



U.S. DEPARTMENT OF  
**ENERGY**

*Presentation to the  
Savannah River Site Citizens Advisory Board*

**Nuclear Materials Process  
Planning for FY2010  
September 28, 2009**

**Carl Lanigan  
Federal Project Director  
Nuclear Materials Program Division  
Savannah River Operations Office**



**EM** *Environmental Management*  
safety ♦ performance ♦ cleanup ♦ closure

# Acronyms

Al – Aluminum

ATR – Advanced Test Reactor

DOE – Department of Energy

DRR – Domestic Research Reactor

EM – DOE Office of Environmental  
Management

EUD – Enriched Uranium Disposition

FRR – Foreign Research Reactor

FY – Fiscal Year

HEU – Highly Enriched Uranium >20%

HFIR – High Flux Isotope Reactor

INL – Idaho National Laboratory

IPT – Integrated Project Team

LAC – L Area Complex

LEU – Low Enriched Uranium <20%

LWT – Legal Weight Truck

LTH – L-Area To H-Area

MTHM – Metric Tons Heavy Metal

MTR - Material Test Reactor

NE – DOE Office of Nuclear Energy

NNSA – National Nuclear Security  
Administration

ORNL – Oak Ridge National  
Laboratory

SC – DOE Office of Science

SNF – Spent Nuclear Fuel

SRNS –Savannah River Nuclear  
Solutions

SRS – Savannah River Site



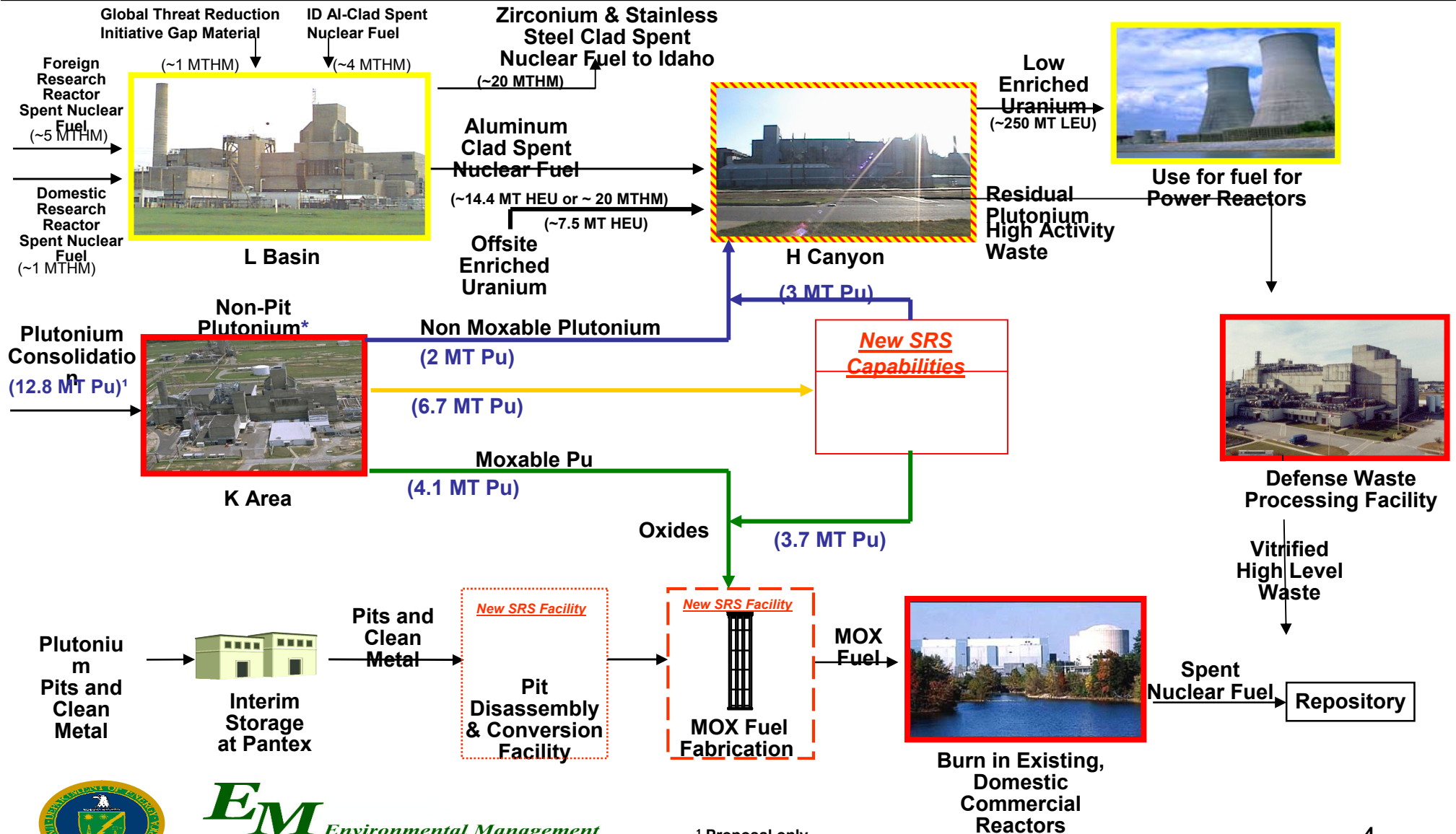
# *Purpose*

➤ **Describe the proposed work plan in FY2010 for:**

- **H-Canyon/HB Line**
- **K-Area Complex**



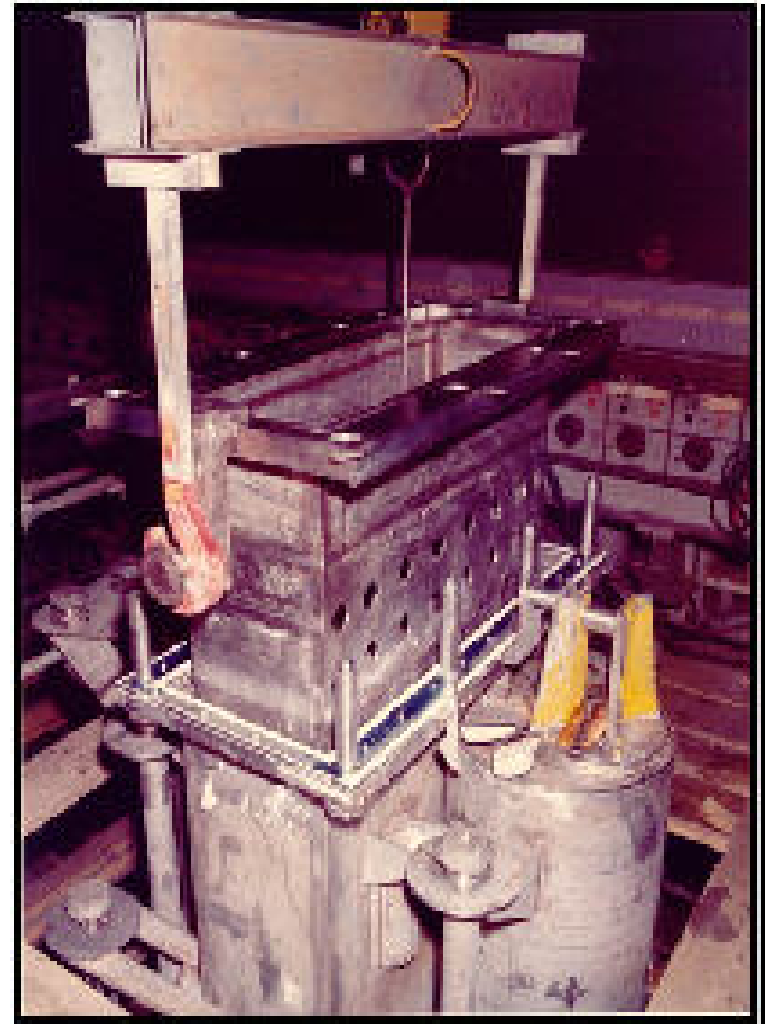
# Nuclear Materials Disposition Process



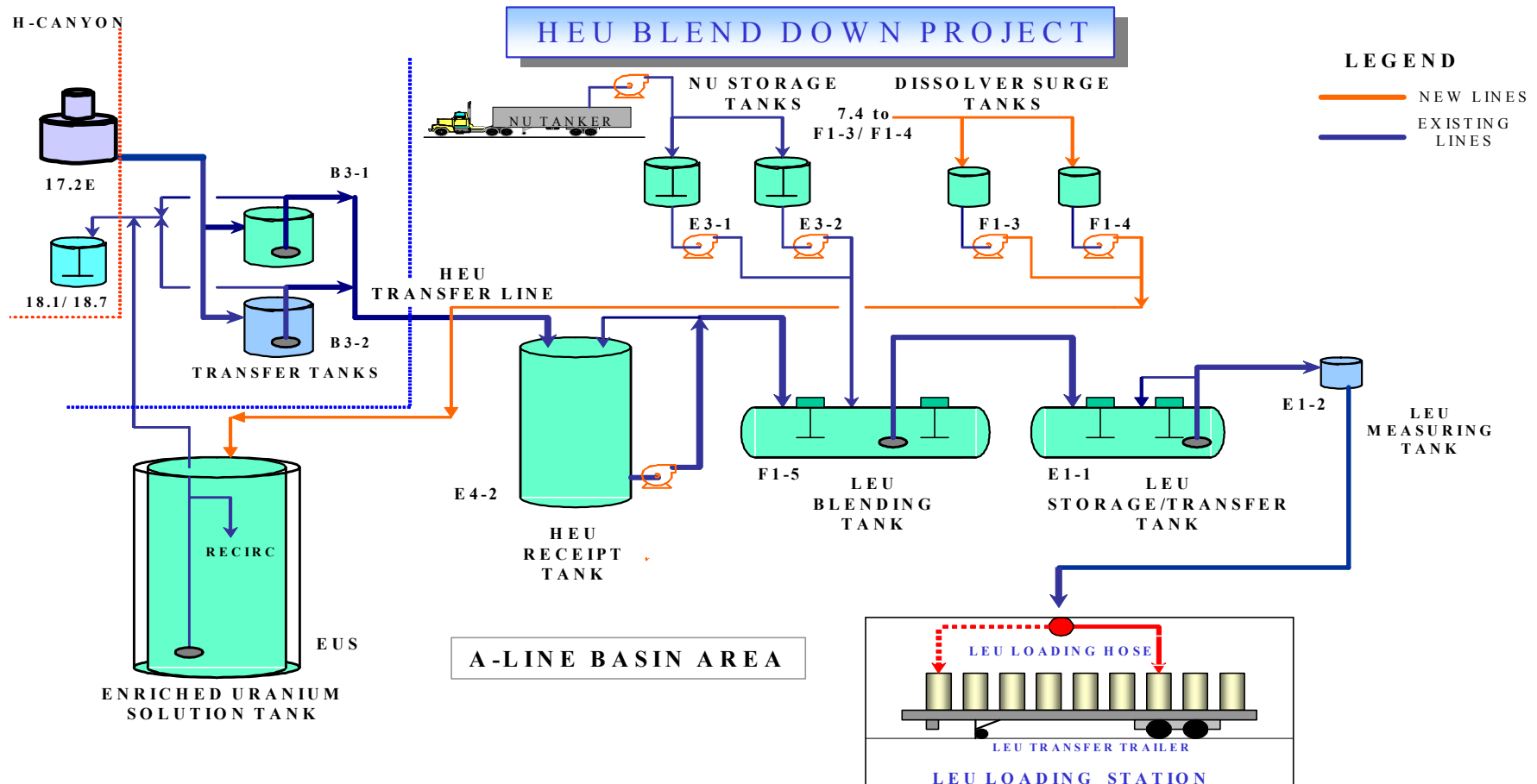
# *FY10 Goals*

## *H-Canyon/HB Line*

- **Complete Un-irradiated HEU dissolution by September 2010**
  - **Expecting final HEU receipts**
    - **HEU-Molybdenum**
    - **Aberdeen**
    - **SPR II**
- **Load 20 LEU trailers by September 2010**
- **After Un-irradiated HEU campaign is complete, transition to Spent Nuclear Fuel**



# HEU TO LEU



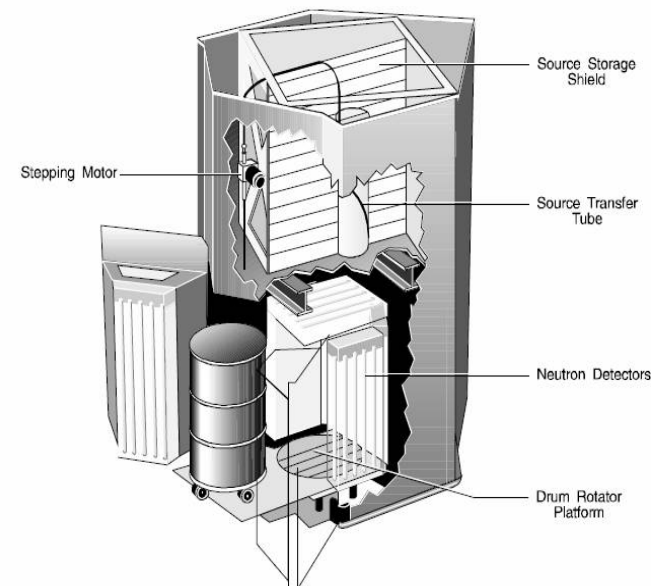
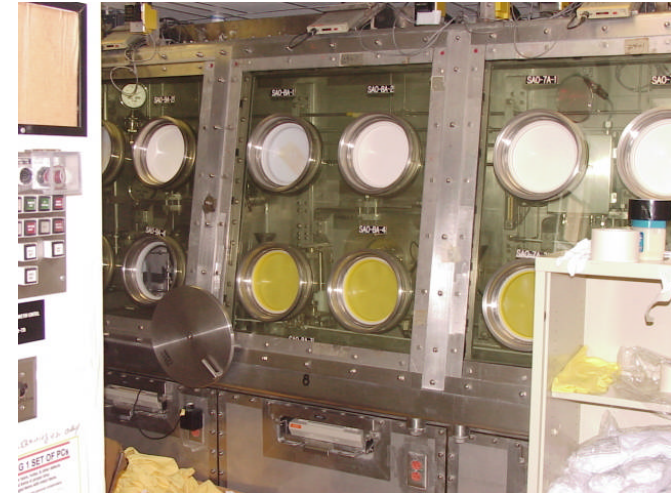
## *FY10 Goals H-Canyon/HB Line*

- **Continue dissolving plutonium**
  - **This material will come from**
    - **Long term Pu surveillance program**
    - **Excess Pu that is unsuitable for MOX feed or disposition through WIPP**
- **Support Hanford's de-inventory of low activity Pu material**



# *FY10 Goals K-Area Complex*

- **Continue long term Pu surveillance program**
  - ▣ DOE technical standard requires 18 destructive examinations and 34 non-destructive examinations per year
- **Complete fabrication and installation of Californium 'Shuffler'**
- **Begin design of new storage vault**





# *Summary and Path Forward*

- **All of the aforementioned goals are dependent upon the actual FY2010 funding that is received.**
- **There are a number of studies being finalized and/or initiated that may change the goals presented here.**
- **Allen Gunter will discuss the purpose of these studies.**





U.S. DEPARTMENT OF  
**ENERGY**

*Presentation to  
Savannah River Site Citizens Advisory Board*

**Spent Fuel Project Planning  
for FY2010**

**September 28, 2009**

**Dawn Gillas, Federal Program Manager  
Carl Lanigan, Federal Project Director PBS 12  
Nuclear Material Programs Division, DOE-SR**



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# *Purpose*

## **Spent Fuel Project FY2010 Activities**

- Railroad repairs
- On-site transport of SNF (70-ton cask)
- L-Basin crane upgrades
- INL SNF Exchange
- FRR/DRR Receipts
- Summary



# *L to H Transfers*

## **Preparations to ship SNF from L to H Area**

- **Onsite Railroad Upgrade**
  - **Will finish in FY2010**
- **Upgrade of 70-Ton Casks for Onsite Shipping**
  - **As-built drawings complete for all 5 casks to support design**
  - **Design work completed June 2009 for required safety upgrades**
  - **Cask modifications to be performed FY2010 (3 casks)**
- **L Area Crane Upgrade**
  - **Modifications required to meet single point failure criteria for 70-Ton cask handling (DOE 420.1B). To complete FY2010.**
- **First shipment from L to H Area planned for FY2011.**



# *INL SNF Exchange*

## **Preparations for shipping non-AI-based SNF to INL and receiving AI-based SNF from INL**

- **FY10 funding would support:**
  - **Start of procurement and licensing of a commercial cask for the exchange**
  - **Start of L Area project to modify cask and fuel handling equipment for SNF packaging and cask loading**
- **INL Exchange shipments estimated to begin in FY2012**



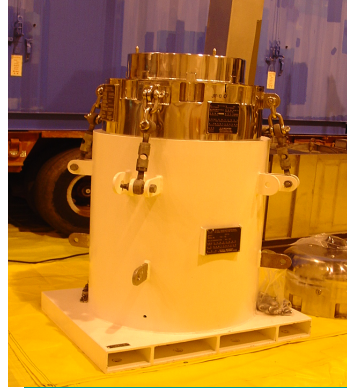
# Approved SNF Casks



**GNS-16**



**TN-7/2**



**JRF-90Y-950K**



**LWT**



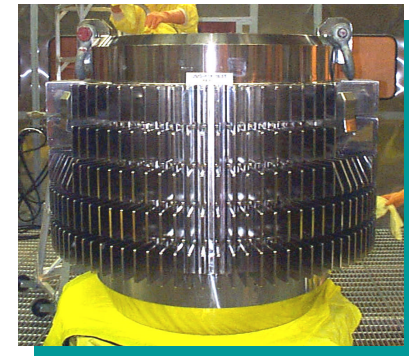
**JRC-80Y-20T**



**TN-MTR**



**GE-2000**



**JMS-87Y-18.5T**





## *L to H Transfers and INL SNF Exchange*

- **Current baseline - H Canyon starts processing SNF May 2011**
  - **Current (May 2009) L Area inventory: ~12,000 assemblies**
  - **Future FRR/DRR receipts: ~ 3,000 assemblies**
  - **INL SNF Exchange receipts: ~ 4,000 assemblies**
  - **Total SNF to be processed: ~19,000 assemblies**
  
- **Current baseline – SNF Exchange starts April 2012**
  - **L Area SS/Zr-clad inventory to INL: ~ 2,000 items**
  - **INL Al-clad inventory: ~ 4,000 assemblies**
  - **Approximately 20 shipments per year each way thru FY2019**





# *FY10 FRR/DRR Receipts*

- **Planned receipts in FY2010**
- **DRR receipts from:**
  - NIST (Maryland)
  - MURR (Missouri)
  - MIT (Massachusetts)
  - HIFR (Tennessee)
- **FRR receipts from:**
  - Germany
  - Israel
  - Japan
  - Turkey
  - Chile (GAP)



# *Summary*

- **L – Area SNF receipt and storage mission ends FY 2019**
- **LTH shipments begin FY2011**
- **LTH preparations begin continue in FY2010**
- **INL Exchange shipments begin in FY2012**
- **FRR/DRR receipts continue**
- **All of the aforementioned goals are dependent upon the actual FY2010 funding that is received.**

