Y-12 Area Office
Oversight of Chemical Safety

Terry B. Olberding
Director, Technical Division

National Nuclear Security Administration

Y12 National Security Complex

Defense Programs

"Guaranteeing National Security through Manufacturing Excellence"

Manufacture weapon components

HEU for reactor fuel and U.S. Navy fuel

Dismantling and quality evaluation of returned weapons

Control and creation of unique alloys

Defense Nuclear Nonproliferation

"Keeping Nuclear Materials Out of the Hands of Terrorists"

Perimeter and building upgrades

Upgraded storage and accounting

Detecting illicit traffic in nuclear materials - land, sea, and air

Nuclear Cities Initiative

National Prototype Center

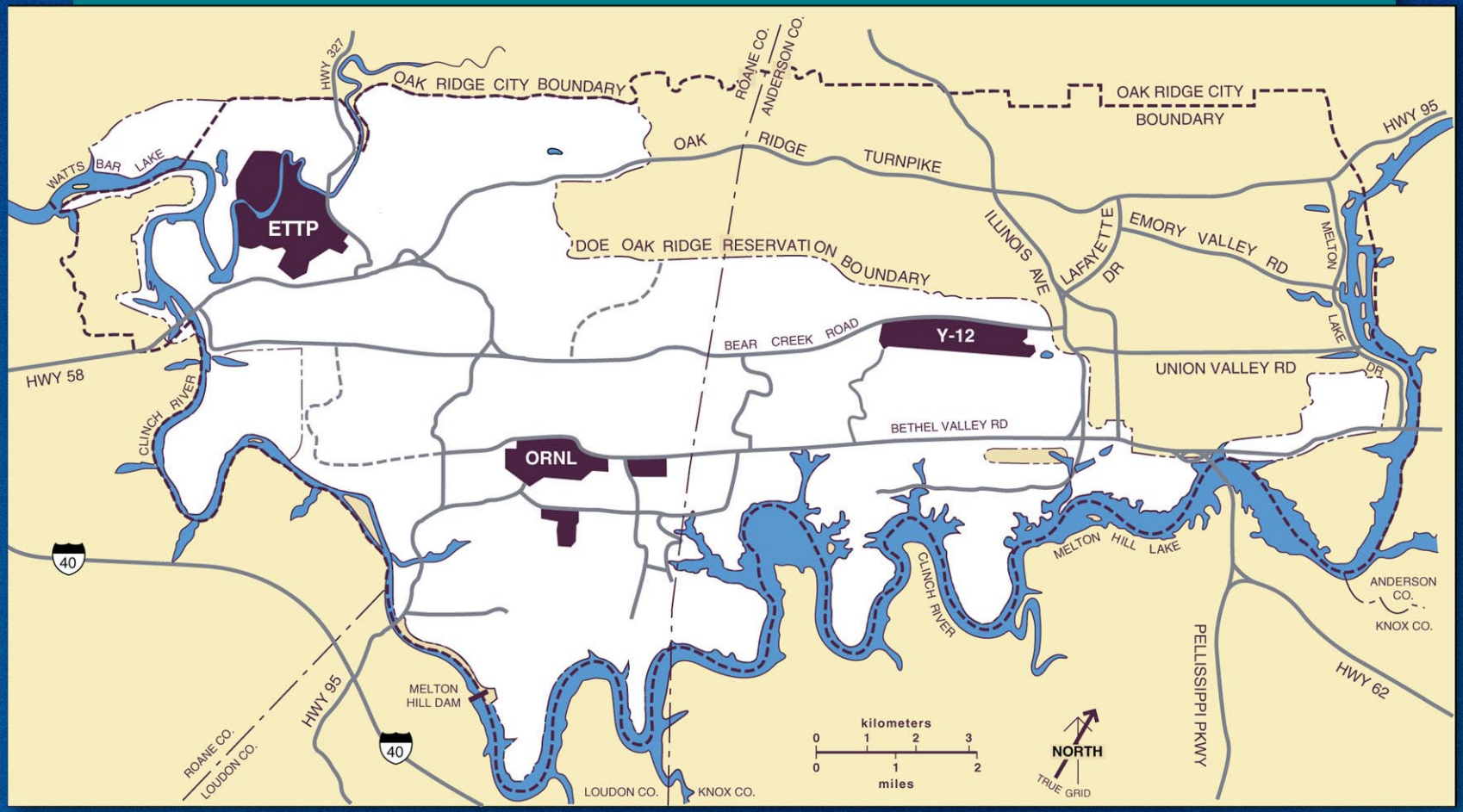
Security Initiatives

- Physical Security
- Cyber Security
- Automated Security

NNSA National Nuclear Security Administration

YGG-00-1140

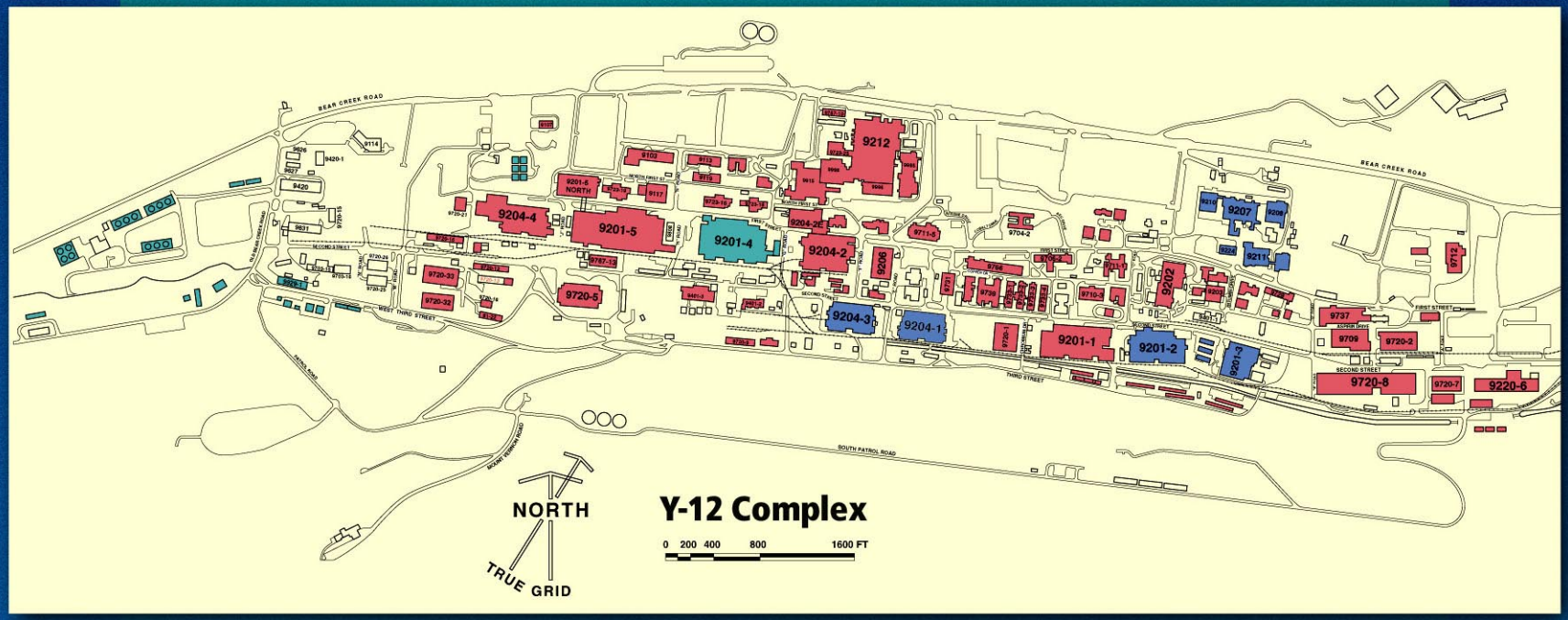
Oak Ridge Reservation



Y-12 Complex

YGG-00-0501R (PR)

Y-12 National Security Complex



- Oak Ridge National Laboratory
- Environmental Management/Decontamination and Decommissioning
- Defense Programs

Y-12 Complex Landlord Facts

Y-12 consists of 5,428 acres

- A subset of the Oak Ridge Reservation (total of 34,516 acres)
- Y-12 Complex proper is on 811 acres (630 acres are fenced)
- Y-12 consists of 582 buildings containing 7,611,818 sq ft of floor space
  - Defense programs (DP) = 486 buildings or 5,201,527 sq ft
  - Science (SC) = 29 buildings or 1,379,130 sq ft
  - Environmental Management (EM) = 24 buildings or 769,604 sq ft
  - MK-F & other = 43 buildings or 261,457 sq ft

Y-12 Complex Landlord Facts, Cont.

Total site-wide population as of November 1, 2000 was approximately: 6,060

- **Defense Program (DP) = 3,500**
- **Science (SC) = 350**
- **Environmental Management (EM) includes BJC and Subs = 140**
- **Wackenhut = 370**
- **Other (MK-F, DOE and DOE Subs, BWXT Y-12 non-DP, ORNL guests, and BWXT Y-12 on-site Subs = 1,700**

History of Y-12 Complex

1943

Constructed by U.S. Army Corps of Engineers – Manhattan Project

1947 – 1984

Operated by Union Carbide Corporation Nuclear Division

1984 – 2000

Operated by Martin Marietta/Lockheed Martin Energy Systems, Inc.

2000 – Present

BWXT Y-12, L.L.C.

Digging Foundation, Building 9202

March 2, 1943

YGG-00-0505 (PR)

Y-12 Complex

September 8, 1943

YGG-00-0506R (PR)

Some Components for Every Nuclear Weapon System Were Manufactured at Y-12

Y-GA 92-1697R1 (PR)

Y-12 Missions Are Essential to the Nuclear Weapons Complex

- Receipt, storage, and protection of highly enriched uranium
- Directed work and Life Extension Programs
- Quality evaluation/enhanced surveillance of the enduring stockpile
- Recycle/recovery of strategic materials
- Dismantlement—supporting stockpile drawdown
- Manufacturing readiness/skilled, knowledgeable people
- Advanced Design and Production Technologies (ADaPT)

Facility must be maintained in a safe, compliant, and capable state for mission execution

Y-12 Missions in Support of Nuclear Non Proliferation

- Nuclear Non Proliferation Programs
  - International Safeguards (NN-40)
  - MPC&A (NN-50)
  - Initiatives for Proliferation Prevention (NN-40)
  - Nuclear Cities Initiative (NN-40)
  - Arms control/Treaty Verification (NN-42)
  - HEU & Pu Disposition (NN-60)
  - HEU Transparency (NN-43)
  - Export Control (NN-43)

Key Processes Maintained for Six Product Families

- Enriched Uranium
- Special Weapons Processes
- Special Weapons Materials
- Lithium Hydride/Deuteride
- Depleted Uranium
- Support Process

Y-12 Complex Materials

Adripene (LW-520)
Aluminum
Aluminum (ion plated)
Bakelite phenoxy
Beryllium
Beryllium oxide
Brass
Cadmium
Carbon
Cellular silicone
DAP
DEB
Depleted uranium
Depleted uranium alloys
DPB
DPPE
Enriched Uranium
Flourinert
Graphite
Graphite/epoxy
Composition
DPE
Honeycomb
Iron
Kel-F
Kevlar
6LiD
6LiH
Lead
Magnesium
Mylar
Neoprene
Nickel
PBB
Plexiglas/Fiberglas/foam
Plastic/aluminum
Polyester
Polyethylene
Polymethylpentene
Polystyrene
Polyurethane foam
Rubber
Silastic
Silicone
Stainless steel
Stainless steel/steel
Steel
Sylgard
Tantalum
Teflon/FEP
Thorium
Titanium alloy
TPX
Tungsten Alloy
Tungsten/nickel/iron
Classified material types

Chemicals at Y-12

- Acetonitrile
- Beryllium
- Cadmium
- Calicum
- Calicum Hydroxide
- Dibutyl Carbitol
- Hydrochloric Acid
- Hydrogen Fluoride
- Hydrogen Peroxide
- Lab Scale Quantities of reactive, shock-sensitive
- Lithium
- Lithium Hydride/Lithium Deuteride
- Lithium Hydroxide
- Mercury
- Methyl Chloroform
- Nitric Acid
- Sulfuric Acid
- Tributyl Phosphate
- Uranium
- Uranium Hydride
- Classified Chemicals

Y-12 Area Office Organization

Y-12 Area Office

This Org. Chart is based on Rev. 1 of Staffing Priorities 5/16/01

Manager, Y-12 Area Office

William J. Brumley – Manager
Ted D. Sherry – Acting Deputy Manager FY01
Roena Harris – Office Manager
R. T. Brock – Sr. Projects Engineer
Diane McCarten – Program Analyst
David Wall – Sr. Nuclear Engineer
Vacancy – Directives Prog. Analyst FY02

Matrix Support

Barry Krause – Counterintelligence Officer
Steve Wyatt – Public Affairs

Authorization Basis Team

Doug Dearolph – Sr. AB Engineer
N. Karne - AB Eng.
Vacant – Auth. Basis Mgr.
Vacancy – AB Eng. (GS-14) FY01
Vacancy – AB Eng. FY02

Programs Division

Dan Hoag – Director
DeShelle Cleghorn – Office Manager
Anna Beard – Sr. Project Mrg.
Scott Cannon – Sr. Project Mgr. (RTW 11/4/01)
Ronnie Catoe – Sr. Project Mgr. (RTW 11/4/01)
Rick Collier – DSW Program Mgr.
Becky Eddy - NMMS Program Mgr.
Bob Edlund – RTBF Program Mgr.
Pam Gorman – Camp. Prog. Mgr.
Tom Larkin – Project Mgr
Mark Livesay – Sr. Camp. Prog. Mgr.
Ron Ooten – Project Mgr.
Harry Peters – Sr. Project Mgr.
Vacancy – Intern FY02
Vacancy – Program Manager FY02

Matrix Support

*Gary Hartman – NEPA Mgr.

Operations Management Division

Ken Ivey – Director
Shanel Hurd – Office Manager
Dale Christenson – Lead Ops Eng.
Jennifer Clay – BOP Facility Rep.
Mike Glasman – Lead QA Eng.
Sherry Hardgrave – Wpns. QA Spec.
Ted Hinkel – MMO Facility Rep.
Thomas R. Hipschman – Fac. Rep.
Charlie Hughey – Facility Rep.
P. Gary Humphrey – Facility Rep.
Keith Kline – Facility Rep.
Mike Miller – AO/MCO Facility Rep.
Michelle Penpek – Facility Rep.
King Ragos – Weapons QA Eng.
Teresa Robbins –AO/MCO Fac. Rep.
C. T. Shen –Facility QA Eng.
Mark Sundie – Operations Eng.
Stan Watkins – EUO Facility Rep.
Steve Wellbaum – EUO Fac. Rep.
Vacancy – Ops Eng. FY01
Vacancy – Maint. Eng FY01

Technical Division

Terry Olberding – Director
Elizabeth Hale – Office Manager
Mike Arendale – Emergency Mgmt
Craig Booker – RadCon
Jim Donnelly – Env. Comp.
Chelsea Hubbard – Chemical Safety (Detailee)
Jim Hutton – Fire Protection Eng.
Larry Jones – Industrial Hygiene
Ed Kendall – Sr. Criticality Eng.
Dave McGinty – Metal Proc. Eng.
Susan Morris – NEPA Comp. Officer
Ken Rhyne – Nuclear Systems Eng.
Jerry Robertson – IS Eng.
Rick Swatzell – HVAC Proc. Eng.
Vacancy – Lead Proc. Eng. FY01
Vacancy – Chem. Proc. Eng FY02
*Vacancy - Sr. Safety Eng. FY02
*Vacancy – I&C/Elec Proc. Eng.
*Vacancy – FP Engineer
*Vacancy – Trans./Packaging
*Vacancy – Crit. Safety. Engineer (backfill)

Matrix Support

Business Mgmt. Division

Jim Martin - Director
**Judy C. Wright - Office Manager (RTW 11/11/01)
Sherria Allen – Mgmt. Analyst AWF/BCCB
Donna Arakawa – Budget Analyst (Reports to P&B Div.)
Robin Spradlen – Prog. Mgr. ATS/WFO
Bill Wistrom – Contracts
Vacancy – Prog./Mgmt Analyst FY02 (2)
Vacancy - Pers. Mgmt Spec.

Safeguards and Security Division

Sharon Daly, Director (RTW 11/11/01)
**Judy C. Wright - Office Manager (RTW 11/11/01)
George Blanchard - Ind. Sec. Spec
Richard Green – Security Specialist
Jerry Howell – Classification
Debra McNeilly, NMC&A Spec.
Caryl Milton – Cyber Security Spec.
Donat St. Pierre - Security Officer
Bill Watson – Cyber Security Spec.
Vacancy – NMC&A Spec. FY02 (1)
Vacancy – Pers. Sec. Spec. FY02
Vacancy – CMPC Spec. FY02
Vacancy – Tech. Sec. Spec. FY02

*Vacancy – Security Systems Spec.
*Vacancy – Protective Force Spec.
*Vacancy – NMC&A Spec.

Green – FY01
Blue – FY02
Red – Not counted against FTE
*Positions Identified above 85
**Dual Capacity

William J. Brumley, Manager

10/1/01

Oversight of Chemical Safety

- Programmatic - Subject Matter Experts (SME)in Chemical Safety, Industrial Hygiene, Industrial Safety, Safety Authorization Basis, Emergency Management, Env Mgt and Fire Protection with input from Fac Reps
- Operations - Facility Reps with input from SMEs
- Planned Activities (projects/mods/startups/restarts) - System Engineers, SMEs, Fac Reps
-
- Document Reviews (Safety Authorization Basis, Hazard Surveys and Assessments, Env Reports, Fire Hazard Analyses, etc) - SMEs, Fac Reps and System Engineers

Identification and Analysis of Chemical Hazards

- Identification
  - Procurement Process - AVID
  - Tracking System - HMIS
  - New Activity Process
  - Job Hazard Identification
  - Hazardous Materials Identification
  - IH surveys
  - Pre-Job Briefs, Operational Safety Boards
  - HazCom Trng, MSDS
  - EPCRA 313 TRI
- Analysis
  - Haz Mat'l Program
  - Job Hazard Analysis
  - Safety/Hazard Analysis Docs including SARs, Hazard Evaluation Reports, Hazard Surveys and Assessments, FHA
  - IH/Occupational Medicine
  - Environmental Assessments

Issues

- Need to update HMIS to include classified information, and to electronically link HMIS to Procurement System (AVID - SAP)
- Increased effort needed to maintain an accurate, real-time basis inventory and reduce in-house chemical inventory
- Lack of guidance on safe storage of chemicals (time-dependent, shock-sensitive, and reactive materials) - procedure has been drafted
- Lack of leading performance indicators

Improvements

- Increased YAO Staffing (detailee to focus on chem safety)
- DOE-ORO sponsored Training Class on Chemical Vulnerability and Reactive Chemical Recognition
- Integrated hazard identification process
-
- New BWXT Y-12 Chemical Management Working Group Committee chartered 7/01
- Updated Chemical Safety Management Program, Hazardous Mat'l Mgt Program, Job Hazard Id and Analysis procedures
- Numerous improvements as a result of NaK Type A Corrective Action Plan