



Department of Energy  
Accounting for Environmental Liabilities  
Presented by the Office of Finance and  
Accounting

Kevin Majane, CF-10  
Denise Romano, CF-10  
Will Collins, CF-10

# Areas of Discussion

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- Section 1: Environmental Liabilities
- Section 2: EM Environmental Liabilities
- Section 3: Active Facilities Environmental Liabilities
- Section 4: Other Legacy Environmental Liabilities
- Section 5: ES&H Liabilities
- Appendices: Common Acronyms

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# Section 1 – Environmental Liabilities

# Definition of a Liability

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- ❑ A *Liability*<sup>1</sup> is a probable future outflow or other sacrifice of resources as a result of past transactions or events.
  - A liability must be probable and measurable:
    - Probable – More Likely Than Not
    - Measurable – Reasonably Estimable

1. Per FASAB SFFAS No. 5, "Accounting for Liabilities of the Federal Government".

# What is the Environmental Liability?

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- ❑ Estimated Cost to Cleanup Nuclear Weapons Complex:
  - Cleanup environmental contamination of soil, surface water, and ground water
  - Decontaminate and decommission buildings and structures
  - Treat, stabilize, and dispose:
    - Nuclear waste
    - Hazardous waste
    - Special nuclear materials
  - Post-cleanup monitoring and other long-term stewardship activities
  - Measured using costs as if the cleanup were completed today – Constant Dollars

# Constant Year Dollars

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- ❑ Constant Dollars = Un-escalated or De-escalated Dollars
  - The Department's Financial Statements are presented in constant dollars.
  - The use of constant dollars allows comparability without the effect of future inflation.
  - Thus if the constant dollar estimate from this year is greater than or less than that of a previous year, it indicates that the estimate has had “real” growth or decrease.

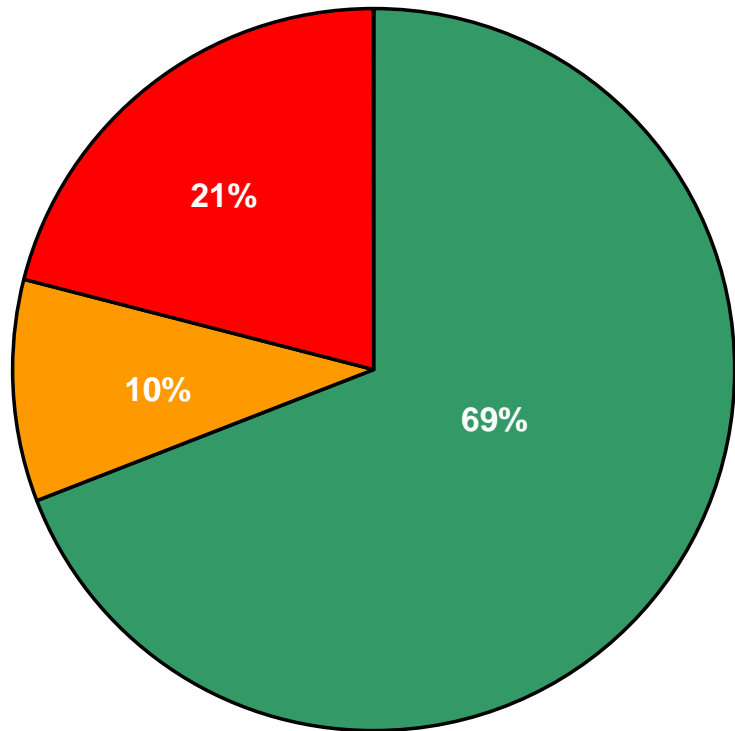
# Components of the Environmental Liability

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- ❑ The Department accounts for three components of environmental liabilities:
  - Office of Environmental Management (EM) environmental liabilities;
  - Active Facilities – captured in the Active Facilities Data Collection System (AFDCS) or outside estimates; and
  - Other Legacy Environmental Liabilities. (No facilities)
    - REL
    - HLW
    - Surplus Plutonium

# Background: FY 2016 Environmental Liabilities \$372B

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■ Office of Environmental Management  
- \$257B

■ Active and Surplus Facilities - \$37B

■ Other Legacy Environmental  
Liabilities (including High-Level Waste  
and Spent Nuclear Fuel) - \$78B



# Contingency

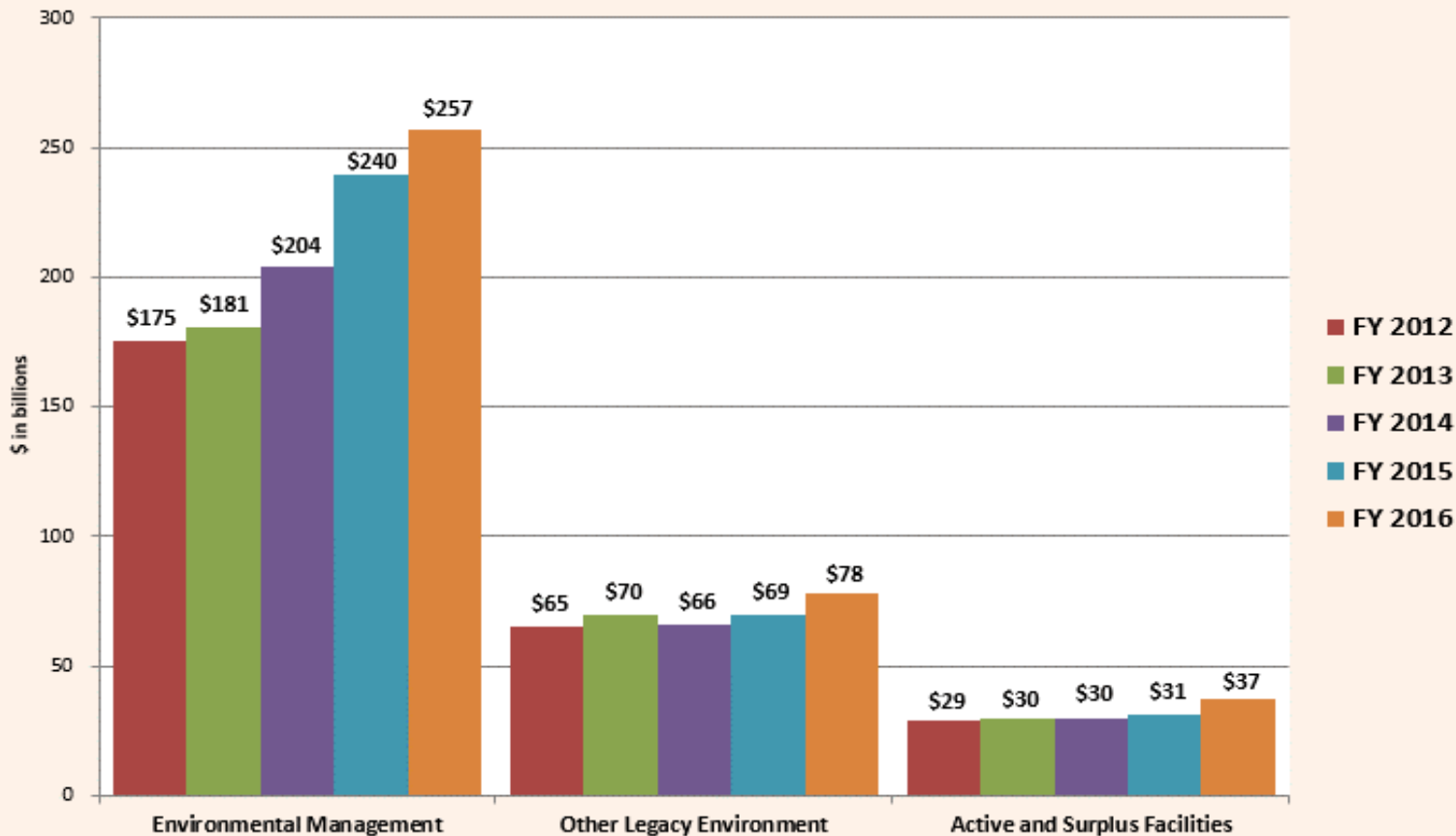
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- ❑ Account for uncertainties associated with technical cleanup scope, cost and, schedule of the programs
- ❑ \$114 Billion (31%) Contingency to account for uncertainties:
  - \$97 B EM – 38%
  - \$8 B Active – 23%
  - \$9 B Other – 11%
    - \$3 B REL 11%
    - \$1 B Surplus Plutonium 2%
    - \$5 B HLW 25%

Note: These contingency numbers are low because not all contingency added to estimates is reported separately

# Environmental Liabilities Trends

Chart 4: Composition of Environmental Cleanup and Disposal Liability



# Changes to the Environmental Liability

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- ❑ Net Increase \$32 Billion
- ❑ Estimate Increased \$39 Billion in 2016
  - \$24 Billion EM Environmental Liability
  - \$6 Billion Active Facilities
  - \$2 Billion REL
  - \$7 Billion Surplus Plutonium
- ❑ 2016 Costs Reduction \$7 Billion

# FY16 AFR/Financial Statements

## CONSOLIDATED AND COMBINED FINANCIAL STATEMENTS

### Principal Statements

U.S. Department of Energy Consolidated Balance Sheets  
As of September 30, 2016 and 2015

(\$ IN MILLIONS)	FY 2016	FY 2015
<b>ASSETS:</b> <sup>(Note 2)</sup>		
<b>Intragovernmental Assets:</b>		
Fund Balance with Treasury <sup>(Note 3)</sup>	\$ 31,808	\$ 30,224
Investments and Related Interest, Net <sup>(Note 4)</sup>	40,846	40,051
Accounts Receivable, Net <sup>(Note 5)</sup>	577	537
Other Assets	58	29
<b>Total Intragovernmental Assets</b>	<b>\$ 73,289</b>	<b>\$ 70,841</b>
Investments and Related Interest, Net <sup>(Note 4)</sup>	102	111
Accounts Receivable, Net <sup>(Note 5)</sup>	3,380	3,696
Direct Loans and Loan Guarantees, Net <sup>(Note 7)</sup>	14,646	14,514
Inventory, Net <sup>(Note 8)</sup>	44,068	43,887
General Property, Plant, and Equipment, Net <sup>(Note 9)</sup>	34,505	33,541
Regulatory Assets <sup>(Note 4)</sup>	10,983	11,466
Other Non-Intragovernmental Assets <sup>(Note 10)</sup>	4,548	4,720
<b>Total Assets</b>	<b>\$ 185,521</b>	<b>\$ 182,776</b>
<b>LIABILITIES:</b> <sup>(Note 11)</sup>		
<b>Intragovernmental Liabilities:</b>		
Accounts Payable	\$ 86	\$ 143
Debt <sup>(Note 12)</sup>	25,185	25,807
Deferred Revenues and Other Credits <sup>(Note 13)</sup>	92	82
Other Liabilities <sup>(Note 14)</sup>	562	603
<b>Total Intragovernmental Liabilities</b>	<b>\$ 26,925</b>	<b>\$ 26,635</b>
Accounts Payable	3,600	3,703
Loan Guarantee Liability <sup>(Note 7)</sup>	139	154
Debt Held by the Public <sup>(Notes 11 and 12)</sup>	6,019	5,955
Deferred Revenues and Other Credits <sup>(Note 13)</sup>	40,667	39,294
Environmental Cleanup and Disposal Liabilities <sup>(Note 15)</sup>	371,786	339,819
Pension and Other Actuarial Liabilities <sup>(Note 16)</sup>	28,950	26,392
Obligations Under Capital Leases <sup>(Note 17)</sup>	2,163	1,682
Other Non-Intragovernmental Liabilities <sup>(Note 14)</sup>	6,338	6,480
Contingencies and Commitments <sup>(Note 18)</sup>	25,134	25,091
<b>Total Liabilities</b>	<b>\$ 510,721</b>	<b>\$ 475,205</b>
<b>NET POSITION:</b>		
Unexpended Appropriations		
Unexpended Appropriations - Funds from Dedicated Collections <sup>(Note 19)</sup>	\$ 14	\$ 15
Unexpended Appropriations - Other Funds	21,364	19,912
Cumulative Results of Operations		
Cumulative Results of Operations - Funds from Dedicated Collections <sup>(Note 19)</sup>	(7,780)	(10,410)
Cumulative Results of Operations - Other Funds	(338,798)	(301,946)
<b>Total Net Position</b>	<b>\$ (325,200)</b>	<b>\$ (292,429)</b>
<b>Total Liabilities and Net Position</b>	<b>\$ 185,521</b>	<b>\$ 182,776</b>



## Fiscal Year 2016 Agency Financial Report

DOE/CF-0128



[https://www.energy.gov/sites/prod/files/2016/11/f34/DOE\\_FY2016\\_AFR.pdf](https://www.energy.gov/sites/prod/files/2016/11/f34/DOE_FY2016_AFR.pdf)

# Footnote 15 – Environmental Cleanup and Disposal Liabilities

## 15. Environmental Cleanup and Disposal Liabilities

(\$ IN MILLIONS)	FY 2016	FY 2015
Beginning balance	\$ 339,819	\$ 299,828
Changes to environmental cleanup and disposal liability estimates	39,139	46,806
Costs applied to reduction of legacy environmental liabilities <sup>(Note 24)</sup>	(5,564)	(5,308)
Capital expenditures related to remediation activities	(1,608)	(1,507)
<b>Ending environmental cleanup and disposal liabilities</b>	<b>\$ 371,786</b>	<b>\$ 339,819</b>
Unfunded environmental liabilities <sup>(Note 11)</sup>	\$ 369,067	\$ 338,439
Funded environmental liabilities	2,719	1,380
<b>Total environmental cleanup and disposal liabilities</b>	<b>\$ 371,786</b>	<b>\$ 339,819</b>

# Annual Audit of the Financial Statements

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- ❑ Independent auditors (contracted by DOE's Office of Inspector General) conduct an audit of and express an opinion on DOE's financial statements.
- ❑ Environmental liabilities are extensively audited each year because of its materiality level.
- ❑ In FY 2016, DOE received an "unmodified" audit opinion, however DOE received a total of 11 financial statements audit findings, 5 of which were related to environmental liabilities.

# Annual Audit Requirements

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- ❑ Auditors conduct site visits and review environmental liability estimates at the following sites:
  - Idaho, Richland, Office of River Protection, Oak Ridge, Savannah River, PPPO
  - Surprise sites are also chosen annually
  
- ❑ Extensive review is conducted for all sites not visited
  - Questionnaires distributed to the sites,
  - Conference calls,
  - Documentation requests, etc.

# EL Audit Risks

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- ✓ Changes to Active Facility Information
- ✓ Lack of Audit Support Documentation
- ✓ Omission/Duplication of Liabilities
- ✓ Errors in the Liability
- ✓ Including Leased Facilities for which DOE does not have any Cleanup Responsibility
- ✓ Misstatement of the Liability
- ✓ Internal Control Weaknesses in EM's IPABS Change Control Process
- ✓ Errors in Contingency Estimates



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# Section 2 – Environmental Management (EM) Environmental Liabilities

# EM Environmental Liabilities Definition

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- The EM EL is the estimated cost for DOE to meet its present environmental cleanup obligations
  - Work required to complete cleanup of facilities; remediation of soil and groundwater;
  - Management and disposition of wastes,
  - SNF, and surplus nuclear materials.

# EM Environmental Liabilities Components

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- ❑ EM portion of the EL is based on three components:
  - Approved baseline costs;
  - Pending baseline change proposals; and
  - Adjustments for probable costs and/or increases for EL purposes (placeholder estimates).
    - New scope,
    - Cost growth, and/or
    - Changes in fundamental assumptions
      - Changes in end state,
      - Regulatory approach,
      - Inability to consolidate/move materials,
      - Changes in anticipated cost efficiencies, etc.

# EM PBS and IPABS

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- ❑ EM EL based on Project Baseline Summaries (PBS)
  - Summarize lifecycle costs at Project Level
    - +280 PBS
      - Categories of similar projects by site (D&D, Tank Waste, etc.)
      - Made of multiple individual projects
    - 8 DOE Field Offices (Allottees)
  
- ❑ Integrated Planning, Accountability, and Budgeting System (IPABS)
  - Database for PBS
  - Estimates are submitted into IPABS

# Exclude from the EM Liability

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- ❑ Pension/PRBs costs that are included in the EM baseline, which is reported on Footnote 16 “Pensions & Other Actuarial Liabilities” in the financial statements;
- ❑ Estimates reported in other areas of the liability (i.e. AF, REL, etc.);
- ❑ Long-Term Stewardship under the purview of the Office of Legacy Management; and
- ❑ Environmental, Safety & Health (ES&H) liability, which is reported on Footnote 14 “Other Liabilities”.

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## Section 3 – Active Facilities

# Active Facilities Liability Definition

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- ❑ The active facilities EL represents the anticipated remediation costs:
  - For contaminated facilities still in active use by active programs (active facilities); and
  - For retired contaminated facilities awaiting transfer to EM (surplus facilities).
  
- ❑ Estimates from 2 Primary Sources:
- ❑ \$29 Billion AFDCS Model
- ❑ \$8 Billion Outside Estimates when better data is available

# AFDCS Estimating Tool

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- ❑ The Active Facilities Data Collection System (AFDCS):
  - Primary estimating tool used to calculate the cost to disposition facilities
  - Radioactive or hazardous contamination
  - Asbestos contamination only
  
- ❑ Factors Impacting the Estimates:
  - The transfer of cleanup and management responsibilities for active facilities to EM from other programs;
  - Changes in facility size or other AFDCS inputs; and/or
  - Estimated cleanup costs for newly contaminated facilities or newly cleaned up facilities.



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# Section 4 – Other Legacy Environmental Liabilities

# Other Legacy Environmental Liabilities

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- ❑ Environmental Liabilities not under the EM program, or active facilities, are considered “Other Legacy Environmental Liabilities”
  - Restructured EL
  - Surplus Plutonium Disposition
  - High-Level Waste and Spent Nuclear Fuel Storage
  - Highly Enriched Uranium

# REL Definition

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- ❑ Restructured Environmental Liabilities (REL) are all of those active program liabilities outside of the EM program and active facilities liability estimates (i.e. soil and groundwater remediation, disposition of wastes, contaminated equipment, etc. under the responsibility of non-EM programs)
- ❑ REL liabilities have become a significant focus of the environmental liability portion of the Department's consolidated financial statements audit
- ❑ Long-Term Stewardship (Non-LM)

# Long-Term Stewardship (Non-LM)

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- ❑ EM prepares a placeholder estimate for Long-Term Stewardship (LTS) costs at sites where EM has an active cleanup mission
  - The LTS estimate is reported as an REL liability, not an EM liability
  
- ❑ After EM work is complete, the responsibility for performing LTS activities transfers to the Office of Legacy Management (LM) (or other Program Secretarial Offices) and this entity is then responsible for recording the LTS liability from the expected transition date forward
  
- ❑ LTS estimates must be updated annually and include liability covering a minimum of 75 years (unless a longer period is stipulated in agreements with the States, etc.)

# Surplus Plutonium Liability

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- ❑ In September 2000, the U.S. and Russia signed the Plutonium Management and Disposition Agreement, which committed each country to dispose of 34 metric tons of surplus weapon-grade plutonium
- ❑ To dispose of weapons-grade plutonium, both the U.S. and Russia must convert the plutonium into fuel to be used in nuclear reactors (once irradiated, the plutonium is no longer readily usable for nuclear weapons)
- ❑ In FY 2016, the total Surplus Plutonium environmental liability was \$29 billion

# Defense High-Level Waste and Spent Nuclear Fuel

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- ❑ The Nuclear Waste Policy Act of 1982 (NWPA) established the Department's responsibility to provide for permanent disposal of the nation's High-Level Waste (HLW) and Spent Nuclear Fuel (SNF)
- ❑ All owners and generators of this waste, including the Department, must pay their respective shares of the full cost of the disposition program
- ❑ In FY 2016, the total HLW and SNF environmental liability totaled \$19.1 billion
- ❑ The TSLCC Estimate of the Civilian Radioactive Waste Management Program:
  - Used to assess Nuclear Waste Fund fee adequacy;
  - Used to calculate the defense cost share of the repository

# Highly Enriched Uranium (HEU)

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- ❑ The uranium market has historically resulted in the Department's revenues from down-blended HEU exceeding the project costs
  - No liability is currently recorded
  
- ❑ The Department obtains uranium market data at 3<sup>rd</sup> and 4<sup>th</sup> quarter to determine if an HEU liability needs to be included in the Department's financial statements

# Treasury Reporting Schedule

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- ❑ The timing of IPABS report, as well as the AFDCS report, to OFA has been moved up to the first week of June and September, for 3<sup>rd</sup> and 4<sup>th</sup> quarter reporting.
- ❑ The only adjustments that will be made during the first week in July/October will be for actual costs.
- ❑ Cut-off for month-end entries will be accelerated



# Flux Analysis

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- ❑ Evaluation of balances from one period to another (i.e. current versus prior year)
- ❑ Often performed as part of a risk identification and mitigation process
- ❑ Acceptable level of tolerance (i.e. 10% change) is established
- ❑ Changes need to be documented and supported

# Inflation Adjustments

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- ❑ STARS Inflation Adjustment – Used when no better estimates are available, but previous estimates
- ❑ Inflation = the increase resulting from converting last year's constant dollars to this year's constant dollars
  - Example: \$100 FY15 constant dollar estimate multiplied by the constant dollar inflation factor of 1.0134 results in a \$101.34 FY16 constant dollar estimate. The inflation adjustment to be recorded in STARS is \$1.34
  - There may be instances where a more specific calculation should be used due to unique calculations within an estimate. This is not usual and would be identified by the program/project person providing the estimate. Any of these estimates are to be discussed with OFA.

# Section 5 – ES&H Liabilities

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- ES&H Liability Definition
- ES&H vs EL

# ES&H Liability Definition

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- ❑ The Environment, Safety and Health (ES&H) liability represents costs to bring facilities and operations into compliance with existing:
  - ES&H laws;
  - Regulations; and
  - Applicable Department of Energy (Department) Orders
  
- ❑ Sites that have been “grandfathered” in for certain regulations are considered to be in compliance with existing guidance

# ES&H Liability vs EL

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- ❑ ES&H liabilities are not to be included as part of the environmental liability;
- ❑ ES&H liabilities are reported in footnote 14 of the Financial Statements;
- ❑ ES&H activities under the purview of the EM program are reported as part of the environmental liability

# Common Acronyms

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- HLW – High-level Waste
- SNF – Spent Nuclear Fuel
- NNSA – National Nuclear Security Administration
- WIPP – Waste Isolation Pilot Plant
- SRS – Savannah River Site
- NV – Nevada
- EM – Office of Environmental Management
- PRB – Post-Retirement Benefits
- SOPP – Standard Operating Processes and Procedures
- PBS – Project Baseline Summary
- EL – Environmental Liabilities
- IPABS – Integrated Planning, Accountability, and Budgeting System
- HQ – Headquarters
- OFCR – Office of Financial Control and Reporting
- STARS – Standard Accounting and Reporting System
- LTS – Long-Term Stewardship
- LM – Office of Legacy Management
- D&D – Decontamination and Decommissioning
- LCC – Life-Cycle Costs
- AFDCS – Active Facilities Data Collection System
- PPC – Project Performance Corporation
- FIMS – Facility Information Management System
- NWPA – Nuclear Waste Policy Act
- TSLCC – Total System Life Cycle Cost
- Pu – Plutonium
- MOX – Mixed-Oxide Fuel Fabrication Facility
- HEU – Highly Enriched Uranium
- EPA – Environmental Protection Agency
- CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
- RCRA – Resource Conservation and Recovery Act
- HSWA – Hazardous and Solid Waste Amendments
- EEOICPA – Energy Employees Occupational Illness Compensation Program Act
- RECA – Radiation Exposure Compensation Act

# Federal Financial Reporting Requirements

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- Chief Financial Officer Act of 1990
- Government Management Reform Act (GMRA) of 1994
- The Accountability of Tax Dollars Act of 2002
- Federal Financial Management Improvement Act (FFMIA) of 1996

# Applicable FASAB Standards

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- Accounting standards associated with recognizing and measuring liabilities in federal financial reports:
  - Statement of Federal Financial Accounting Standards (SFFAS) No. 5, “Accounting for Liabilities of the Federal Government”;
  - SFFAS No. 6, “Accounting for Property, Plant and Equipment”;
  - SFFAS No. 12, “Recognition of Contingent Liabilities Arising from Litigation” (amendment to SFFAS No. 5);
  - Federal Accounting Standards Advisory Board (FASAB) Technical Bulletin 2006-1, *Recognition and Measurement of Asbestos-Related Cleanup Costs*;
  - FASAB Technical Bulletin 2009-1 deferred the implementation date of Technical Bulletin 2006-1.



# Points of Contact

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Kevin Majane

kevin.Majane@hq.doe.gov

301-903-4065

Denise Romano

denise.romano@hq.doe.gov

301-903-2010

Will Collins

william.collins@hq.doe.gov

301-903-1819