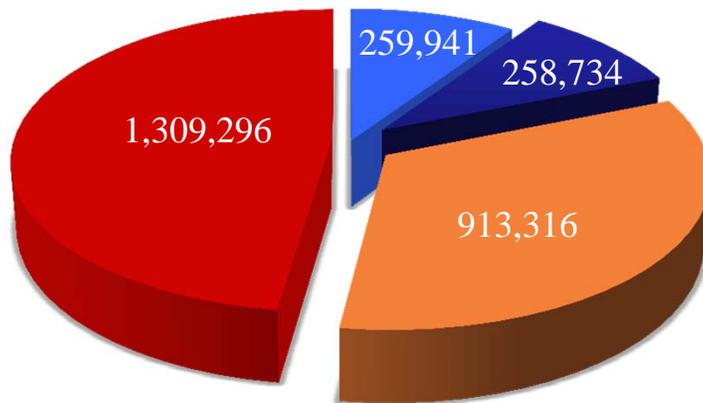
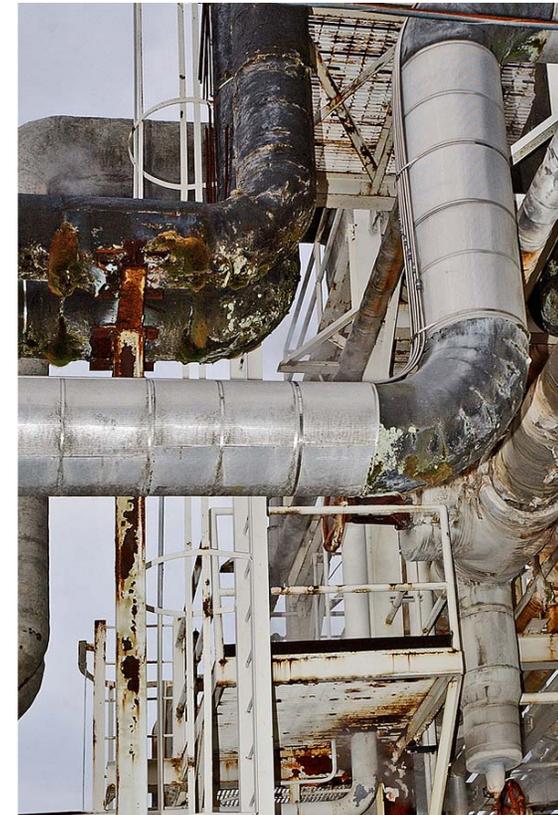


- Infrastructure Line Items/projects
 - Nuclear Facilities Risk Reduction
 - Security Improvement Project
 - Production Microwave
- 50+ General Plant Project/Equipment
 - Roofing
 - Demolitions
 - Deferred Maintenance reduction
- Uranium Processing Facility





TRANSFORMATION – WHY IT'S IMPORTANT



- 0-39 YEARS
 - 40-49 YEARS
 - 50-59 YEARS
 - 60-65 YEARS
- VALUES IN FT²



TRANSFORM THE SITE: COMPLETED FACILITIES



*Highly Enriched Uranium
Materials Facility*



New Hope Center



Jack Case Center



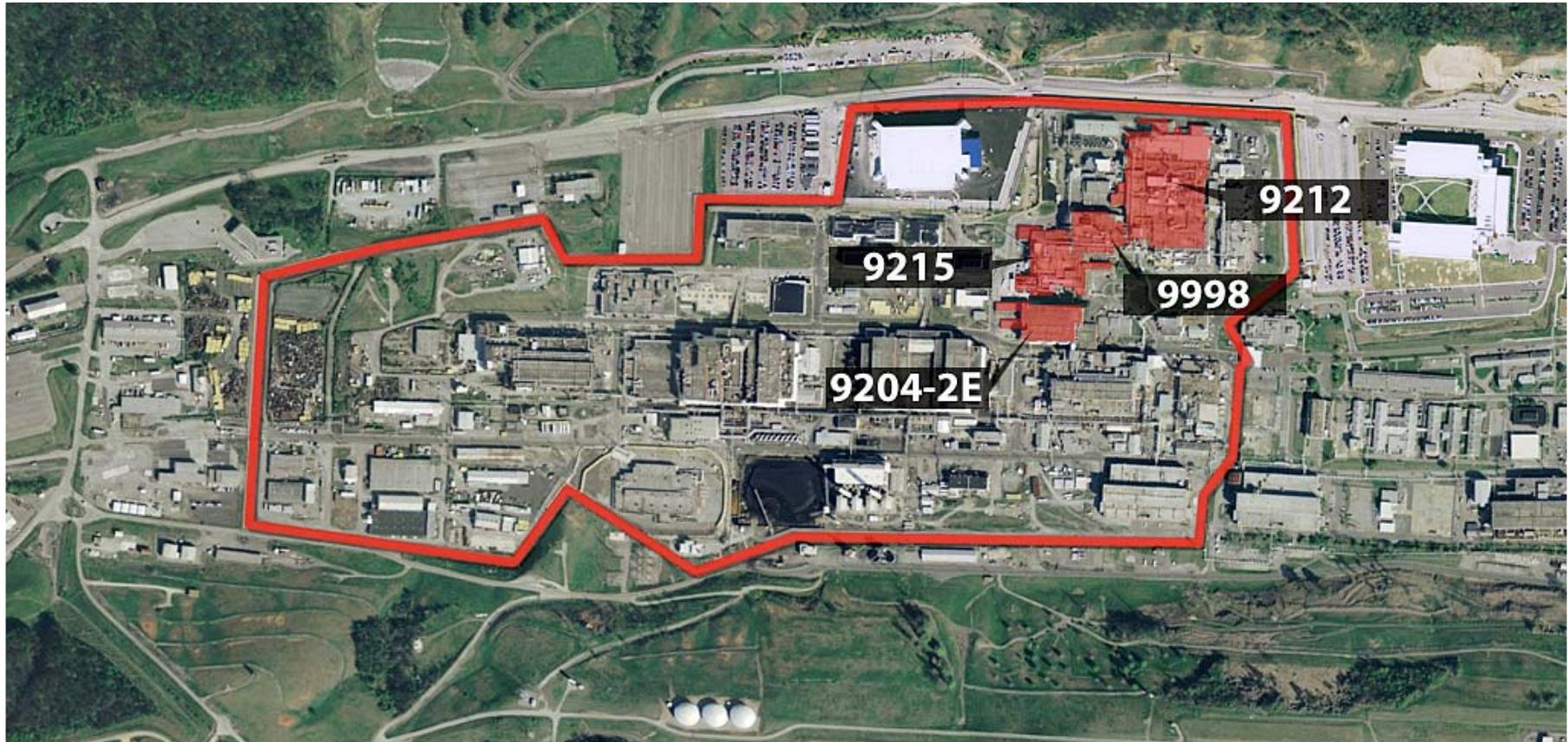
HEUMF & UPF

THE TRANSFORMATION BACKBONE



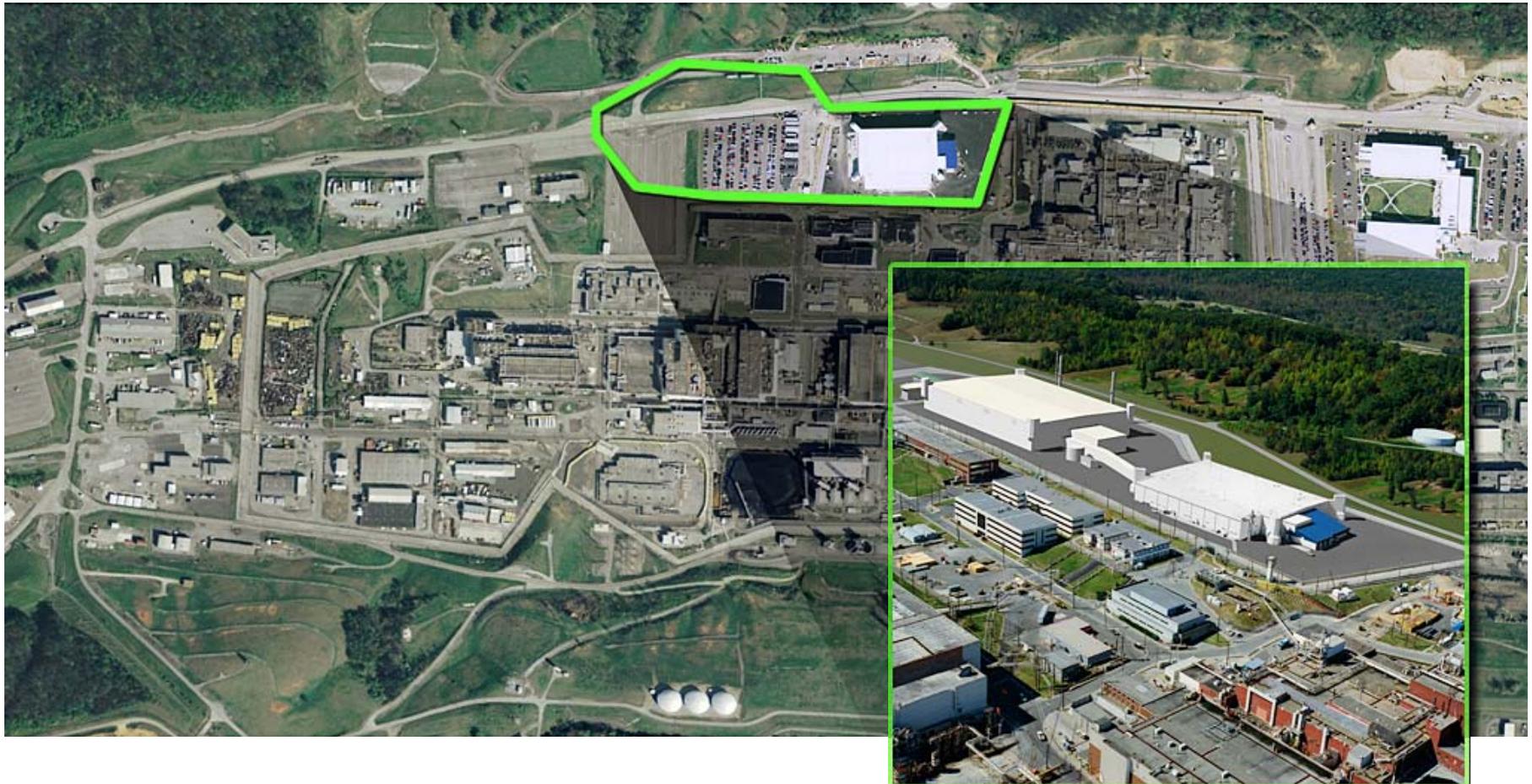


CURRENT PROTECTED AREA



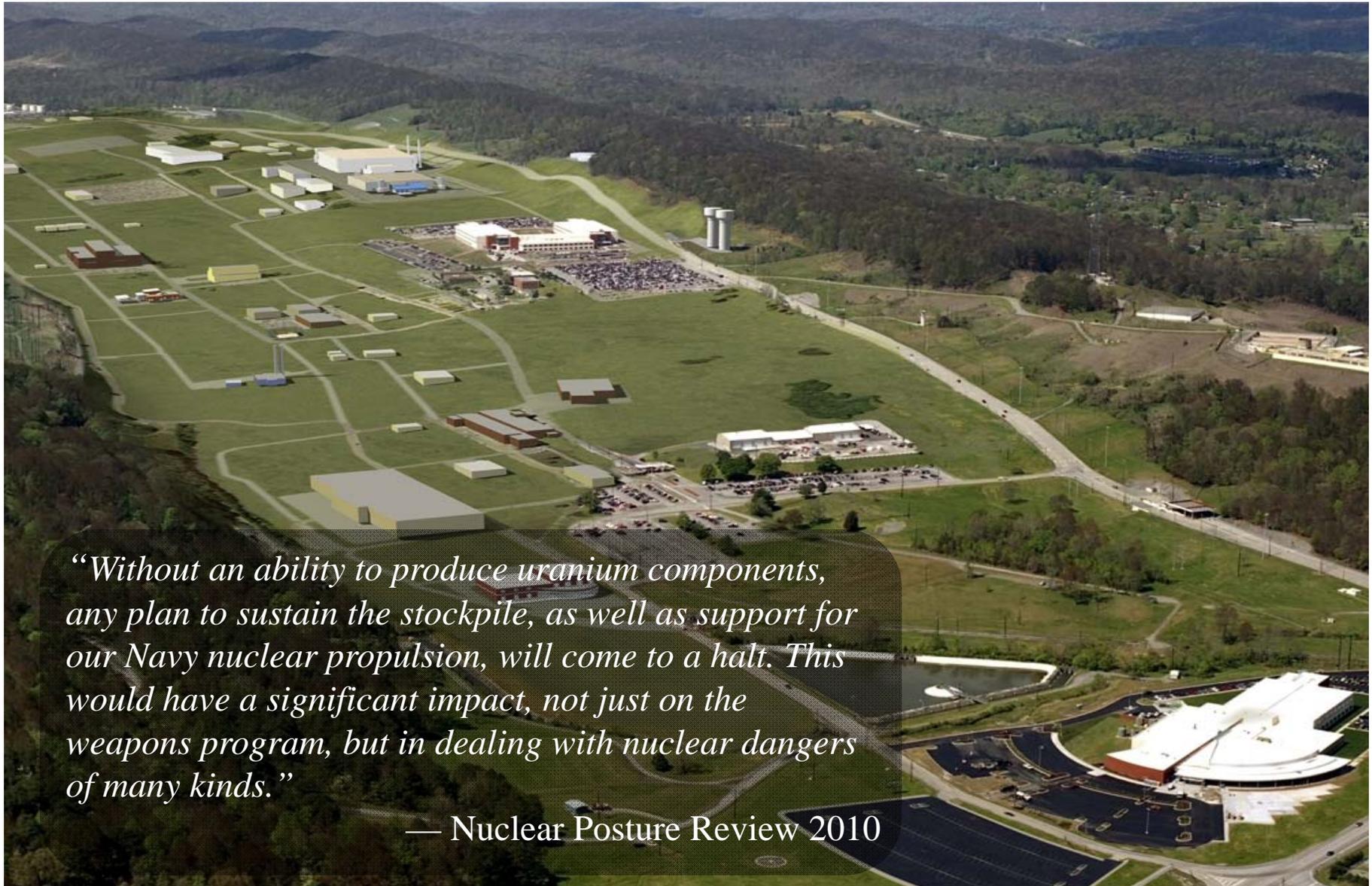


FUTURE PROTECTED AREA





Y-12 TRANSFORMATION – VITAL TO FUTURE



“Without an ability to produce uranium components, any plan to sustain the stockpile, as well as support for our Navy nuclear propulsion, will come to a halt. This would have a significant impact, not just on the weapons program, but in dealing with nuclear dangers of many kinds.”

— Nuclear Posture Review 2010



TODAY'S AGENDA



- Break
- Windshield tour
- Lunch
- Tour 9204-2E (Assembly & Disassembly)
- Tour 9212 (Chemical Processing)
- Tour Highly Enriched Uranium Materials Facility
- Overview of Uranium Processing Facility

