Acceptance of Classified Excess Components for Disposal at Area 5

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Spring 2012 Waste Generator Workshop
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Weapons Dismantlement and Disposal (WDD) - Scope

- Department of Energy (DOE) tasked WDD working group to disposition the large inventory of legacy classified weapon components scattered across the complex

  - Key Issue: There is no complex-wide cost-effective classified weapon disposition strategy

  - The methods differ based on immediate site needs

  - Only a small portion of the inventory has been dispositioned and it has not always been in a cost-effective manner
High Risk Personal Property (HRPP)

Why is it so hard: HRPP is specially designed or prepared property, export controlled property, nuclear weapon components or weapon like components, and proliferation sensitive property.

- In April 2010, NNSS requested a waiver from the Office of Defense Nuclear Nonproliferation (NA-20) to permit the long-term burial of HRPP within the Radioactive Waste Management Site (RWMS).

- On October 5, 2010, NA-20 approved the burial of HRPP currently in RWMS, but required future HRPP follow 41 CFR 109-1.53.
High Risk Personal Property (HRPP)

- NNSS believed that the regulations in Subpart 109 with respect to “disposition” of HRPP were not technically operative until HRPP leaves DOE possession and control.
  - Is it property?
  - Is it offsite disposal?

- NNSS is located on land which is in the sole possession of the agency and will never be released to the public.

- A letter of concurrence was issued July 14, 2011, from the NA-20 organization to permanently bury HRPP at DOE Owned and Controlled sites. The letter does not apply to pits, canned subassemblies, neutron generators, and detonators unless they have been demilitarized.
What’s Happened

• HRPP letter allowing permanent disposal of classified items without sanitization at NNSS – July 14, 2011

• Revision 9 of the NNSS WAC includes classified, non-radioactive, non-hazardous waste disposal – February 29, 2012

• First non-rad, non-hazardous classified items received for disposal (180 cubic feet) – March 20, 2012 (exemption for disposal)

• Submitted Solid Waste Disposal Site permit modification for classified, non-radioactive, non-hazardous waste disposal – April 16, 2012

• Received permit modification for the Mixed Waste Disposal Unit to accept non-radioactive hazardous classified waste – April 3, 2012

• Macroencapsulation equivalency letter submitted to State of Nevada for review – Concurrence on Concept April 12, 2012
Timeline of Classified Disposal at Area 5

October 2010
- Area 5 restricted to low-level/mixed low-level waste (LLW/MLLW)
- Legacy Items for disposal restricted to those that had been sanitized
- Storage in “disposal like configuration” no longer allowed (October 5th letter)

January 2011
- WDD weapons summit in Las Vegas
- Actions assigned from WDD summit
  - Submit a second request for disposal of HRPP
  - Establish a pilot project to prove out the NNSS methodology

July 2011
- NA-10/NA-20 (Office of Defense Nuclear Nonproliferation) concurrence on HRPP
- Disposal of legacy items allowed at NNSS without sanitization

December 2011
- Identified Kansas City Plant (KCP) to be the first pilot project
- Presented capabilities at the WDD summit at the Savanna River Site and at the Permafix conference
Timeline of Classified Disposal at Area 5 (continued)

**February 2012**
- Waste Acceptance Criteria changed to accept non-radioactive and non-hazardous classified
- First profile approved for non-radioactive/non-hazardous waste

**March 2012**
- Permit mod received for non-radioactive hazardous waste
- Draft Permit mod submitted for non-radioactive non-hazardous solid waste
- Successfully completed phase I of pilot project at KCP
- **1st shipment received from KCP - non-radioactive non-hazardous legacy classified** (exemption letter from NDEP for disposal)

**NEXT STEPS**
- Treatment capabilities through third party vendors specific for legacy classified
- Letter of equivalency for inherently macro encapsulated components
- Site visits to prepare inventories
- Business case preparation (both NSTec and NA-12 funding)
- Success stories
DOE Complex Needs

• Establish weapon component definition and how it relates to the property regulation involving HRPP
  – COMPLETE: Letter issued July 14, 2011 – Concurrence to permanently bury HRPP at DOE owned and controlled sites after dismantlement and demilitarize operations; concurrence does not include pits, canned subassemblies, neutron generators, or detonators unless these items have been demilitarized and/or sanitized

• Establish a complex-wide legacy weapon disposition strategy that is applied consistently and in a compliant and cost-effective manner
  – Need support from Headquarters
Complex Issues/NNSS Solutions

• The variability in components and methods required to dispose them are complicated and expensive
  – NNSS will provide treatment capabilities that allow components to be dispositioned without disassembly

• Items are not packaged in U.S. Department of Transportation (DOT) approved containers
  – NNSS will supply containers in which items can be placed to meet DOT requirements

• Generator Facilities are not approved for radiological or Beryllium (Be) work
  – NNSS has a DOE approved Be program and can repack Be and radiologically contaminated items if necessary
Complex Issues/NNSS Solutions (continued)

- Generating sites are not qualified to perform the repackaging operation (NNSS WAC Certification Program)
  - NNSS will act as the generator and “supply” the certification program in these cases via the Waste Generator Services Group
- Additional characterization information or component processing required
  - NNSS will assist in the characterization if needed
- Lack of funding
  - Efficiencies gained through infrastructure reduction will provide necessary funding
NNSS Needs

• Three key items are needed for the NNSS to become a “one-stop-shop" for legacy and newly retired weapon components

1. **Non-radioactive/non-hazardous disposal**: Solid waste permit modification submitted includes non-radiological/non-hazardous classified waste in existing permit for asbestiform and hydrocarbon burdened waste at Area 5 – *Submitted April 16th*

2. **Non-radioactive/hazardous disposal**: Mixed waste permit modification includes non-radiological hazardous waste in existing Resource Conservation and Recovery Act (RCRA) permitted disposal cell – *Complete (April 3, 2012)*

3. **Non-radioactive/hazardous treatment**: Existing commercial treatment contracts will be used
## Current Status

<table>
<thead>
<tr>
<th>Location</th>
<th>Funding</th>
<th>Items</th>
<th>Program/Disposition</th>
<th>Comments/Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sandia California</td>
<td>$400k from WDD</td>
<td>26 legacy items</td>
<td>Waste Disposal – Clean out of LLNL Facility</td>
<td>SNL will characterize, package and ship items</td>
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<td></td>
<td>SEPT 30, 2012</td>
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<td>NEEDS TREATMENT</td>
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<tr>
<td>Sandia California/New Mexico</td>
<td>$213k to Defense Experiments and Stockpile Stewardship (DESS)</td>
<td>Trainers/depleted uranium parts</td>
<td>Supports National Center for Nuclear Security/DESS program and disposal</td>
<td>Finalize needed units list</td>
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<td>SEPT 30, 2012</td>
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<td>NEEDS TREATMENT</td>
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<tr>
<td>Sandia New Mexico</td>
<td>Funded via Sandia Albuquerque</td>
<td>4,000 lbs of used canisters</td>
<td>Waste disposal</td>
<td>Sandia National Laboratory will characterize, package and ship items</td>
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<td>SEPT 30, 2012</td>
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<tr>
<td>Honeywell Kansas City</td>
<td>$57k</td>
<td>Non rad components</td>
<td>Waste disposal – Clean out of old Kansas City facility for move by 2014</td>
<td>NNSS packed March 13 and 14 KCP shipped week of March 19th NNSS disposed on March 20th</td>
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<tr>
<td>PHASE I - 180 ft3</td>
<td>MARCH 30, 2012</td>
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<tr>
<td>Honeywell Kansas City</td>
<td>Funded from KCP</td>
<td>Radioactive and non-radioactive hazardous components</td>
<td>Waste disposal – Clean out of old Kansas City facility for move by 2014</td>
<td>Finalize needed units list Characterize units for shipment to NNSS NEEDS TREATMENT</td>
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<tr>
<td>PHASE II/PHASE III</td>
<td>SEPT 30, 2014</td>
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Exploring Explosives/Thermal Batteries

- Multiple sites have requested support for DOT class 1.3/1.4 explosives (Pantex, Sandia, Livermore, etc.)

- NNSS currently has a permit for explosives but is limited to those generated on site
  - Would require modifications to explosive ordnance disposal unit (EODU) permit
  - Would require modifications to air permit

- Are the inventories across the sites at a level that would justify modifying the NNSS permit?
WDD Inventory/Cost Savings

- NNSS can help DOE complex reduce infrastructure costs from storing legacy/retired classified or export controlled items in warehouses
- NNSS staff visiting other DOE sites needs HQ support
  - Identify point of contact for each site
  - Support NNSS in obtaining inventories
  - Provide accurate infrastructure costs
  - Provide square footage of warehouse space currently used for storing legacy/retired items
Conclusion

• Things have changed
  – NNSS can take non-radioactive hazardous and non-hazardous CLASSIFIED components
  – Sanitization is not required prior to disposal
  – Some items meet the definition of macro encapsulation without further treatment
  – Working to establish a complex-wide legacy weapon disposition strategy that can be applied consistently and in a compliant and cost-effective manner

• Ask for help if you have questions or need clarification
  (Information sheets available)
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Questions