

Roof Asset Management Program

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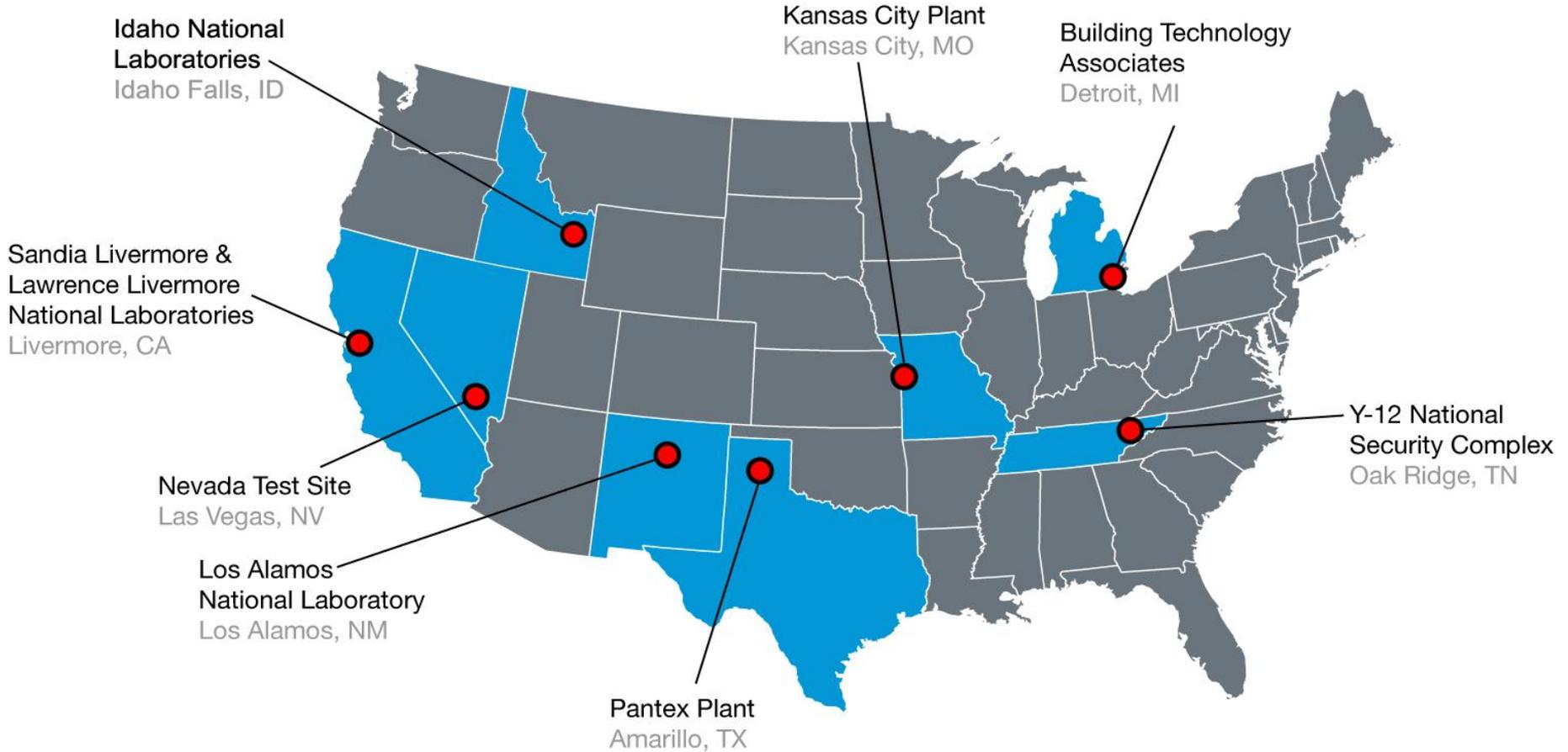
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Roof Asset Management Program

- Mission execution is through the *Facilities and Infrastructure Recapitalization Program (FIRP)*. FIRP is a capital renewal and sustainability program that was established to reduce the large backlog of deferred maintenance that had developed over the years to an appropriate level consistent with industry best practices
- Multi-site NA-52-funded program established to implement standard industry processes and best management practices across the Nuclear Weapons Complex
- Program provides dedicated supplemental funding for roofing assets and ensures proper use of HQ funding through a single prioritized list of roofing needs among the six partner sites
- Through a unique, corporate approach, RAMP manages roof assets across the complex, including life-extending repairs and replacements under one contract managed by the KCP
- Roofing Management Contractor – Building Technology Associates, Inc. (BTA), Detroit, Michigan

RAMP is the first multi-site construction program under one contract

Roof Asset Management Program Partners



Roof Asset Management Program

Where we've been:

- Roofing assets typically lack focus across Corporate America
- Historically, roofing assets at NSE sites have not been adequately supported due to limited funding and perceived higher priority needs
 - ◆ HQ had difficulty funding the highest priorities
 - ◆ Sites competed for limited resources for roofing needs
 - ◆ Focus on roofing assets varied significantly from site to site
 - ◆ Most sites used one or two roofing subcontractors
 - ◆ Reactive rather than proactive mindset
 - ◆ Little focus on roof life extension
- Roof Asset Management Program initiated to:
 - ◆ Implement standard industry processes and best management practices across NWC
 - ◆ Manage NSE roofing portfolio at the “corporate level”
 - ◆ Provide HQ one prioritized list of roofing needs across the NWC

Roof Asset Management Program

HQ Benefits

- ◆ **Centralized Management - Provides HQ one prioritized list of roofing needs across the complex based on objective, uniform criteria**
- ◆ **Manages NWC roofing portfolio at the “corporate level”**
- ◆ **Centralized Procurement - Faster & Cheaper**
- ◆ **Substantial energy savings due to increased insulation and incorporation of white and cool roofs**
- ◆ Implements standard industry processes and best management practices across the complex
- ◆ Leverages the buying power of the NNSA to achieve cost savings and better manages suppliers
- ◆ Optimizes roofing management through life-extending repairs
- ◆ Lessons Learned and best practices easily shared among the sites
- ◆ **Lower Burden rate for the entire program which allows more construction to be executed**

Roof Asset Management Program Support of Site Priorities

- **Meeting Site Mission Critical Needs**
 - LLNL - Bldg 191
 - NTS - Device Assembly Facility
 - LANL - TA-55 Plutonium Facility, TA-53 Accelerator
 - Pantex - Building 12-064, Mound Coating
 - Y-12 - Bldg 9215

Roof Asset Management Program Program Responsiveness

- 2007 PTX Hail Storm – Responded with leak mitigation immediately. Completed overall site assessment within a month. Designed and bid a repair program that executed 36,000 repairs over the next summer and fall
- 2009 PTX Storm Damage – Completed over 75 repairs to restore critical production within 10 days on Building 12-086. Normal contracting would have taken 6 weeks
- LANL Hail Damage – Comprehensive coating to remediate leakage on a 40,000 sf section of Building 03-040. Responded promptly after the storm preventing damage to the data center in the building
- NTS Wind Damage – Repair to restore the integrity of a 5000 sf portion of the roof that blew off Building 25-3125. Responded to the site need within days, completed the repair in two weeks

This was possible due to the robust processes and outstanding support and execution provided by the RAMP Partners

Roof Asset Management Program Site Benefits

- ◆ **Provides dedicated funding for roofing needs**
- ◆ Provides roofing expertise through a single roofing management contractor (provides both design and construction services)
- ◆ **Centralized procurement process results in faster contract awards**
- ◆ Through increased competition, costs per square foot are lower than historical costs despite significant cost increases
- ◆ **Brings new, qualified roofing subcontractors to each site**
- ◆ Standard industry processes, best management practices and lessons learned effectively shared among the sites
- ◆ **Reduced energy costs through increased insulation and incorporation of white and cool roofs**
- ◆ **Database of all roofing deficiencies helps sites prioritize work outside of the program and facilitates informed decisions**
- ◆ Reduced leaks due to optimal repairs and replacements, which increases production throughput
- ◆ Life-extending repairs provide long-term solutions instead of short-term repair and patch work
- ◆ Complex-wide priorities are based on third-party objective criteria

Roof Asset Management Program (\$K)

	HQ Funding Allocation	Supplemental Funding From HQ	FIRP Funding From Sites	RTBF/Other Funding From Sites	Total Funding Executed	Legacy DM Baseline Reductions (With RAMP & FIRP funding only)
FY04	\$5,000	\$400	\$0		\$5,400	\$2,269
FY05	\$15,000	\$196	\$1,745		\$16,941	\$6,988
FY06	\$6,000	\$1,102	\$3,845		\$10,947	\$8,871
FY07	\$15,000	\$200	\$700	\$1,245	\$17,145	\$10,502
FY08	\$15,000	\$0	\$10,638	\$49	\$25,687	\$20,641
FY09	\$10,000	\$237	\$5,783	\$0	\$16,020	\$8,196
FY10	\$11,000	\$1,980	\$500	\$445	\$13,925	\$24,809
Total	\$77,000	\$4,115	\$23,211	\$1,739	\$106,065	\$82,276

Over \$106M being executed through 2010;

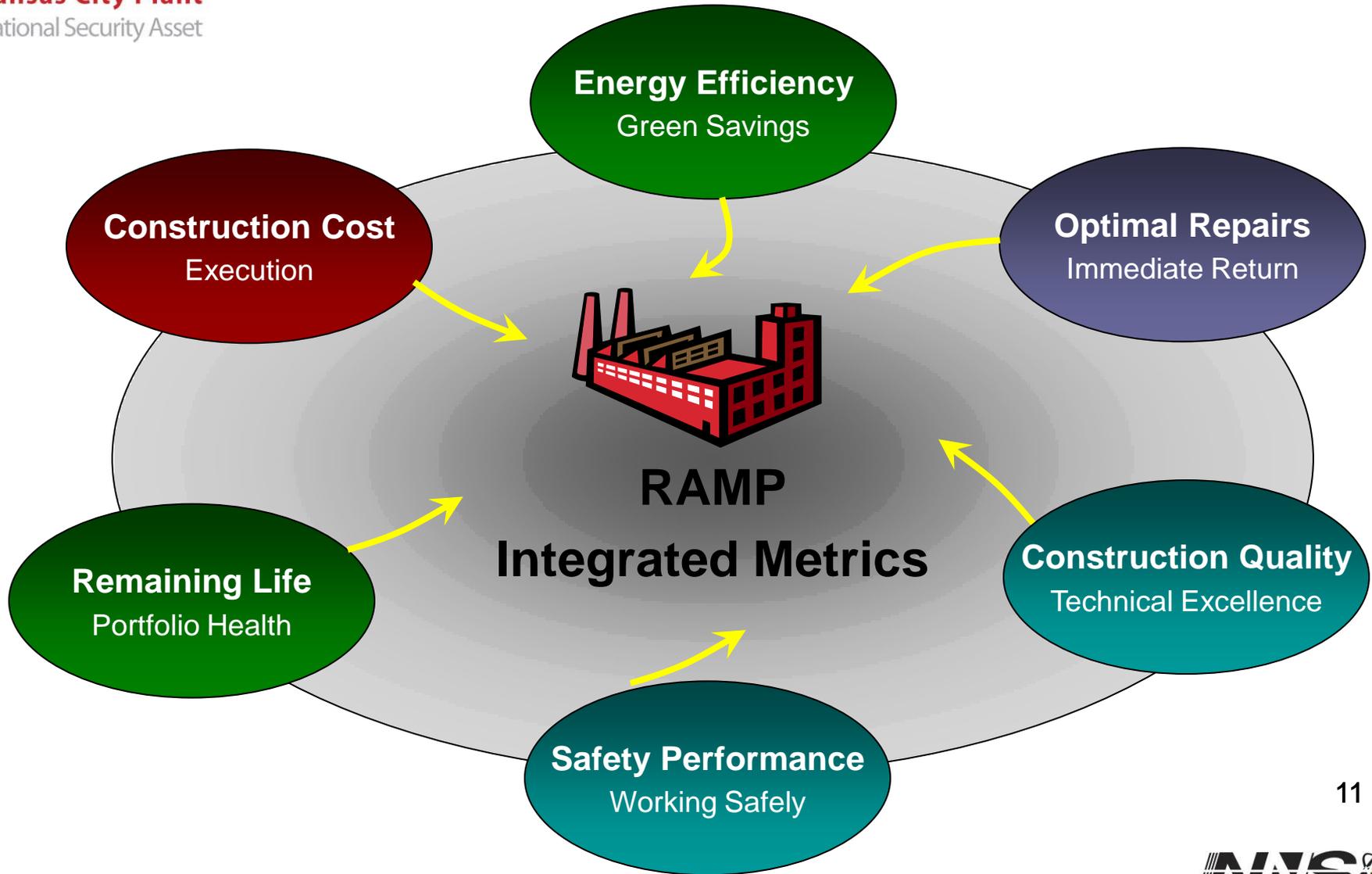
Significant contribution to FIRP Deferred Maintenance Reduction Goals!

Roof Asset Management Program Burden Savings (\$K)

	FY04-06 Construction Costs	FY07 Construction Costs	FY08 Construction Costs	FY09 Construction Costs	FY10 Construction Costs	Total	Estimated Burden at Site-Specific Rates
KCP	\$6,876	\$770	\$477	\$0	\$0	\$8,123	\$1,543
Y-12	\$3,936	\$2,689	\$4,338	\$2,410	\$2,201	\$15,170	\$2,665
Pantex	\$4,789	\$2,730	\$8,597	\$3,939	\$978	\$21,033	\$1,483
LANL	\$6,108	\$3,314	\$7,613	\$4,842	\$4,433	\$26,310	\$7,197
LLNL	\$871	\$791	\$1,085	\$609	\$1,358	\$4,714	\$340
NTS	\$3,822	\$1,807	\$778	\$2,255	\$449	\$9,111	\$2,858
SND					\$532	\$532	
Total	\$26,402	\$12,101	\$22,888	\$14,055	\$9,951	\$84,993	\$16,086
Actual RAMP Burden	\$960	\$360	\$380	\$1,700* *budgeted	\$1,348* *budgeted	\$4,748	

Over \$11 Million in burden charges avoided on roofing throughout the Complex

Roof Asset Management Program



Roof Asset Management Program Program Accomplishments

- **\$22 Million in value added roof life extension and preservation through proactive repairs**
- **\$11 Million in Construction Cost savings during a time when labor and material costs increased by 30-40%**
- **Increased average remaining life of roof inventory from 8 years to over 10 years**
- **Replaced 2.6 Million square feet of roof with more energy efficient sustainable roofs**
- **Eliminated \$82 Million in deferred maintenance**
- **In accordance with EO 13423, Reduce Energy Intensity and Design & Operate Sustainable Buildings. RAMP is reducing energy costs by an average of 70% annually on reroof areas by improving insulation packages and installing cool roofs**
- **For the 2.0 Million SF replaced under the program approx. \$540K in annual energy savings is realized**

Roof Asset Management Program Energy Savings



Replaced roof sections have snow, while original construction does not - days after a snow storm

LANL Roof Area

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Roof Asset Management Program

Examples of Lessons Learned

- Consolidation of work areas to minimize impact on mobilization and site support costs
- A change order management process that facilitates timely application of contingency and maintains visibility of execution issues
- Award of contracts and construction notice-to-proceed as early in the year as possible to avoid heat stress issues, rainy seasons, etc.
- Sharing of best practices and means & methods among sites on topics such as fall protection
- Utilization of roofing subcontractors to perform limited pre-work in order to expedite construction
- Development of detailed schedules including pre-construction activities that must be accomplished by the sites prior to construction execution
- Annual scope requires approval by each Site Office and Managing & Operating Contractor
- Routine daily/weekly/monthly meetings to ensure timely communication to resolve issues

Roof Asset Management Program Opportunities

- Consistent with the Administrator's commitment to the Secretary, share the model within DOE
 - Corporate Management Approach
 - Centralized Management & Procurement
 - Dedicated Management Contractor
 - Reduced Execution Costs
- NNSA has the opportunity to utilize the RAMP model in other areas (i.e. road construction, facility demolition, mechanical systems, etc.)

Roof Asset Management Program Summary

RAMP took risks and overcame them ...

- Developed approach that manages NNSA’s roof assets from a corporate perspective instead of 7 different site views...first ever NNSA multi-site construction program
 - ◆ Complex working together making decisions in the best interests of the “corporation”
- Robust partnership of Site Offices, M&O Contractors and world class roof management contractor
- Substantial cost savings due to acquisition strategy
 - ◆ Full and open competition has been achieved at all sites.
 - ◆ Sites are benefiting from the opportunity to develop relationships with new roofing subcontractors for work outside of RAMP.
- Program has been a leader in incorporation of energy reduction initiatives (increased insulation, white and cool roof installations)
- Program has earned support of Congress and Administration