

# *Environmental Restoration Projects FY10 Performance*

*Brookhaven National Laboratory  
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**BROOKHAVEN**  
NATIONAL LABORATORY

*a passion for discovery*



# AGENDA

- ERP's annual planning process
- ERP's FY10 Objectives and Targets
- Environmental Performance
- Pollution Prevention
- Safety Performance
- Looking forward: FY11 Goals and Objectives



# FY Planning Process

- ROD determines facility end state and scope of work
- Annual DOE-EM funding determines the portion of the scope that can be performed each year
- ERP's FY10 Baseline Schedule included the following scope:
  - BGRR Graphite Reactor Completion - Complete Readiness Assessments; remove Control Rods, Boron Shot, Roof Plugs, graphite pile and debris; ship wastes offsite
  - HFBR Stabilization Project – Prepare facility for long term storage
  - Bldg. 704 Fan House and Duct Service Building Demolition
  - Complete 801/811 Waste Transfer Line Removal started in '09
  - Complete most of the U/G Utilities Project
- ERP's FY11 work scope includes BGRR Bioshield Removal, Engineered CAP installation, HFBR Stack and U/G Utilities Project completion

# Environmental and Safety Goals



- BNL is certified to ISO 14001 (EMS) and 18001 (OSH): Vital supports to the Lab's Integrated Safety Management Program
- Systems are recertified triennially by NSF, Inc. (independent, not-for profit public safety and health auditing co.)
- Recertification requires:
  - **Top Management commitment** to evaluate performance annually
    - Adequacy – is the BNL ESSH Policy implemented appropriately
    - Suitability – does it fit BNL operations
    - Effectiveness – is it achieving the desired results
  - **Continual Improvement** → Objectives/Targets must be developed each year in support of BNL's ESSH Policy

# BNL ESSH Policy



## Environmental, Safety, Security, and Health Policy

Brookhaven National Laboratory

*This document is a statement of BNL's ESSH policy. BNL is a world leader in scientific research and strives to demonstrate excellence in protecting people, property and the environment.*

*I expect every employee, contractor, and guest to take personal responsibility for adhering to the following principles:*

- **Environment:** We protect the environment, conserve resources, and prevent pollution.
- **Safety:** We maintain a safe workplace and we plan our work and perform it safely. We take responsibility for the safety of ourselves, coworkers and guests.
- **Security:** We protect people, property, information, computing systems, and facilities.
- **Health:** We protect human health within our boundaries and in the surrounding community.
- **Compliance:** We achieve and maintain compliance with applicable ESSH requirements.
- **Community:** We maintain open, proactive and constructive relationships with our employees, neighbors, regulators, DOE, and our other stakeholders.
- **Continual Improvement:** We continually improve ESSH performance.

*In addition to my annual review of BNL's progress on ESSH goals and adherence to this policy, I invite all interested parties to provide me with input on our performance relative to this policy, and the policy itself.*

Signed

A handwritten signature in black ink, appearing to read "Sam Aronson".

Sam Aronson, Director

September 6, 2006



# Environmental and Safety Goals

- ESH focus areas developed through **Management Review** process (Oct/Nov):
  - Results of audits, assessments
  - Scope of environmental aspects/OSH hazards
  - ESH performance (reportable events, injuries, radiological exposure, etc.)
  - Concerns of relevant interested parties
- ESH focus areas are documented in business plans
  - Rolled up at the ALD level
  - High priority actions included in BNL's Annual Lab Plan (Dec)





# ERP Environmental Aspects



- Radioactive, Hazardous, Mixed & Regulated Industrial Waste Generation
- Historical Contamination
- Atmospheric Discharges
- Liquid Discharges
- Storage or Use of Chemicals or Radioactive Materials
- Historical/Cultural Resources

# ERP Work Hazards: OSHA's "Top Ten"

- Construction Safety
- Electrical Safety
- Lockout/Tagout
- Fall Protection
- Scaffolding
- Ladders
- Excavation
- Material Handling
- Respiratory Protection
- Chemicals (Hazard Communication)





# ERP's FY10 Objectives/Targets

- ✓ Achieve ROD-specific cleanup objectives
- ✓ **Zero** environmentally related reportable incidents
- ✓ Pollution Prevention
  - ✓ Reduce environmental vulnerabilities – Drain and isolate HFBR water systems; reduce article 12 footprint
  - ✓ Evaluate reuse of Bldg. 704 batteries at BNL
  - ✓ Reuse excess facility materials rather than waste them
- ✓ **Zero** Radiological Events
- ✓ **Zero** Worker Injuries
  - ✓ Strengthen **Safety Culture** through expanded work observation program (discussed later)

# BGRR Celebration – Graphite Pile Removed



# HFBR Stabilization – Reactor Confinement Building – Lights Off, Door Locked





# Bldg. 704 Fan House - Demolished





# Environmental Performance Indicators

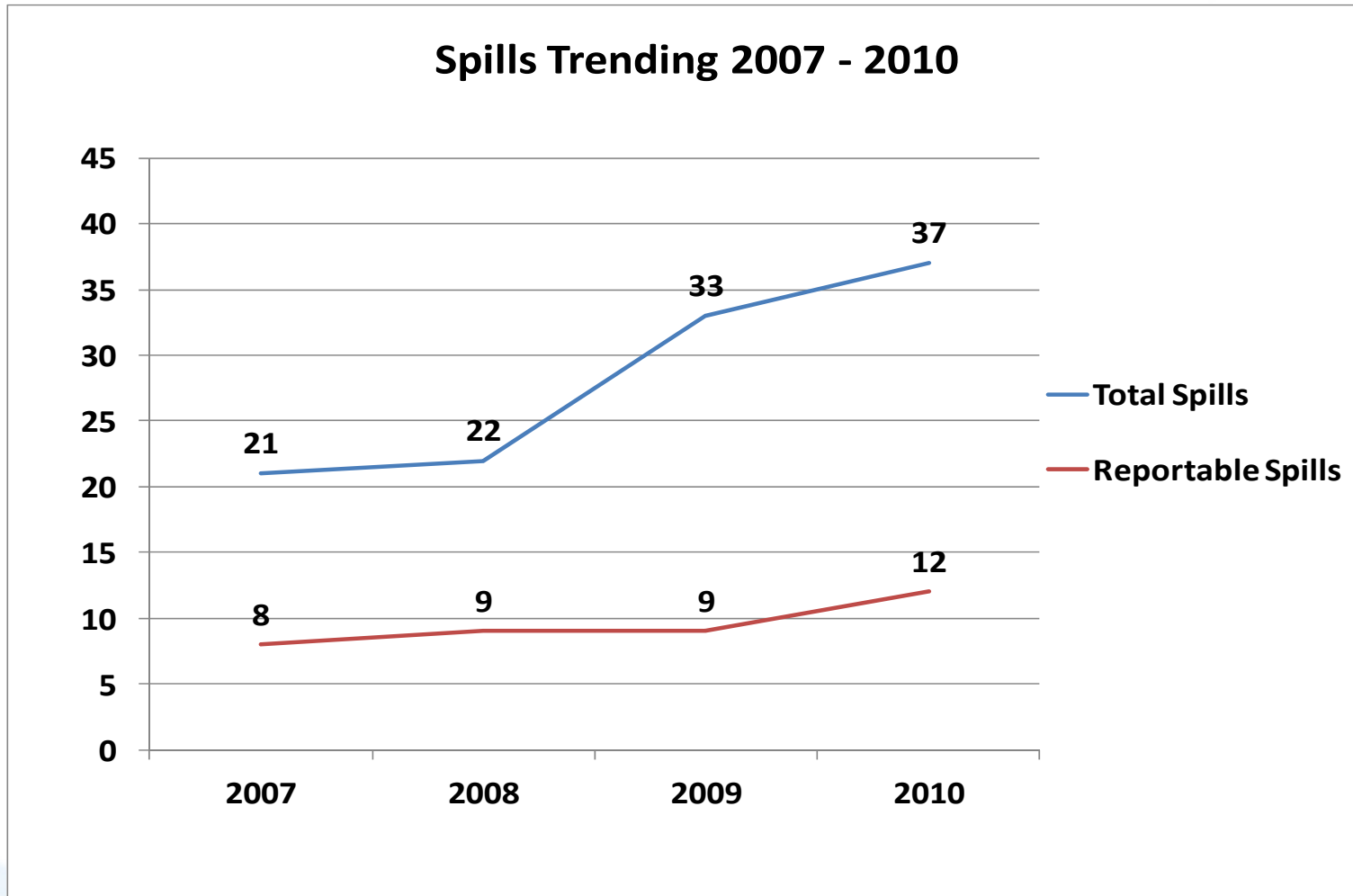
## ➤ Event/Issue Trends:

	FY08	FY09	FY10
Reportable Spills	0	1	4
Radiological Issues	4	0	0
Condition Reports	6	5	9

Spills to soil are reportable to NYS/Suffolk County

“Condition Reports” capture low-level non-compliances

# BNL-Wide Spill Trend



# Pollution Prevention Opportunities

1. Drained and isolated all HFBR water systems eliminating HFBR Article 12 Footprint
2. Evaluated on-site reuse of Bldg. 704 battery bank (wasted through WMD)
3. HFBR Equipment reused on site (industrial air compressor, 4 transformers, etc.)
4. Recycled/Reused ~ 10 tons of oxidized BGRR lead as waste container shielding
5. Recycled/Reused 40 tons of BGRR Balcony steel as reactor cavity shielding
6. Reworked planned excavation of the U/G Utilities to “pull” the D/F waste line vs. excavation → saved time and trees

# WORK OBSERVATION PROGRAM

- Goal is to reduce injuries by having managers & supervisors observe work and provide real-time feedback to workers on their safety performance
- ERP's goal was to have 27 staff performing weekly observations (~ 30 minutes in length)
- Observations recorded, tracked and trended
- ERP ended the year at a 92% participation rate
- Results
  - 241,629 hours worked with **No** lost time injuries (last lost time injury occurred in CY'04)
  - One first aid (strained shoulder muscle)



## 2 Events Reportable to DOE HQ (Occurrence Reporting and Processing – “ORPS”)

- Minor Shock from Air Sampling Motor Timer Wire → no injuries
  - Lab-wide issue for many air sampling motors
  - Issue shared with DOE complex
- Minor fire at BGRR D&D Project due to torch cutting operations → no injuries
  - Hot slag ignited oxy-propylene hose
  - Lesson Learned – sleeve hoses with fire retardant material

# Performance Summary

## ■ Objectives and Targets

- BGRR Graphite Pile Removed → **Achieved**
- HFBR Stabilized → **Achieved**
- Bldg. 704 safely demolished → **Achieved**
- Zero OSHA lost work day cases → **Achieved**
- Zero radiological events → **Achieved**
- Pollution Prevention initiatives → **Achieved**
- Zero reportable environmental events → Not Achieved
- Zero DOE Reportable Events → Not Achieved

# Looking Forward: ERP FY11 Goals

- Safe and cost effective completion of all projects
- Zero lost-time injuries
- Continued emphasis on safety through work observations
- Zero personnel contamination or uptakes
- Zero waste handling and transportation events
- Zero reportable environmental events
- Disposition (recycle or waste) ~ 250,000 pounds of non-radioactive lead