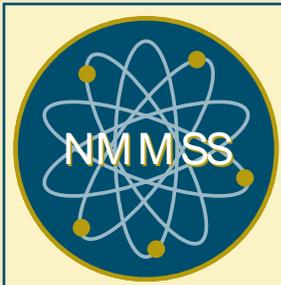


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Disposition Planning

Teaching Old Databases New Tricks

Dale Dunsworth
NNSA/Defense Programs
May 24, 2006

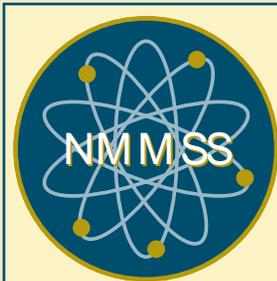


The Path to Complex 2030

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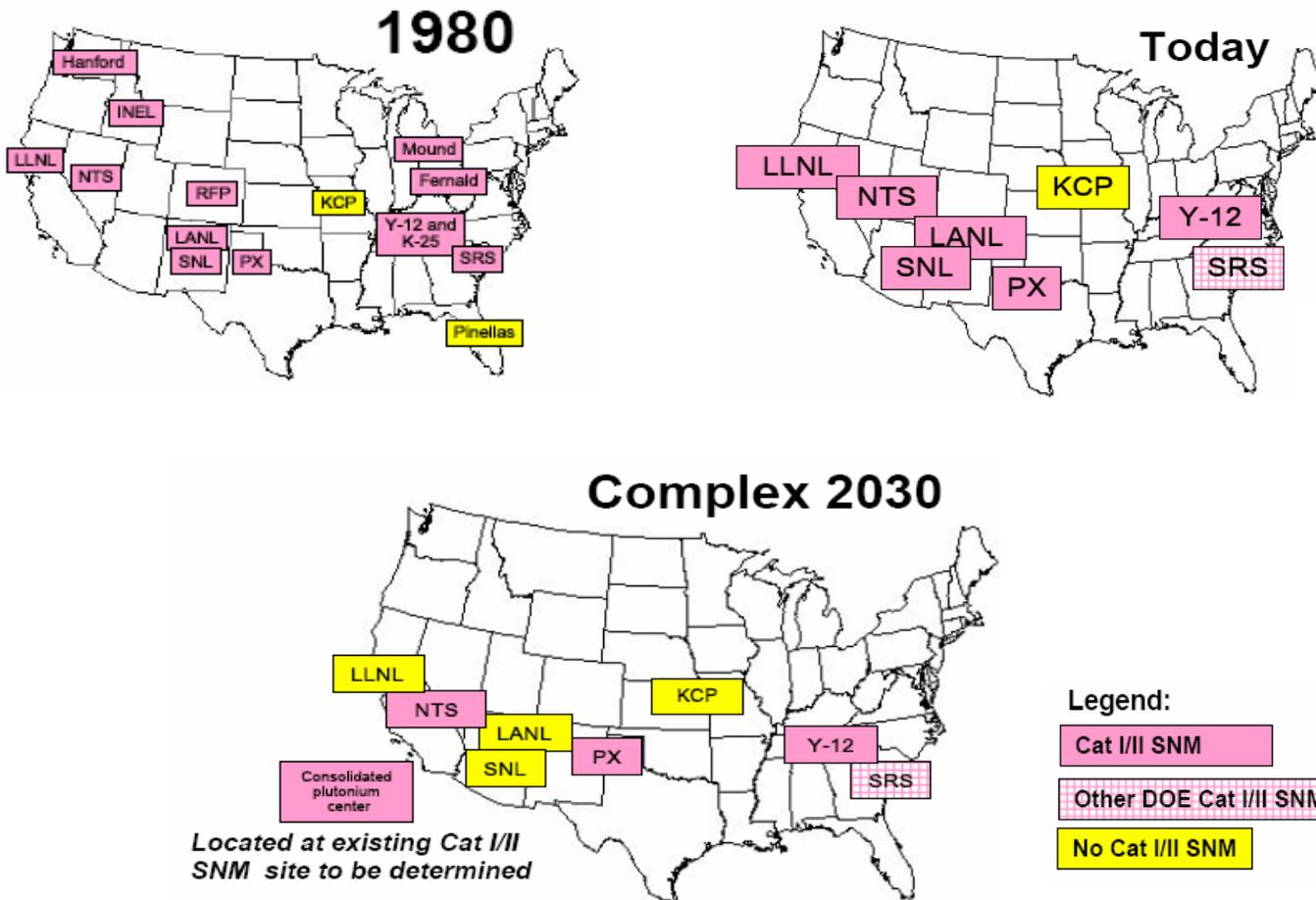
- Smaller stockpile
- Fewer sites with nuclear materials
- Fewer facilities with nuclear materials
- Smaller inventory of nuclear materials

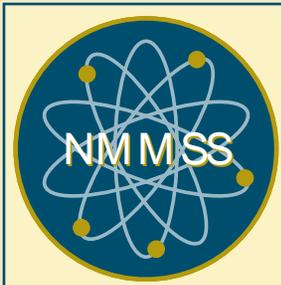
Excess nuclear materials must be eliminated to realize anticipated cost savings.



Weapons Complex Transformation

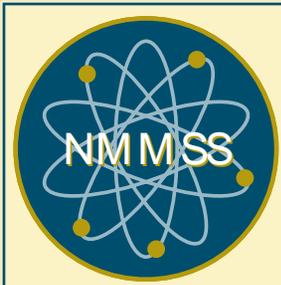
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The Materials

- Approximately half of DOE's accountable materials have been declared excess to weapons program requirements
- More on the way?
- Almost all nuclear material must be removed from current locations
 - Deinventory of SNL by 2008
 - Deinventory of LLNL by 2014
 - Y-12 onsite consolidation by 2015
 - Deinventory of LANL by 2022
 - Pantex – Accelerated Dismantlement

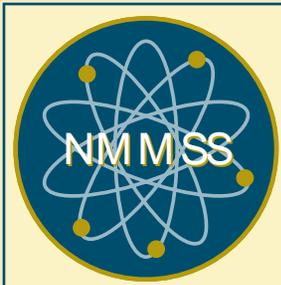


Materials Disposition Planning

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- What materials are needed to support ongoing programs?
- What capabilities are available for disposition of unneeded material?
- What new disposition capabilities are needed and at what capacity?
- How do we prioritize disposition activities for greatest cost savings?
- Are certified shipping containers available to support shipments?
- Are secure transportation assets available to support disposition/consolidation activities?

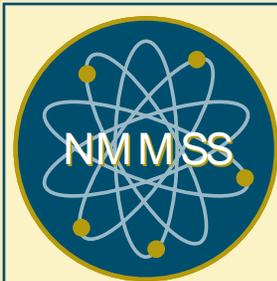
These questions must be answered in a systematic fashion, with the best available information to support informed decision-making.



Nuclear Material Inventory Assessment (NMIA)

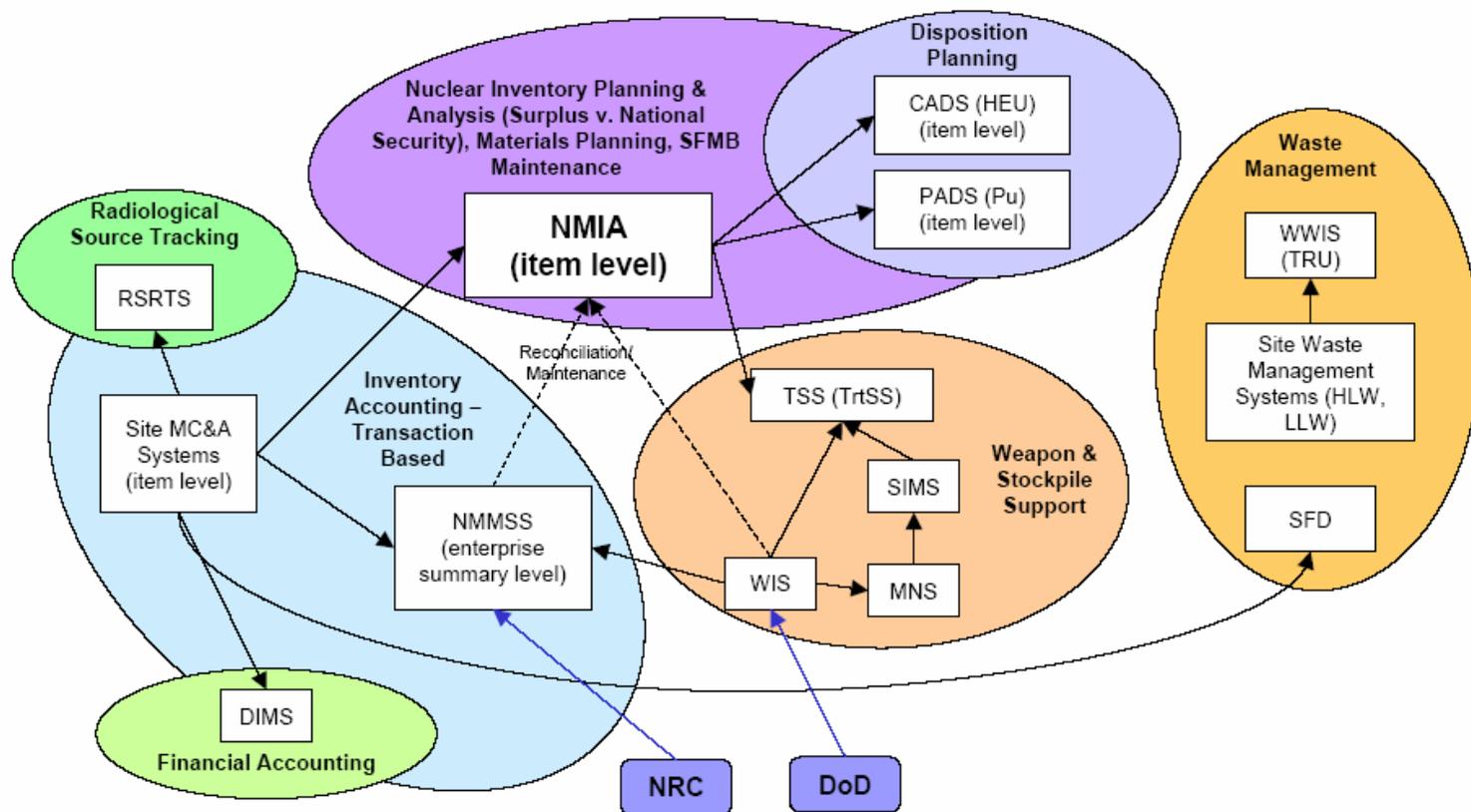
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- An annual, complexwide assessment of accountable nuclear materials
- Assesses the same materials (“Accountable”) that are tracked by NMMSS
 - Pu-239 (Weapons Grade, Fuel Grade, Reactor Grade)
 - Uranium-235 (HEU, LEU, NU, DU)
 - Others – Americium-241, Americium-243, Berkelium, Californium, Curium, Deuterium, Lithium, Neptunium, Pu-238, Pu-242, Thorium, Tritium, U-233
- Material assessed at the “item-level”, with additional descriptive information

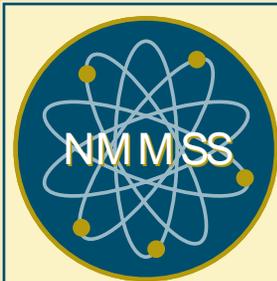


Where does the NMIA fit with other systems?

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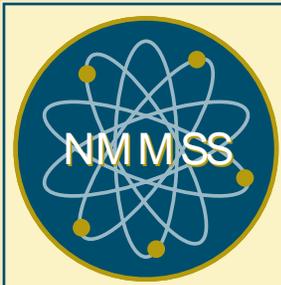
Source: e-Gov Nuclear Material Accountability Review



Site Submitted Information

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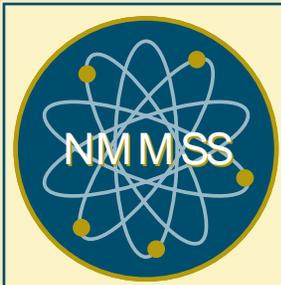
- Standard fields used for inventory identification and linking to NMMSS.
 - UNIQUE_SITE_ID
 - ITEM_ID
 - LRIS (Locational RIS)
 - PROJ (Project Number)
 - COEI (Composition of Ending Inventory)
 - MTC (Material Type Code)
 - ASSAY
 - SELEMENT (Site-submitted Element weight)
 - SISOTOPE (Site-submitted Isotopic weight)
- Fields added to support nuclear materials management initiatives.
 - IDES (Item Descriptor Code)
 - Provides material form and function information.
 - NS (National Security) Y or N
 - SFMB (Surplus Fissile Material Baseline) Y or N
 - RU (Restricted Use – restricted from weapons use) Y or N
 - USE (Defined Use) Y or N
 - DISP_COST (Disposition Cost)
 - For Office of Financial Policy
 - USER_PROG (User Program)



NMDCCC Data Call

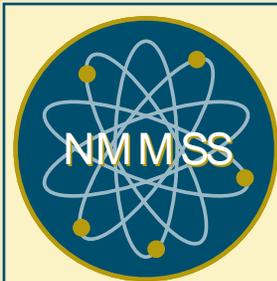
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- Consolidation Committee recognized the need for additional information to support disposition planning and tracking
 - May 9th, NMDCCC Chair signed a memo directing the sites to provide information on disposition paths for all Surplus and excess nuclear materials
 - This information will be combined with existing NMIA data to aid in development of comprehensive disposition plans
 - Materials without disposition plans will be readily identifiable
 - Site disposition planning information will be validated by receiving sites/programs



The Request

- Develop a list (table) of material groups with similar characteristics and common disposition pathways
 - Use existing site disposition plans, such as the “Big List” developed by the Inactive Actinides Working Group (IAWG) for NNSA sites.
 - Each disposition path is assigned a unique disposition path key.
- Link each item in the NMIA to the appropriate disposition path via the disposition path key.



Example Tables

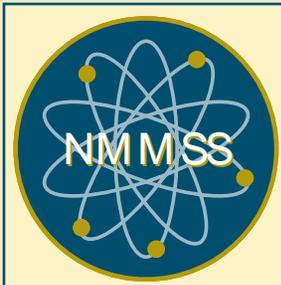
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NMIA Submittal (Inventory Table)										
ID	ITEM_ID	MATL	LRIS	PROJ	COEI	MTC	ELEMENT	ISOTOPE	NS	...
1	can01	DU	FZF	F-DP-0000-000	222	11	1	1	N	
2	can01	HEU	FZF	F-DP-0000-000	222	38	1	1	Y	
3	drum02	PU	AUA	A-DP-0000-000	309	52	1	1	Y	
...										

This year, we will request these two tables, because the NMIA table has already been submitted. The linking table links paths to NMIA entries.

Linking Table		DISP_	DISP_	RESP_	PROJ_	DISP_	DISP_	DISP_	GEN_
ID	DKEY	GRP_ID	PROJ_TITL	PROGRAM	STATUS	RIS	PROCESS	YEARS	COMMENTS
1	LAN01	LAN01	LAHEU	DP	In Progress	FZF	LAN00	FY0608	Characterization and repackaging schedule goal is completion beyond of FY 05 assuming added funding; funding is requested until received.
2	LAN02	LAN02	LA Fuel Grade Pu	DP	Not Started	DZA	LAN00	TBD	These items are scheduled to be repacked by 2009 but can be done sooner if needed.
3	LLL05	LLL05	LAWG Pu Contam EU	NE	Not Started	NAB	LLL00	TBD	Part of IADG materials but could have technology developed at LANL
4	SNL03	SNL03	Pu/Be Sources	DP	In Progress	WIPP	WIP01	FY0607	Neutron sources that have DP pedigree and will go to WIPP
...									

Disposition Groups will be integrated into future NMIA submittals



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Summary

- Materials disposition is a key element to transformation of the nuclear weapons complex
- Success depends upon identifying, and funding, disposition paths for *all* excess materials
- Addition of disposition information to the NMIA will greatly enhance our ability to develop comprehensive disposition plans
 - No orphan materials left behind
 - Supports disposition capability/capacity planning
 - Allows validation of site planning assumptions
 - Aids in resource planning for containers and secure transportation