



PROJECT MANAGEMENT CENTER FOR EXCELLENCE

A.J. CLARK SCHOOL OF ENGINEERING
Civil & Environmental Engineering Department



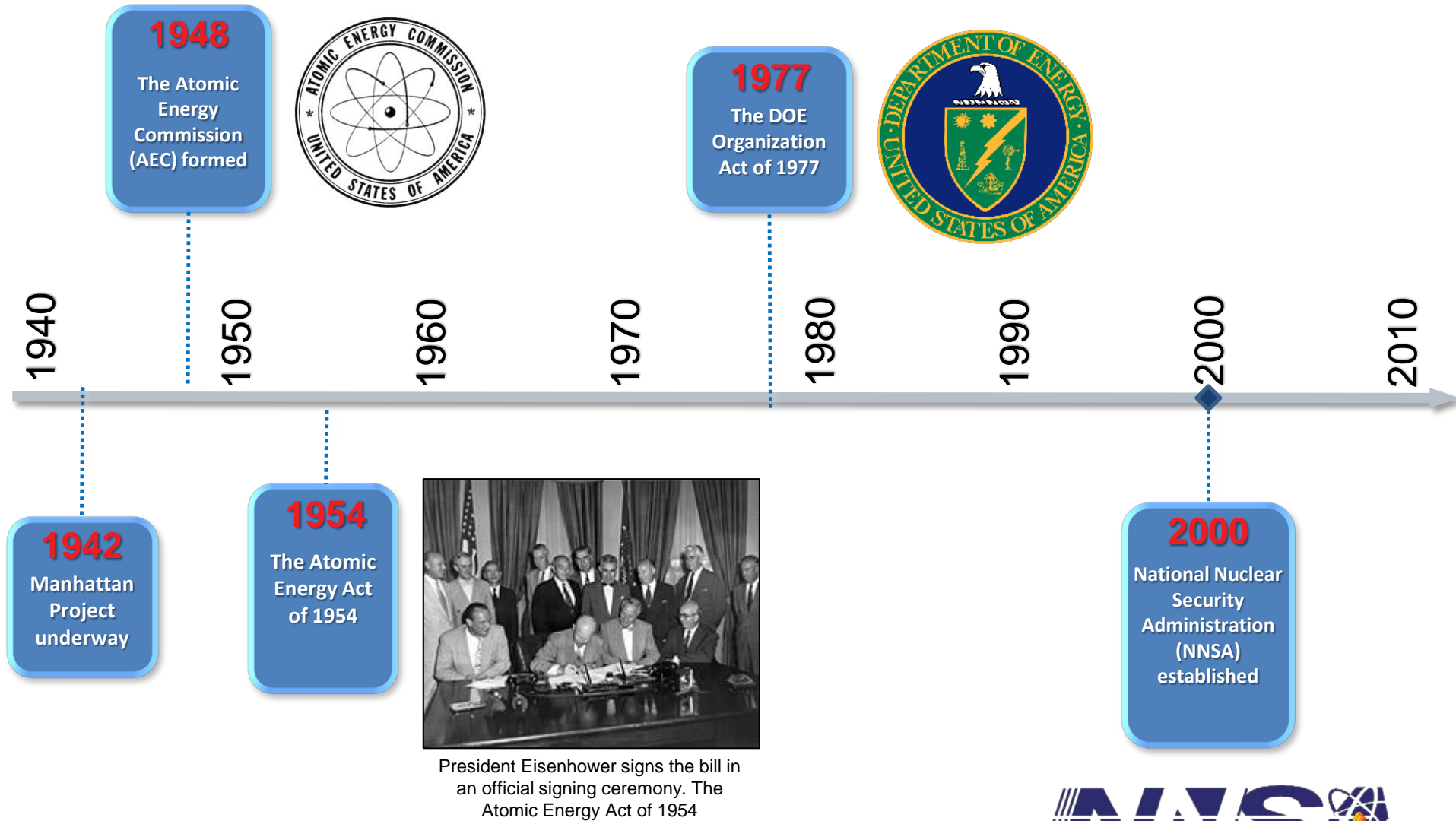
The Enterprise Program Management Office: Another Best Practice at the National Nuclear Security Administration

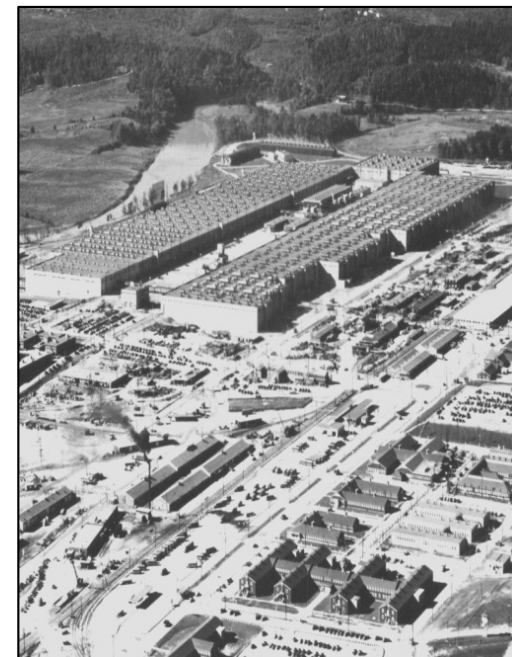
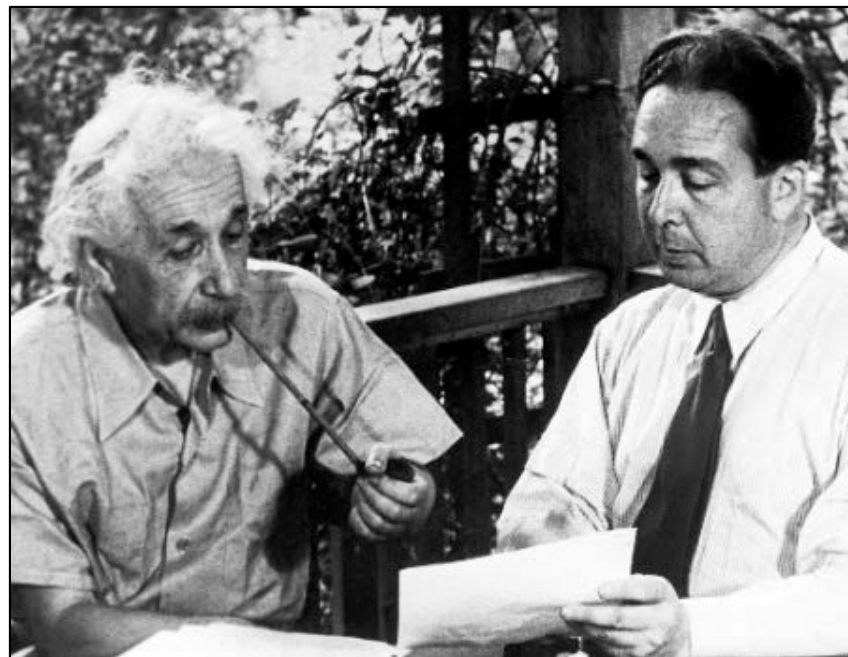
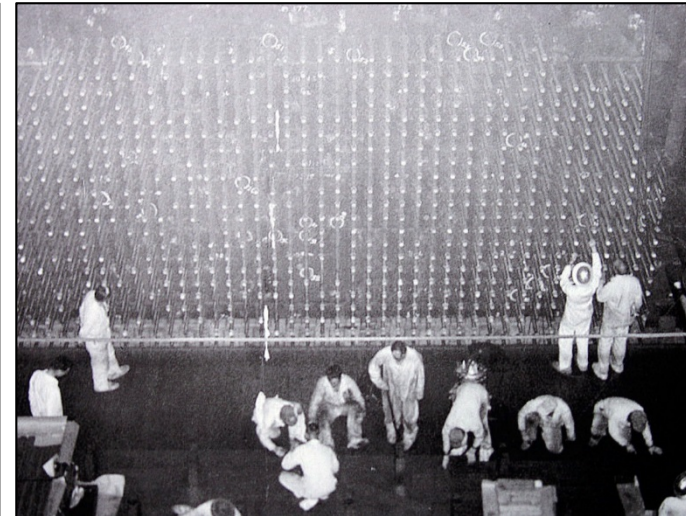
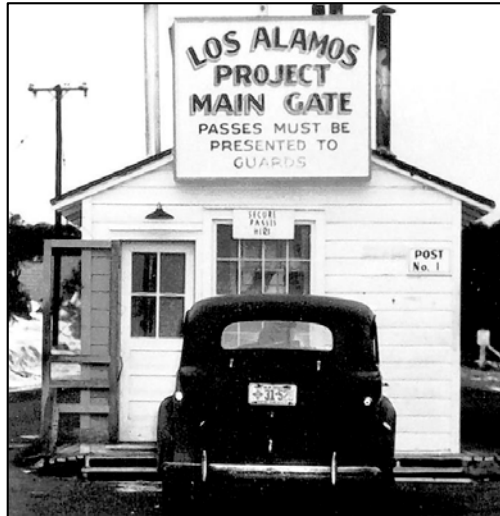
Wayne Abba, Alma Contreras, Jessica Kunkle
2017 Project Management Symposium

- PMOs and EPMOs as Best Practice
- PgMOs and EPgMOs
- NNSA Overview
- NA-50 Programs and Projects
- NA-50 Program Management Office
 - Roadmap
 - Implementation to Date
 - Long Term Vision
- Benefits
- Final Thoughts

- The project management office (PMO) is widely considered best practice worldwide
 - Included in PMI's PMBOK Guide – world's most popular PM standard
 - Heavily discussed in Kerzner's 2014 book: Project Management Best Practices: Achieving Global Excellence
- Common PMO functions according to PMBOK Guide:
 - Establishing PM standards, policies, procedures, templates
 - Providing projects support, conducting reviews, monitoring compliance
 - Coordinating communications, shared resources, risk management
 - Coaching, mentoring, training, oversight
 - Other functions, according to various authors
- Enterprise PMOs (EPMOs) have increased since 2000, intended to spread PMO benefits across entire organizations

- Programs and program management have been common in federal agencies for decades (DoD, DOE, NASA, etc.)
- Modeled on the PMO, the program management office (PgMO) offers similar functions and benefits for program management
- Inclusion in PMI's Standard for Program Management spread acceptance and adoption of PgMOs in organizations everywhere
- Increased use of PgMOs paralleled the rise of portfolio management and PM governance; PM field now widely seen to include program, project and portfolio management (PPPM)
- An Enterprise PgMO (EPgMO) simply spreads the benefits of a PgMO across an entire enterprise, in the same way an EPMO does





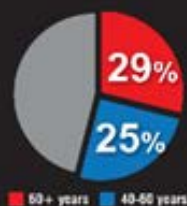
NNSA SAFETY, INFRASTRUCTURE & OPERATIONS

MAKING THE RIGHT THINGS HAPPEN



A VAST AND COMPLEX ENTERPRISE

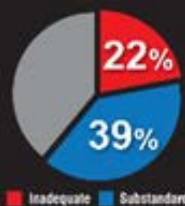
AGE OF INFRASTRUCTURE



EXCESS FACILITIES



CONDITION OF INFRASTRUCTURE



Vision

We contribute to national security now and in the future by managing the complex NNSA risks of safety, infrastructure, materials, and the environment.

Mission

Enable safe operations, ensure effective infrastructure, and provide enterprise services to meet National Nuclear Security Administration needs.

39,000

LABORATORY & PLANT EMPLOYEES

2,000
miles of roads

NEARLY THE DRIVING DISTANCE FROM DC TO LOS ALAMOS



TRACK **400,000**
METRIC TONS
OF NUCLEAR MATERIAL
TRANSACTIONS



safety for **400**
nuclear and
hazardous
facilities



2,100
square miles
of land area

ABOUT THE
LAND AREA
OF DELAWARE

36 MILLION
SQUARE FEET OF
ACTIVE FACILITY SPACE



~ six Pentagons worth

NNSA Packages ship
over **500,000 miles**
per year

Enough to travel to
the moon and back



9 Trillion BTUs
ANNUAL ENERGY CONSUMPTION



enough to
power
~ 250,000
homes for
one year



The CHALLENGE:

- NNSA's multiple, vital national security missions are dependent upon safe, reliable, and modern infrastructure
- NNSA enterprise has become too big, too old, and is failing at an increasing rate



The SOLUTION:

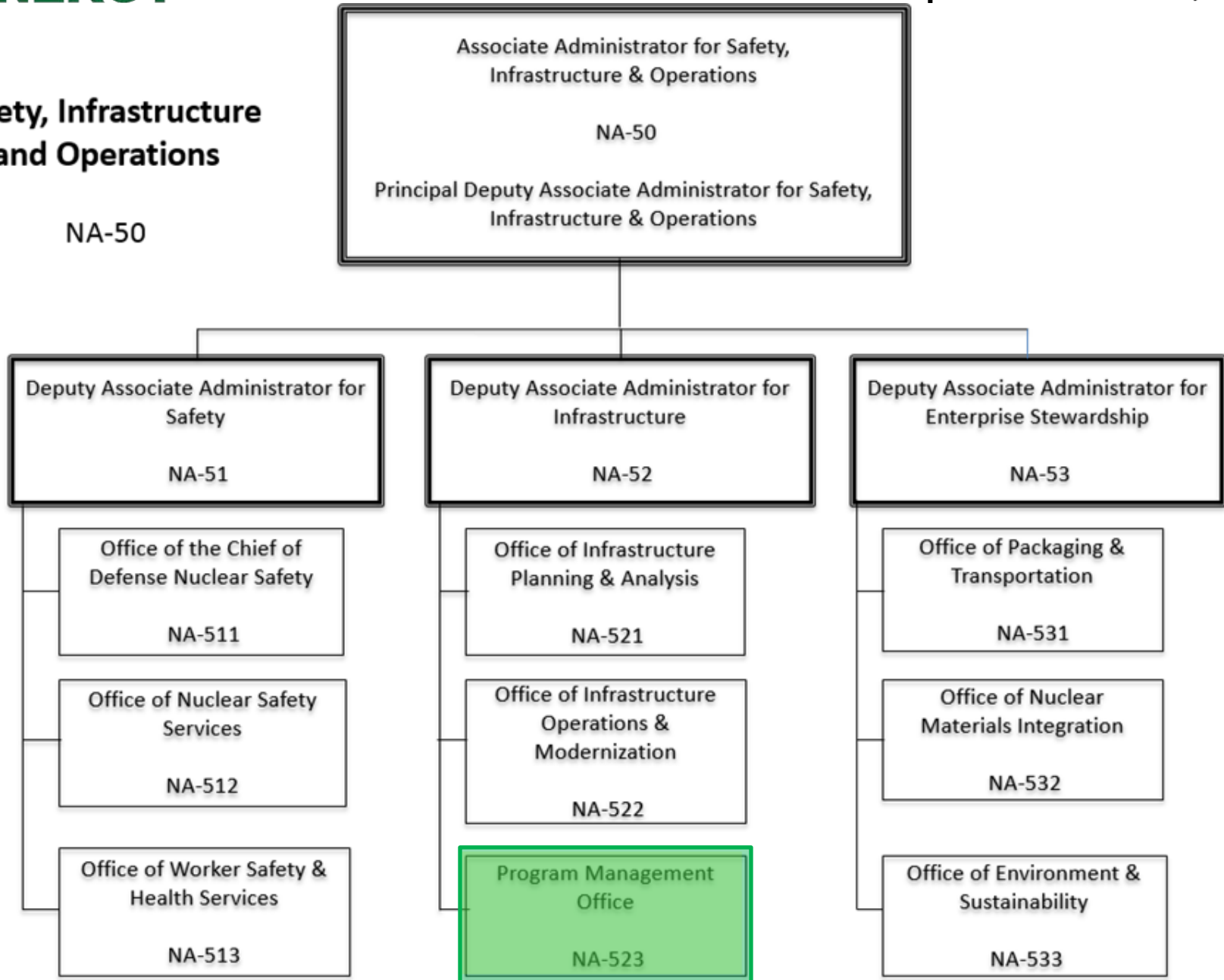
- NNSA is revolutionizing infrastructure tools and practices to improve data-driven, risk-informed decision making in a transparent, predictable, repeatable manner to maximize investment power and infrastructure risk reduction





Safety, Infrastructure and Operations

NA-50



- **Standards and Processes:**


- Maintain Program Management Plan (PMP)
- Define and continuously improve PM standards and processes
- Facilitate best practice sharing

- **Programming/Budgeting:**

- Develop and continually enhance programming guidance
- Identify tradeoffs and advise senior leaders

- **Execution and Evaluation:**

- Provide centralized PM support to program managers
 - Project controls
 - Enterprise Risk Management (ERM)
 - Data analytics
 - Procurement
 - Communications
 - Process improvements
 - Business analysis
 - Operations analysis



innovative, data-driven,
risk-informed infrastructure
management tools

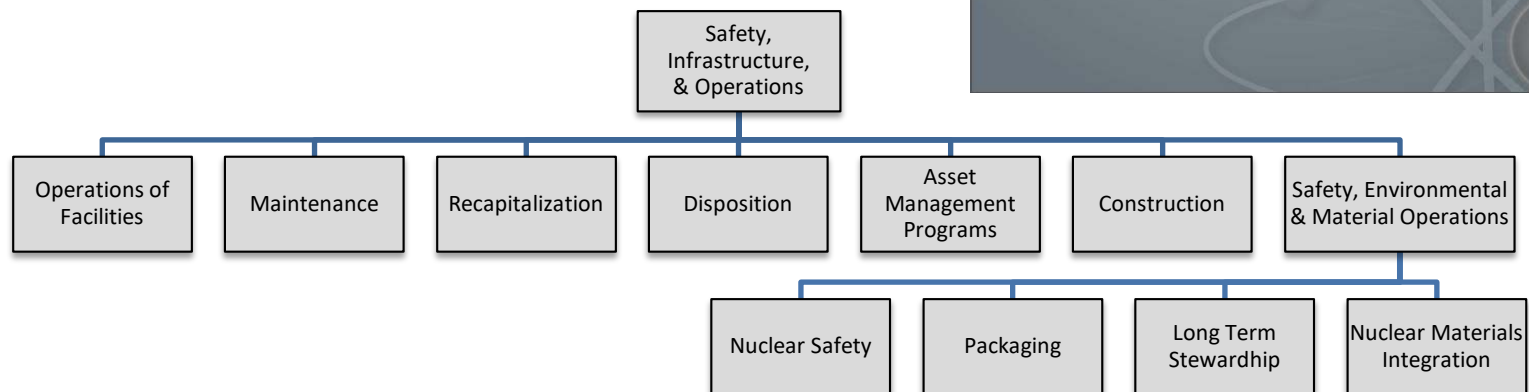
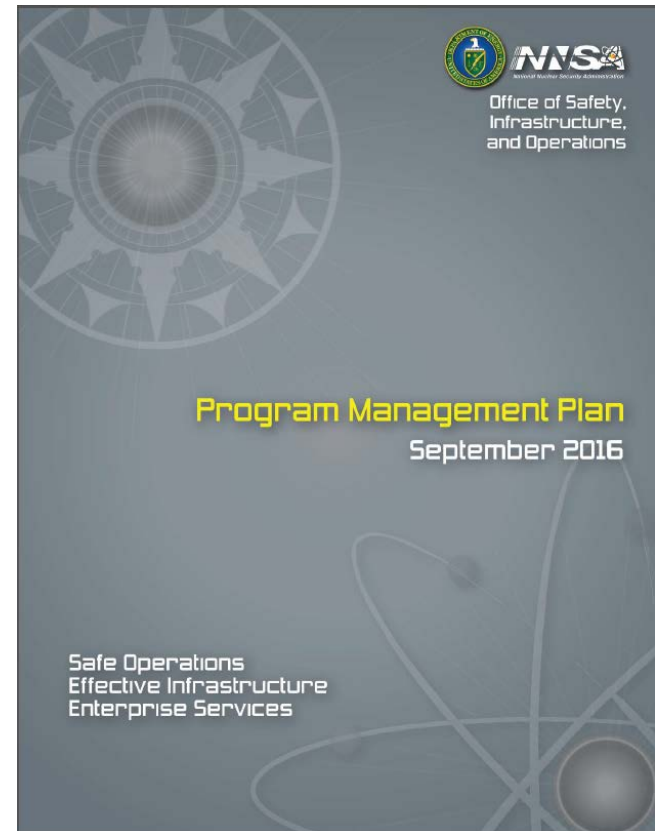
+

transparent, predictable,
& repeatable infrastructure
management practices

=

**the infrastructure
management
framework|process**

- **Standards and Processes**
 - Program Management Plan (PMP)
 - Baseline management
 - Change control with defined work flow
 - Performance reporting
 - Integrated WBS
 - Program Management Improvement Team (PMIT)



- **Programming/Budgeting**
 - Annual guidance
 - Programming tools and meeting
 - Standardized Integrated Project List (IPL)
 - Consistent data-driven and risk-informed messaging

<http://pmsymposium.umd.edu/pm2017/>

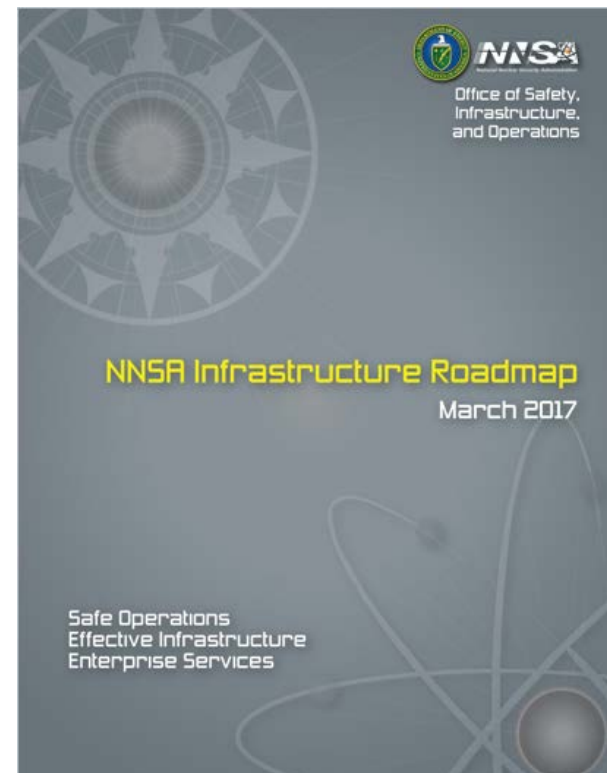
Infrastructure Planning Scenario Modeling

FY17 Recapitalization

Prioritization Set: NA-SO IPL Funding Scenario: 2 - Max Working Target

▼ Duration

Priority	Site	Project	Earliest Start FY	Est. End FY	Funding Year	2017	2018	2019	2020	2021
1	PX	Flame Detection Installation, Building 12-84 Bays 10 & 20	2015	2017	2017	\$1,500.00K				
2	LANL	LANL Non-Nuclear Classified Machine Shops Electrical Replacement	2017	2018	2017	\$400.00K				
3	LLNL	HED Physics Precision Target MicroMachining Consolidation	2017	2019	2017	\$3,650.00K				
4	SRNS	Replace Obsolete Oxygen Monitors (L2)	2017	2018	2017	\$1,325.00K				
5	Y-12	Y-12 Building 9204-02E Elevator #1 Replacement	2017	2017	Not Submitted					
6	LANL	PF-4 Safety and Compliance System Upgrades	2017	2018	Not Submitted					
7	LLNL	Bldg 151 Hood Replacements in 4 Radiochemistry Laboratories	2017	2017	2017	\$3,750.00K				
8	PX	Flame/RAMS Fiber Network	2015	2017	2017	\$13,700.00K				
9	LANL	WETF Redundant Fire Detection In Tritium Process Areas Installation	2017	2018	2017	\$2,000.00K				
10	LANL	PF-4 Ventilation and Confinement System Upgrades Portfolio	2017	2019	2017	\$11,000.00K				
11	SNL	Bldg. 827 (Primary Standards Laboratory) Renovation (Funded in FY16 & 17)	2016	2018	2017	\$6,500.00K				
12	PX	Bay/Cell Safety Improvements, Building 12-104 B9, B11, B13, & B15	2017	2018	2018		\$13,100.00K			
13	SRNS	Replace Obsolete Oxygen Monitors (L4)	2017	2018	2017	\$1,325.00K				
14	LLNL	HEAF Fume Hood Exhaust (FHE) Ventilation System Replacement	2017	2017	2018		\$3,800.00K			
15	SNL	Replace Domestic Water and Fire Protection Lines, TA-1 (Funded in FY17)	2016	2017	2018		\$2,557.75K			
16	LLNL	Superblock Electrical Building System Upgrade	2017	2019	2018		\$3,500.00K			
17	KC	Bldgs 2 & 3 Special Applications Machining and Assembly Area Capital Equipment Replacement and Upgrade	2017	2017	2018		\$4,231.00K			
18	PX	RAMS Design/Prototype	2016	2017	2018		\$4,400.00K			
19	Y-12	Y-12 Building 9720-05 CAAS Replacement	2017	2018	Not Submitted					



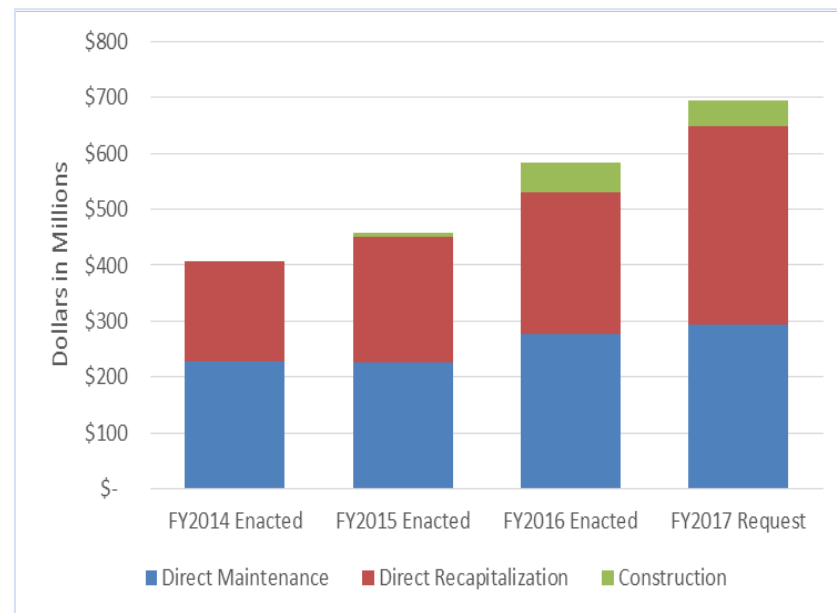
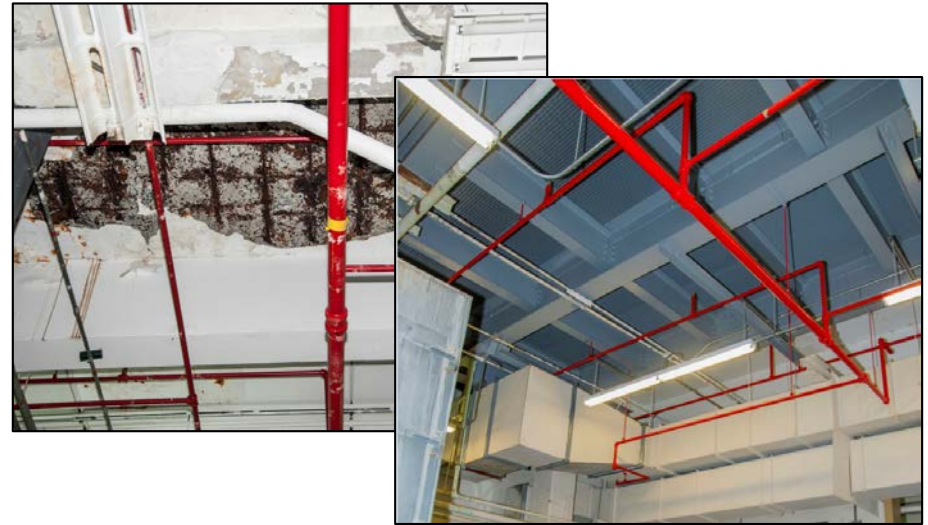
Office of Safety, Infrastructure, and Operations

NNSA Infrastructure Roadmap
March 2017

Safe Operations
Effective Infrastructure
Enterprise Services

- **Execution and Evaluation**

- Achieving results
- Gaining credibility



OFFICE OF SAFETY, INFRASTRUCTURE, AND OPERATIONS AGILE METHODOLOGY



DOE Strategic Plan
NNSA Enterprise Strategic Vision

OFFICE



Program Mgmt. Plan



Master Asset Plan



Budget Guidance



Office Portfolio IPL



Performance Metrics

PROGRAM



Budget Guidance



Program IPL



Performance Metrics

SITE



Site Plan



Budget Guidance



Site IPL



Performance Metrics

- Provide centralized PM support to NA-50 including cost, scope, and schedule management.
- Lead NA-50's Enterprise Risk Management process.
- Support the continuing development of the NA-50 Program Management Information System (PMIS), G2, aligning with NA-50 standards and processes.
- Provide operations and business analysis to enable continued process improvements and enhanced quality management.
- Provide data analysis expertise to analyze program data to identify trends, opportunities, and risks.

- The NA-50 PMO is providing benefits to NNSA
 - Implementing repeatable, transparent, logical processes
 - Transforming the role of the NA-50 Program Manager
 - Increasing transparency for senior leaders and stakeholders
 - Enabling data-driven and risk-informed decision-making
 - Gaining credibility
 - Receiving increased investments for infrastructure



- Be deliberate – always have a purpose behind what you do
- Inspect what you expect, otherwise it's not worth doing
- You're never going to get it right 100% of the time – be brave and take risks
- *“The whole is greater than the sum of its parts” - Aristotle*

Questions?