



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
SCIENCE

**Review of Radiation Control and Materials
Release Procedures and Practices at the
Thomas Jefferson National Accelerator Facility**

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Overview

– Objectives

- Assess status of radiological clearance programs against July 2000 Secretarial mandates (e.g., suspension memoranda)
- Evaluate inventories of excess, obsolete, and surplus equipment and materials
- Provide assistance to sites where possible to expedite disposition of unwanted items

– Team Membership

- Mr. Scott Davis, Office of Science, Environment, Safety and Health Division, SC-31.1 (Team Lead)
- Mr. John Blaikie, Office of Science, Environment, Safety and Health Division, SC-31.1
- Ms. Amanda Anderson, Office of Environmental Policy and Assistance, HS-22
- Mr. Peter O'Connell, Office of Worker Safety and Health Policy, HS-11
- Mr. Richard W. Meehan, Office of Nuclear Materials Integration, NA-58 (Technical Advisor)
- Observers
 - Mr. Bruce Chrisman (FERMI), COO Representative
 - Mr. Jim Allan, SLAC Representative
 - Maj. David Pugh, Office of Safety, NA-171.2
 - Mr. John Stiver, SC&A
- Ms. Patricia Hunt, TJSO, Site Liaison



Proficiencies

- **Radiological Materials Inventory Tracking and Accounting system has improved since 2000.**
- **Applying MARSAME principles to decisions for the release of general property**
- **Site progress in implementing DOE O 5400.5 (e.g., TBDs)**
- **Site improvements in the development of a technical basis for Survey Sensitivity**
- **Property excess form changes to include a survey date will improve tracking capabilities**
- **Current construction effort to allow for better control of accumulation areas**
- **Site improvements in communication with the public through the use of Annual Site Environment Report (ASER) reports, public site tours, and open house**
- **Radiation Control Technician (RCT) demonstrated good technique in instruments selection, surveyed items for clearance, and handled anomalies.**



Observations

- **Site implementation of Suspension guidance is applied in a conservative manner (e.g., all material from accelerator enclosures)**
- **Moratorium and Suspension policy, as implemented, needs clarification. (no suspension on concrete, Vertical Test Area, Bldg 36)**
- **Suspension and Moratorium Impacts (i.e., costs) are not well understood or documented**
- **Radiological and materials release processes (survey log and property release forms) could be improved to provide better tracking and accountability for material clearance purposes**
- **Materials and equipment accumulation areas and radiological practices need to be strengthened (possible co-mingling of material in lay-down area)**
- **Property Custodians, Property Management and Radiological Control programs should develop a common set of goals to integrate Site Operations**
- **There is no independent verification process at TJ for clearance of material IAW 5400.5**



Site and Project Specific Impacts, as provided

	Volume (cuft)	Area (sqft)	Landfill burial (Tipping Fee)	Shipping Cost	Labor Cost
Suspension Total ()			\$	\$	\$
Suspension Total ()			\$	\$	\$
Property Control (Hold)			\$	\$	\$
SUBTOTALS			\$	\$	\$
TOTAL					\$



Next Steps

- **Develop and issue supplemental guidance for TJ to define the extent of the current suspension policy with regard to**
 - Concrete Shield Blocks
 - Concrete is excluded from suspension (e.g., not metal)
 - Rebar excluded from suspension (established guidance)
 - Rebar subject to moratorium if it contains induced activity
 - TJ has a significant number of blocks that have no detectable activity in/on concrete or rebar.
- **Similar issues likely at other SC sites.**