

Annual Fire Protection Program Summary for Calendar Year 2009



UNITED STATES DEPARTMENT OF ENERGY

Summary Provided by:
Office of Corporate Safety Analysis
and
Office of Nuclear Safety, Quality Assurance and Environment

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Foreword

This edition of the Annual Fire Protection Program Summary for the Department of Energy (DOE) continues the series started in 1972.

Since May 1950, an Annual Fire Protection Program Summary (Annual Summary) has been submitted by DOE's fire protection community under the requirements of DOE's predecessor agencies: the Atomic Energy Commission (AEC) and the Energy Research Development Administration (ERDA). This report is currently required by section 5a (8) of DOE Order 231.1, *Environment, Safety and Health Reporting* and is considered the primary source for quantifying monetary loss from fire across the DOE Complex.

The report for calendar year (CY) 2009 was summarized from information sent to Headquarters by 25 reporting elements, representing approximately 84 percent of DOE's facility and equipment valuation (most of the significant DOE facilities have reported into this database, with the exception of the Power Marketing Administrations and Headquarters offices). Abbreviations are identified in the Glossary, as are the DOE site reporting elements and major definitions.

In 1999, the Annual Summary reporting process was automated to streamline data collection and provide a more comprehensive look at reporting element activities. It is now possible to view all responses since 1991 at the Site, Operations, Lead Program Secretarial Office and Headquarters levels. In 2007, a new Fire Protection Reporting System was designed by the Office of Corporate Safety Analysis and implemented across the DOE Complex. This new process allows sites to submit their information on a real-time basis versus the submittal of an annual summary as was provided in the past.

The information contained in this publication was extracted from the Fire Protection Reporting System for CY 2009. Although the requirement is for sites to submit this data to the Office of Health, Safety and Security (HSS) by April 30 of each year, this report was generated based on data reported into the Fire Protection Reporting System as of 6/30/10 to allow sites ample time to work with and submit data into the newly implemented database.

The Fire Protection Reporting System can be found at <http://www.hss.energy.gov/nuclearsafety/ns/fire/fpdb.html>.

HSS plans on continuing to work with the DOE Fire Safety Committee to examine the content of the annual report (including existing reporting fields contained within this Summary and other supporting fire protection program information that may be utilized) to improve its benefit to both Headquarters and Field Elements.

Glossary

Headquarters Organizational Elements:

NNSA	National Nuclear Security Administration
SC	Science
FE	Fossil Energy
NE	Nuclear Energy
EM	Environmental Management
PMA	Power Marketing Administrations ¹
EE	Energy Efficiency & Renewable Energy
RW	Civilian Radioactive Waste Management
LM	Legacy Management
HSS	Health, Safety & Security

Field/Area/Site Organizational Elements:

CAO	Carlsbad Area Office
CH	Chicago Operations Office
GFO	Golden Field Office
DOE-ID	Idaho Operations Office
KCSO	Kansas City Site Office
LSO	Livermore Site Office
LASO	Los Alamos Site Office
NETL	National Energy Technology Laboratory
NPR	Naval Petroleum Reserves
NSO	Nevada Site Office
ORO	Oak Ridge Operations Office
ORP	Office of River Protection
PXSO	Pantex Site Office
RL	Richland Operations Office
SSO	Sandia Site Office
SRO	Savannah River Operations Office
SPR	Strategic Petroleum Reserve Office ²
YSO	Y-12 Site Office

¹ Power Administration organizations are comprised of the Bonneville Power Administration (BPA); Southeastern Power Administration (SEPA); Southwestern Power Administration (SWPA); and the Western Area Power Administration (WAPA).

² Strategic Petroleum Reserve Office sites include: Bayou Choctaw, Big Hill, Bryan Mound and West Hackberry.

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Site abbreviations:

ALA	Ames Laboratory
ANL	Argonne National Laboratory
AEMP	Ashtabula Environmental Management Project
BAPL	Bettis Atomic Power Laboratory
BNL	Brookhaven National Laboratory
ETTP	East Tennessee Technology Park
FNAL	Fermi National Accelerator Laboratory
FEMP	Fernald Environmental Management Project
HAN	Hanford Site ³
INL	Idaho National Laboratory
KAPL	Knolls Atomic Power Laboratory
KCP	Kansas City Plant
KSO	Kesselring Site Operations
KAFB	Kirtland Air Force Base
LBNL	Lawrence Berkeley National Laboratory
LLNL	Lawrence Livermore National Laboratory
LANL	Los Alamos National Laboratory
MEMP	Miamisburg Environmental Management Project
NETL	National Energy Technology Laboratory
NREL	National Renewable Energy Laboratory ⁴
NRF	Naval Reactors Facilities
NTS	Nevada National Security Site ⁵
ORISE	Oak Ridge Institute for Science and Education
ORNL	Oak Ridge National Laboratory
TWPC	TRU Waste Processing Center
PX	Pantex Plant
PGDP	Paducah Gaseous Diffusion Plant ⁶
PORTS	Portsmouth Gaseous Diffusion Plant ⁶
PPPL	Princeton Plasma Physics Laboratory
SLAC	SLAC National Accelerator Laboratory
SNL-NM	Sandia National Laboratories, New Mexico
SNL-CA	Sandia National Laboratories, California
SRS	Savannah River Site
TJNAF	Thomas Jefferson National Accelerator Facility
WIPP	Waste Isolation Pilot Plant
WVDP	West Valley Demonstration Project
Y-12	Y-12 Plant
YMP	Yucca Mountain Project

The reference below is used throughout the report to identify various DOE elements:

DOE field organization (abr.)/Site (abr.)

Example: LASO/LANL

³ Hanford Site includes the Pacific Northwest National Laboratory and Office of River Protection facilities (Tank Farms, etc).

⁴ National Renewable Energy Laboratory includes the Wind Site.

⁵ Nevada National Security Site Includes: Amador Valley Operations, Las Vegas Operations, Nevada-Los Alamos Operations, Nevada-Special Technology Laboratory, Washington Aerial Measurements Operation, and Nevada-EG&G Wolburn NV.

⁶ On July 1, 1993, a lease agreement took effect between the DOE and the United States Enrichment Corporation (USEC) essentially transferring all ownership responsibilities to USEC.

Definitions

The following terms are defined in the text of DOE Manual M 231.1-1, *Environment, Safety, and Health Reporting Manual*. Major definitions not included in this manual have been extracted from the rescinded order DOE 5484.1 to clarify key concepts. Section references to these documents are given at the end of the definition.

Property Value / Valuation: The approximate replacement value of all DOE-owned buildings/facilities and equipment. Included are the cost of all DOE-owned supplies and average inventory of all source and special nuclear materials. Excluded are the cost of land, land improvements (such as sidewalks or roads), and below ground facilities not susceptible to damage by fire or explosion (such as major water mains and ponds). (APPENDIX C, DOE M 231.1)

Total valuation is obtained by summing information from the Facility Information Management System (FIMS), and the Property Information Database System (PIDS). FIMS is the Department's official repository of real property data; whereas, PIDS provides the means for reporting DOE and contractor held property for sensitive items and equipment (\$5k to \$25k and greater than \$25k).

Estimated Loss: Monetary loss determination based on all estimated or actual costs to restore DOE facility and equipment to pre-occurrence conditions irrespective of whether this is in fact performed. The estimate includes: (1) any necessary nuclear decontamination; (2) restoration in areas that received water or smoke damage; (3) any loss reductions for salvage value; and (4) any lost revenue experienced as a result of the accident. The estimate excludes: (1) down time; and (2) any outside agency payments. Losses sustained on private property are not reportable, even if DOE is liable for damage and loss consequences resulting from the occurrence. Categorization of occurrences shall be by fire loss and non-fire loss events. (APPENDIX C, DOE M 231.1)

Fire Loss: All damage or loss sustained as a consequence of (and following the outbreak of) fire shall be classified as a fire loss. Exceptions are as follows: (1) burnout of electric motors and other electrical equipment through overheating from electrical causes shall be considered a fire loss only if self-sustained combustion exists after power is shut off. (APPENDIX C, DOE M 231.1)

Loss Rate: Unit of comparison in cents loss per \$100 of valuation (facilities and equipment).

Executive Summary

DOE experienced no fatalities from fire in CY09. There were 60 fire loss events reported during the period causing an estimated \$623,299 in property damage. These reported fire losses are approximately \$50,000 more than fire losses reported in CY08, with 97% of losses in CY09 attributed to 13 incidents (with losses valued at greater than \$10,000 per incident). Losses from non-fire related events (leaks, spills or inadvertent releases) cost the Department \$767,971 in CY09. There were two separate events where a worker received first and second degree burns from fires.

Loss comparisons between the DOE and private industry are performed by normalizing data against total facility and property value (or valuation). Total DOE valuation increased by about 3 percent (from \$73.4 to \$75.6 Billion). Of those sites reporting into the Fire Protection Program database (with a total valuation of \$63.6 Billion, 84% of the total DOE Complex), the overall CY09 fire loss rate for those sites was approximately 0.10 cents for each \$100 in total site valuation (approximately the same as the CY08 rate of 0.095 cents).

Recurring costs for fire protection reached \$151 million in CY09 which is approximately the same as was spent in CY08. On a ratio of cost to total valuation, the DOE spent approximately 24 cents per \$100 in valuation for recurring fire protection activities for those sites reporting into the Fire Protection Program database (almost the same as was reported in CY08).

In CY09, only one fire was extinguished in an area that was controlled by automatic fire suppression systems. However, the Department experienced the inadvertent actuation of eight wet-pipe systems: six due to weather-related events (freeze), one due to personnel error during testing and one event where the loss of the facility's HVAC system led to an overheating of the room.

DOE Property Loss Experience

Property and facility value estimates serve as a common denominator for comparing Annual Summary fire loss rates. In CY09, total DOE valuation increased by approximately 3 percent to a total of approximately \$75.6 billion. For those sites reporting into the Fire Protection Program database, valuations totaled \$63.6 billion. DOE elements reported 60 fire loss events¹ that accounted for a total year-end fire loss of \$623,299. This represents 40% fewer events than in CY08 but is a 9% increase over the financial losses experienced in 2008.

In addition to fire related losses in CY09, DOE had a greater value for non-fire related fire protection system events - \$767,971. These events are related to system leaks, spills and other inadvertent releases/discharges. Of that total, one single event valued at \$630,000 (with the resultant damage to computers at LANL due to an inadvertent discharge of the fire protection system) accounted for 82% of all such losses for the complex. Weather related damage accounted for the majority of the other system leaks.

These property loss events are categorized as follows:

Fire related: Fire/Smoke (Building)	19 Events	\$296,577
Fire/Smoke (Brush)	13 Events	\$163,705
Fire/Smoke (Vehicle)	1 Event	\$2,500
Fire/Smoke (Other)	28 Events	<u>\$160,517</u>
		\$623,299
Non-Fire related: Leaks, Spills, Releases		31 Events
		\$767,971

DOE's fire loss rate for CY09, as reported into the Fire Protection Reporting System, is approximately 0.10 cents loss per \$100 valuation.

Table 1: Characterizes Annual Summary loss histories since 1950 and includes both fire and non-fire loss rate categories up to 2003 when the non-fire reporting total was discontinued. Numbers shown in parentheses represent a 5-year running average, where applicable.

The accompanying figures are described as follows:

Figure 1: Graphical representation of the Department's property valuation since 1950

Figure 2: Fire property loss since 1983

Figure 3: Fire loss rates since 1989

Figure 4: Number of fire events reported at the 9 sites posting greater than \$10,000 in total losses

Figure 5: The current year's fire loss (dollars) by those sites with greater than \$10,000 in total losses

Figure 6: The current year's fire loss rate by those sites with greater than \$10,000 in total losses

Figure 7: Distribution of recurring Fire Protection Costs by activity

Figure 8: The costs of fire protection costs in cents per \$100 of valuation

Organizations not shown in Figures 4 through 6 reported either insignificant or zero losses for the year.

¹ By comparison, the Occurrence Reporting and Processing System (ORPS) logged 21 fire events in CY 2009. Also, page 19 of this report indicates that Fire Departments logged a total of 359 fire events over the year, with a majority of events determined by the sites to be insignificant for Headquarters' reporting purposes.

Trending of fire loss data continues to indicate that a small number of incidents constitute the majority of dollar losses reported to the DOE. For example, there were 13 fire incidents this year with loss figures of \$10,000 or more per event. These 13 incidents accounted for approximately 97 percent of the total dollar loss amount for the entire complex. For example, a facility fire at Brookhaven National Laboratory's Linear Accelerator resulted in estimated losses of \$100,000 while a wildland fire at Richland resulted in losses of approximately \$98,000.

The largest loss for the year directly related to an actual fire is noted as follows:

BNL: A fire alarm was initiated at 3:21 p.m. on Wednesday, February 18, 2009 at the Accelerator Test Facility (ATF) in Building 820 at Brookhaven National Laboratory (BNL), Upton, NY. Facility personnel discovered the fire while resetting the Linear Accelerator (Linac) modulator. Staff secured power to the mezzanine where the modulator and other electronic equipment were located, activated a manual pull station while exiting and evacuated the building. Fire Rescue personnel responded and extinguished the fire in less than ten (10) minutes. Operations at the ATF were expected to be interrupted until May 2009. The fire started in a pulse-forming network (PFN) in the Linac klystron modulator. The modulator delivers high voltage pulses at a 1.5 hertz rate to a klystron that in turn provides RF energy to the Linac. The PFN was destroyed and adjacent electronic equipment was damaged. The PFN was composed of oil-filled plastic capacitors, inductors (copper coils wound around Glastic tubes) and resistors all supported on Glastic frames. The total loss is estimated at \$100,000.

Personnel Injuries

There were two separate events where workers were injured as a result of a fire. One worker at Sandia New Mexico received second degree burns when a mechanical failure occurred in an oxygen gas manifold system. The worker was hospitalized overnight and experienced 18 lost work days and 8 days of restricted duty. While performing work at SRS, an electrician received first and second degree burns over approximately 7% of head, arms and face when his metal torpedo level came into contact with the energized moving contact assembly on a 480 volt breaker, resulting in an arc flash. He experienced 99 lost work days.

Table 1

DOE Loss History from 1950 to Present

Year	Valuation (Millions of Dollars)	Fire Loss (Dollars)	Non-Fire Loss (Dollars)	Loss Rates (Cents per 100 Dollar Value)		
				Fire*	Non-Fire*	Total*
50	1,800.00	486,389	10,050	2.70 -	0.06 -	2.76 -
51	2,177.10	38,318	317,797	0.18 -	1.46 -	1.64 -
52	3,055.10	449,107	356,600	1.47 -	1.17 -	2.64 -
53	4,081.00	148,142	427,430	0.36 -	1.05 -	1.41 -
54	6,095.90	185,438	190,436	0.30 -	0.31 -	0.62 -
55	6,954.20	125,685	330,103	0.18 (1.00)	0.47 (0.81)	0.66 (1.81)
56	7,364.10	2,206,478	940,945	3.00 (0.50)	1.28 (0.89)	4.27 (1.39)
57	7,973.20	590,663	885,936	0.74 (1.06)	1.11 (0.86)	1.85 (1.92)
58	8,102.50	275,560	476,265	0.34 (0.92)	0.59 (0.84)	0.93 (1.76)
59	10,301.80	199,841	998,060	0.19 (0.91)	0.97 (0.75)	1.16 (1.67)
60	10,708.60	636,228	764,823	0.59 (0.89)	0.71 (0.88)	1.31 (1.77)
61	11,929.90	325,489	5,530,566	0.27 (0.97)	4.64 (0.93)	4.91 (1.91)
62	12,108.80	3,020,023	293,341	2.49 (0.43)	0.24 (1.60)	2.74 (2.03)
63	13,288.90	599,056	776,998	0.45 (0.78)	0.58 (1.43)	1.04 (2.21)
64	14,582.80	480,519	870,516	0.33 (0.80)	0.60 (1.43)	0.93 (2.23)
65	15,679.30	1,743,448	2,106,621	1.11 (0.83)	1.34 (1.35)	2.46 (2.18)
66	16,669.00	158,220	698,753	0.09 (0.93)	0.42 (1.48)	0.51 (2.41)
67	17,450.90	359,584	2,423,350	0.21 (0.90)	1.39 (0.64)	1.59 (1.53)
68	18,611.90	155,986	713,097	0.08 (0.44)	0.38 (0.87)	0.47 (1.31)
69	20,068.30	27,144,809	909,525	13.53 (0.37)	0.45 (0.83)	13.98 (1.19)
70	22,004.30	89,456	1,611,336	0.04 (3.00)	0.73 (0.80)	0.77 (3.80)
71	24,155.80	78,483	1,857,566	0.03 (2.79)	0.77 (0.68)	0.80 (3.47)
72	26,383.50	222,590	698,061	0.08 (2.78)	0.26 (0.75)	0.35 (3.52)
73	27,166.70	117,447	2,258,241	0.04 (2.75)	0.83 (0.52)	0.87 (3.27)
74	28,255.50	249,111	930,766	0.09 (2.75)	0.33 (0.61)	0.42 (3.36)
75	31,658.30	766,868	4,485,481	0.24 (0.06)	1.42 (0.59)	1.66 (0.64)
76	35,512.70	251,849	2,040,727	0.07 (0.10)	0.57 (0.72)	0.65 (0.82)
77	39,856.10	1,084,823	2,529,161	0.27 (0.11)	0.63 (0.68)	0.91 (0.79)
78	47,027.10	12,976,036	4,501,943	2.76 (0.14)	0.96 (0.76)	3.72 (0.90)
79	50,340.80	654,716	1,886,307	0.13 (0.69)	0.37 (0.78)	0.50 (1.47)
80	54,654.70	1,385,686	7,160,249	0.25 (0.69)	1.31 (0.79)	1.56 (1.49)
81	59,988.80	2,042,633	2,600,855	0.34 (0.70)	0.43 (0.77)	0.77 (1.47)
82	65,360.40	948,691	3,252,277	0.15 (0.75)	0.50 (0.74)	0.64 (1.49)
83	70,484.40	731,234	9,765,828	0.10 (0.73)	1.39 (0.71)	1.49 (1.44)
84	82,166.90	1,549,807	4,917,513	0.19 (0.19)	0.60 (0.80)	0.79 (0.99)
85	86,321.84	1,145,975	2,983,322	0.13 (0.21)	0.35 (0.85)	0.48 (1.05)
86	82,787.52	805,030	4,490,262	0.10 (0.18)	0.54 (0.65)	0.64 (0.83)
87	91,927.20	1,570,736	1,440,093	0.17 (0.13)	0.16 (0.67)	0.33 (0.81)
88	92,998.00	466,120	7,837,000	0.05 (0.14)	0.84 (0.61)	0.89 (0.74)
89	107,948.00	615,551	6,890,000	0.06 (0.13)	0.64 (0.50)	0.70 (0.63)
90	115,076.00	8,392,746	9,078,000	0.73 (0.10)	0.79 (0.51)	1.52 (0.61)
91	118,868.68	608,740	1,820,065	0.05 (0.22)	0.15 (0.59)	0.20 (0.81)
92	118,267.06	1,166,858	2,486,696	0.10 (0.21)	0.21 (0.52)	0.31 (0.73)
93	119,826.25	679,939	2,338,595	0.06 (0.20)	0.19 (0.53)	0.25 (0.73)
94	124,350.29	1,533,717	1,869,933	0.12 (0.20)	0.15 (0.40)	0.27 (0.60)
95	120,321.68	720,720	911,746	0.06 (0.21)	0.08 (0.30)	0.14 (0.51)
96	113,471.00	2,372,482	3,653,350	0.21 (0.08)	0.32 (0.16)	0.53 (0.24)
97	102,947.24	544,924	5,567,963	0.05 (0.11)	0.54 (0.19)	0.59 (0.30)
98	99,127.79	316,475	1,062,313	0.03 (0.10)	0.11 (0.26)	0.14 (0.36)
99	110,858.47	443,049	2,467,991	0.04 (0.10)	0.22 (0.24)	0.26 (0.34)

* Numbers shown in parentheses represent the previous 5-year running average.

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Year	Valuation (Millions of Dollars)	Fire Loss (Dollars)	Non-Fire Loss (Dollars)	Loss Rates (Cents per 100 Dollar Value)		
				Fire*	Non-Fire*	Total*
00	102,514.01	102,861,283	312,839	10.03 (0.08)	0.03 (0.25)	10.06 (0.33)
01	103,215.56	287,263	218,323	0.03 (2.07)	0.02 (0.25)	0.05 (2.32)
02	98,779.44	1,541,174	920,673	0.16 (2.04)	0.09 (0.19)	0.25 (2.23)
03	70,812.80	1,075,309	NC	0.15 (2.06)	NC NC	NC NC
04	72,601.95	622,613	NC	0.09 (2.08)	NC NC	NC NC
05	74,951.25	2,537,565	NC	0.34 (2.09)	NC NC	NC NC
06	64,547.05	997,805	NC	0.15 (0.15)	NC NC	NC NC
07	67,382.01	1,674,515	NC	0.25 (0.18)	NC NC	NC NC
08	60,576.55	573,161	NC	0.10 (0.20)	NC NC	NC NC
09	63,569.89	623,299	NC	0.10 (0.19)	NC NC	NC NC

* Numbers shown in parentheses represent the previous 5-year running average.

NC – The data is no longer collected

The CY00 fire loss was primarily due to the Cerro Grande fire at LANL.

Figure 1
DOE Valuation

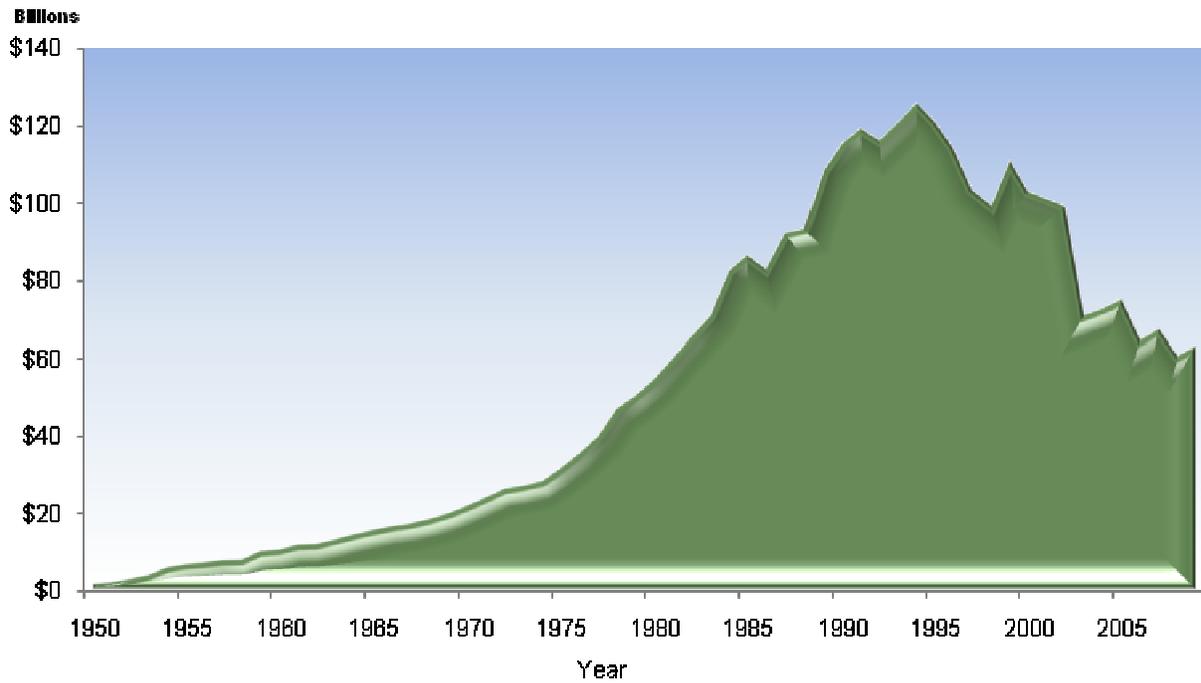


Figure 2
Property and Facility Losses Due to Fires

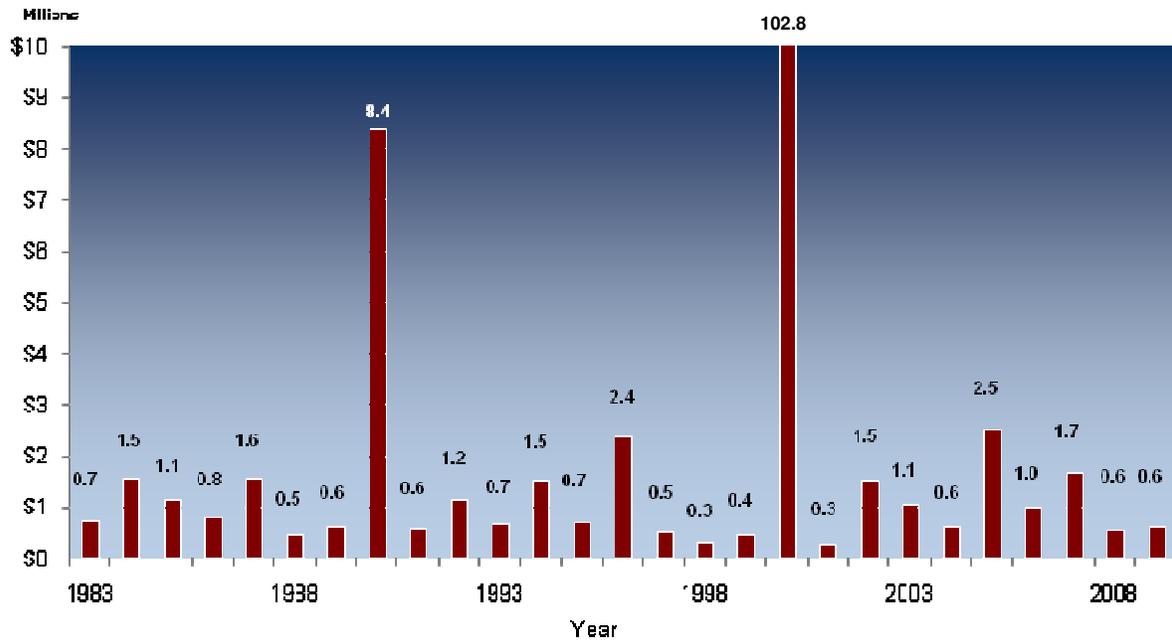


Figure 3
DOE Fire Loss Rate
 (Rate in cents per \$100 of valuation)

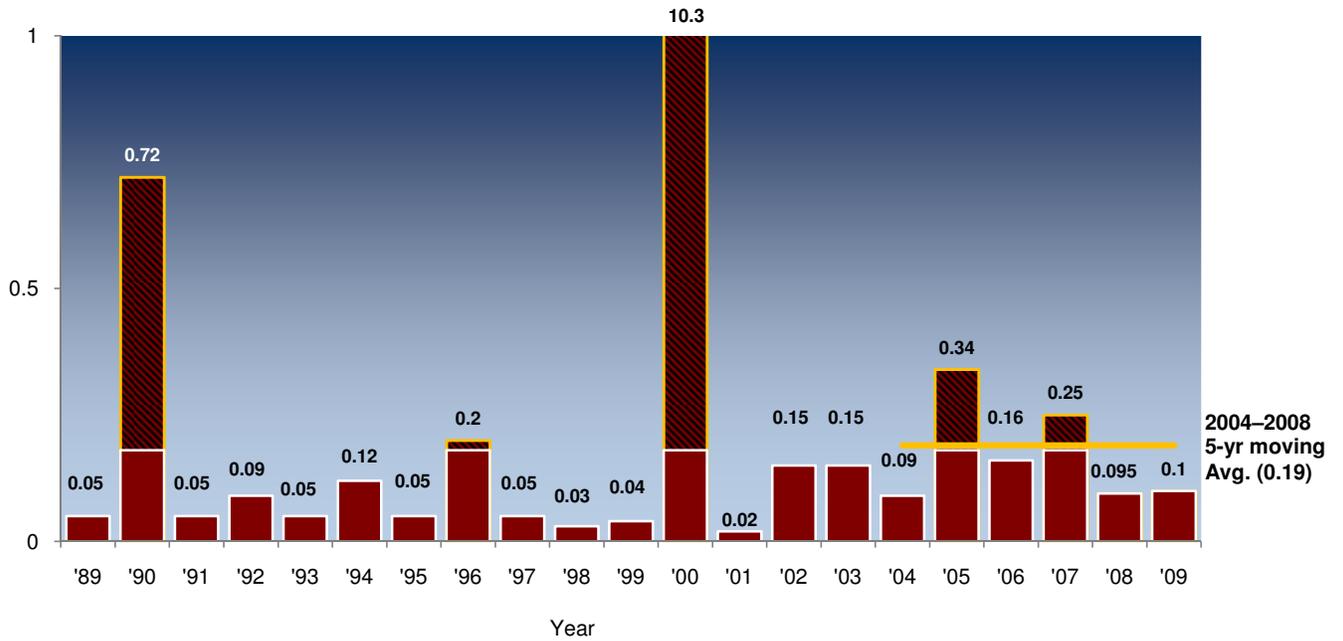


Figure 4
Fire Events

(Number of fire events reported at the 9 sites posting greater than \$10,000 in total losses in CY2009)

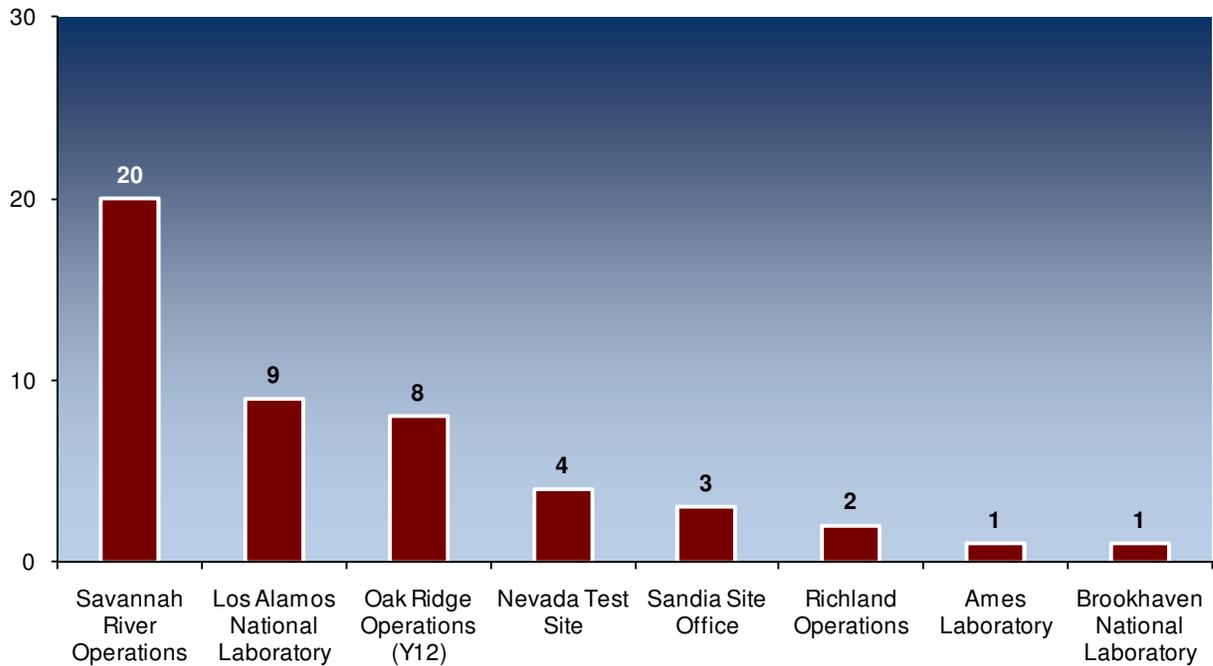


Figure 5
Fire Loss Amount

(Total losses in CY09 for those sites posting greater than \$10,000 in total losses in CY2009)

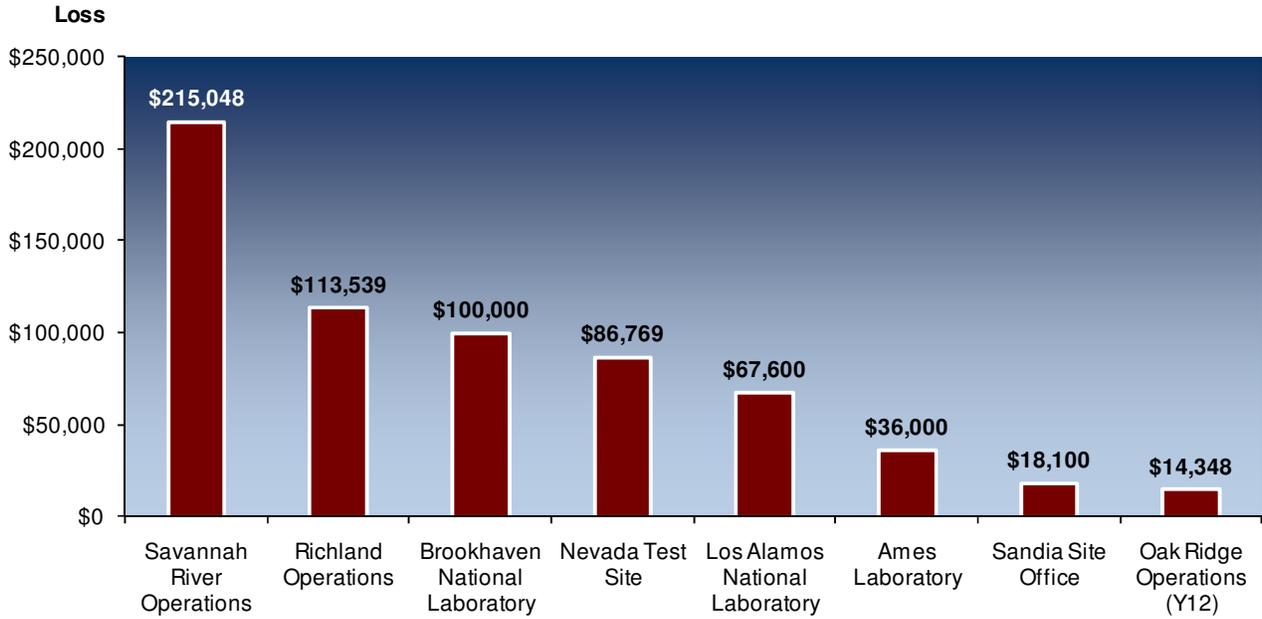
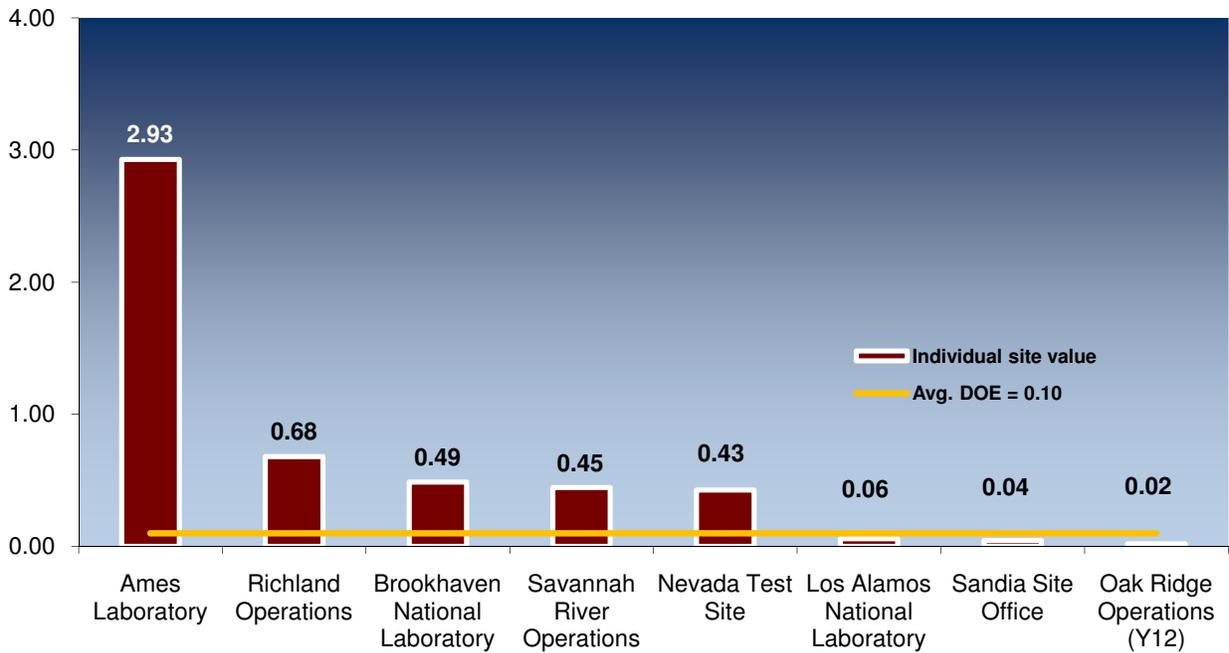


Figure 6
Fire Loss Rate

(Rate in cents per \$100 of valuation for those sites posting greater than \$10,000 in total losses in CY2009)



Summary of Major Fire Damage Incidents

The following table provides a description of individual major (dollar loss greater than \$10,000 per event) DOE fire losses during the year. While there were 7 sites posting “fire events” resulting in losses greater than \$10,000 for any one event, only 13 loss events were directly due to a fire. See Tables 3 through 4 for fire events involving fixed automatic fire suppression systems.

Table 2
Summary of Fire Damage Incidents

Loss Type	Location	Description	Dollar Loss
Fire/Smoke (Building)	BNL Bldg 820 Accelerator Test Facility	A fire alarm was initiated at 3:21 p.m. on Wednesday, February 18, 2009 at the Accelerator Test Facility (ATF) in Building 820 at Brookhaven National Laboratory (BNL), Upton, NY. Facility personnel discovered the fire while resetting the Linear Accelerator (Linac) modulator. Staff secured power to the mezzanine where the modulator and other electronic equipment were located, activated a manual pull station while exiting and evacuated the building. Fire Rescue personnel responded and extinguished the fire in less than ten (10) minutes. Operations at the ATF are expected to be interrupted until May 2009. The fire started in a pulse-forming network (PFN) in the Linac klystron modulator. The modulator delivers high voltage pulses at a 1.5 hertz rate to a klystron that in turn provides RF energy to the Linac. The PFN was destroyed and adjacent electronic equipment was damaged. The PFN was composed of oil-filled plastic capacitors, inductors (copper coils wound around Glastic tubes) and resistors all supported on Glastic frames.	\$100,000
Fire/Smoke (Brush)	Richland Operations 100K Area	On August 10, 2009, the Hanford Fire Department responded to a wildland fire northeast of the 100K Area, near the 1608K Pump and Treat operations. This 4.5-acre fire was caused by a spark from the blade of a belly scraper hitting a rock and igniting dried grasses. The fire destroyed piping and cabling for the 1608K Pump and Treat.	\$97,839
Fire/Smoke (Other)	SRS J-Area	On January 23, 2009 at 03:15, SRSFD personnel were dispatched to an after-the-fact notification of a fire in J-Area. Construction personnel had erected tarps over a concrete slab using formwork for support with propane heaters set under the tarps. The heaters were too close to the formwork which caused the forms to ignite. Initial reports to the SRSFD were that the on-duty fire watch had used 1 portable extinguisher and that the fire was confined to a small area. It was also reported that only scrap material had burned. Further investigation revealed that the fire was actually much larger than initially reported and that 5 portable fire extinguishers and a water hose had also been used to combat the blaze. It had been extinguished by 2 fire watch personnel, an electrician and the superintendent. The office of Safety and Quality Assurance for DOE launched an investigation and generated a report identifying numerous deficiencies and corrective actions. There were no injuries. An extensive engineering evaluation of the concrete surface and the reinforcing bars exposed to the fire was conducted and determined the concrete and re-bar had received very little damage. It was determined that pressure cleaning of the rebar and concrete surface was all that was needed to allow construction to continue. The Type B investigation, safety stand-downs and the engineering evaluation needed to certify the concrete as acceptable for use are estimated to be \$97,000.	\$97,000

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Loss Type	Location	Description	Dollar Loss
Fire/Smoke (Brush)	Nevada Test Site Areas 18 and 30	Seven wildland fires occurred on the Nevada Test Site (NTS) in Areas 18 & 30. These fires (National Fire Incident Reporting System (NFRS) Incident # 09-315,318,321,331-333, and 348) were caused by live-fire training exercises performed by Department of Defense personnel. No NTS structures, systems, or components were threatened or damaged as a result of these fires. Remedial Action: Extensive vegetation abatement activities have occurred at this training location to minimize the potential for a recurrence of brush fires.	\$65,816
Fire/Smoke (Building)	SRS 245-1F	At 04:34, SRSFD personnel were dispatched to a call-in notification of a fire at the 245-1F trailer with smoke and flames showing through the roof. Upon arrival SRSFD found flames coming from the northwest portion roofline of the doublewide trailer, and heavy smoke throughout. FD personnel de-energized power to the facility by breaker panels outside the trailer and proceeded with an interior fire attack and later an exterior attack using two 1 ¾" hose lines. Approximately 500 gallons of water was used to extinguish the fire and the trailer is considered a 50% loss with fire damage throughout the attic section and heavy smoke, heat and water damage throughout the rest. FD personnel were able to make a very quick and aggressive attack to keep the fire extension intact and stop fire spread to any adjacent structures. The origin of the fire was at an air condition/heating unit attached to the side of the trailer. The heaviest fire damage was in the roof section nearest the air condition/heating unit. The trailer was barricaded off using caution tape. No one was injured during the event and the facility was turned over to facility personnel after the all clear was given.	\$50,000
Fire/Smoke (Building)	SRS 484-D Power Generating Plant	09/23/09 At 12:49, SRSFD personnel were dispatched to a report of a structure fire at the 484-D Power Generating Plant. While enroute, further information advised of one patient with burns being moved to B-7 to meet ambulance. M-3 & Engine #1 attended the patient while the remainder of the responders continued to the building to assess the fire. Patient was transported to Doctors Hospital with electrical burns. Upon arrival at the facility, the Battalion Chief was advised that the fire was out. Investigation revealed that the patient had been racking in a 480 VAC breaker when his metal torpedo level fell behind the breaker and arced violently. Breaker internal parts were smoldering. The facility assisted with verification of de-energized breaker and a fan was placed in front to cool it. There were no further actions on the part of the SRSFD. There were no fire department injuries.	\$50,000
Fire/Smoke (Other)	Ames Laboratory 335 Wilhelm Hall	A battery cell failed in a large UPS System in 335 Wilhelm Hall causing a fire involving the battery cabinet. This activated a smoke detector which activated a response from the municipal fire department. No sprinkler activation occurred. Fire was extinguished with a single ABC fire extinguisher. The manufacturer determined that the unit would have to be replaced rather than repaired.	\$36,000
Fire/Smoke (Building)	LANL TA-55-4	Air dryer in basement of TA-55-4 overheated and resulted in scorch burns on equipment. FD was dispatched and arrived. No signs of visual fire observed, but smoke could be smelled. Equipment was isolated pending investigation and repair/replacement.	\$25,000
Fire/Smoke (Building)	LANL TA-53-3S	Linear Accelerator cable insulation burning within Beam Channel Line C (Sector S) activated two smoke detectors and resulted in FD response. Burning reportedly self-extinguished. Cable and connector replacement required post-event.	\$20,000

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Loss Type	Location	Description	Dollar Loss
Fire/Smoke (Building)	Sandia National Laboratory NW Building	SNL/NM- Incident #09-03601. Synopsis: Incompatible components in oxygen system caused fire with minor injury 6505A north. Occurrence Report SNL-1000-2009-0012 generated. Call Number 13411. Narrative: A worker received a shallow second-degree burn when a mechanical failure occurred in an oxygen gas manifold system. The flash flame that resulted from the mechanical failure quickly self-extinguished but did result in both the injury and minor facility damage.	\$18,000
Fire/Smoke (Building)	Richland MO-956 200 West Area	On October 20, 2009, the HVAC unit in MO-956, a construction trailer in the 200 West Area failed which resulted in a building fire. Lack of inspections and preventive maintenance program on the HVAC units resulted in degradation of the unit and subsequent fire.	\$15,700
Fire/Smoke (Building)	LANL TA-3-130	Building TA-3-130 5-ton HVAC unit internally burned. Two occupants present within Bldg TA-3-130 activated fire alarm system by pulling manual pull station. FD responded.	\$15,000
Fire/Smoke (Other)	SRS P-Area	03/24/09 At 14:56:00, SRSFD personnel were dispatched to a call-in notification of a grass fire in P-Area caused by a John Deere lawnmower which had ignited. Upon arrival, responders confined the fire and extinguished the lawn tractor. USDA Forest Service was also dispatched and responded to provide mop-up of grass fire. There were no injuries and the lawn tractor was a total loss.	\$11,299

A complete listing of all CY09 fire damage incidents reported into the Fire Protection Reporting System database is shown in Appendix 1 to this report.

Water-Based Automatic Suppression System Performance

A total of eight incidents were reported where water-based suppression systems operated in CY09. System actuations are broken down as follows: Six Wet-pipe and two Dry-pipe. **None** of these activations were due to a fire although one actuation was a result of rising room temperatures. Causes for the inadvertent system activations are as follows: Six weather related, one design/material related and one personnel error- failure during testing.

Water-based system activations of interest are listed in Table 3 below.

Table 3
Water-Based System Actuations

Loss Type	Location	Description	Dollar Loss
Leaks, Spills, Releases	LANL TA-16-933	Server Rm HVAC unit failed, temperature of room reached point where 155F sprinkler head activated. HVAC unit and/or room not monitored remotely for temperature. Sprinkler system activation resulted in local and remote alarm activation. Sprinkler activation resulted in water damage to computing equipment, programmatic downtime, and recovery/restoration of the room.	\$630,000
Leaks, Spills, Releases	NTS	Fire Dispatch received a fire alarm from 06-CP-IQ. Upon arrival crews found water coming from the adjacent structure (06-CP-1C) behind the facility. Forcible entry was made and crews found a 2 1/2 inch break in the cross-tee section of the fire suppression system. Crews shut down the system and facility personnel were contacted. Networking equipment within the facility was damaged and repairs were estimated at \$16.7 K. Remedial Action: A working group determined that the sprinkler system was no longer required in the facility and was rendered non-operational. NSTec Facilities has adopted a pro-active approach regarding freeze protection for facilities during inclement weather.	\$16,700
Leaks, Spills, Releases	Y-12 9201-5	Wet pipe sprinkler system froze and broke due to inadequate area heat.	\$7,435
Leaks, Spills, Releases	LANL TA-15-564	Freeze damage to dry pipe system resulted in 'trouble' alarm signal to alarm station. Repair crews dispatched to restore system to operable status, and clean-up crews arrived to clean-up released water.	\$5,000
Leaks, Spills, Releases	Y-12 9114	Sprinkler head on wet pipe sprinkler system in elevator equipment room froze and broke due to inadequate area heat.	\$3,860
Leaks, Spills, Releases	Y-12 9215	Sprinkler head on wet pipe sprinkler system in transformer vault froze and broke due to inadequate area heat.	\$1,302
Leaks, Spills, Releases	Y-12 9202	Wet pipe sprinkler system froze and broke due to inadequate area heat.	\$1,174

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Loss Type	Location	Description	Dollar Loss
Leaks, Spills, Releases	NTS Remote Sensing Laboratory	Nevada Site Office Weekly Report dated May 11, 2009 - reported the activation of the overhead fire suppression system (foam) at the RSL-Andrews Maintenance Hangar during an electrical test of the hangar firefighting system. The individual conducting the test quickly deactivated the system before all four storage tanks within the system activated. One aircraft was inside at the time of activation and sustained no damage. Minimal amounts of foam were dispersed and there was no impact to any flight operations. Remedial Action: The responsible maintenance organization, Andrews AFB Civil Engineering Squadron, conducted an after-actions investigation and has adopted a team concept towards future testing of hangar fire protection suppression systems, which will include personnel whom are more familiar with the operation of the systems.	\$0

Non Water-Based Fire Suppression System Performance

Concerns regarding the effect of chlorofluorocarbons (CFCs), including Halon on the ozone layer have led to their regulation under the 1991 Clean Air Act. The Environmental Protection Agency has subsequently published implementing regulations to include prohibiting new Halon production, establishing container labeling requirements, imposing Federal procurement restrictions, imposing significant Halon taxes, issuing requirements for the approval of alternative agents, and listing essential areas where Halon protection is considered acceptable.

DOE's current policy does not allow the installation of any new Halon systems. Field organizations have been requested to aggressively pursue alternative fire suppression agents to replace existing systems and to effectively manage expanding Halon inventories. The long-term goal is the gradual replacement of all Halon systems.

In CY09, DOE maintained 214 active Halon 1301 systems in operation containing approximately 58,929 pounds of Halon. Stored Halon 1301 inventory was reported at approximately 35,857 pounds¹, a 36% increase over CY 2008. The number of active Halon 1301 systems is up 36% from the 157 systems active in CY08, while inventory is up 36% from CY08 levels of 26,372 pounds of agent (more accurate reporting demonstrates more systems in use than previously reported).

Operational and stored inventory amounts for Halon 1211 (for hand held extinguishers) were reported at 6,493 and 14,203 pounds respectively. This represents a reduction of 57% in the amount of operational Halon 1211 in use while the amount in storage remains virtually unchanged.

A total of three incidents were reported at DOE where Halon 1301 or other non-water based suppression systems operated in CY09 (one event is actually a compilation of 20 recurring discharges due to equipment failures at ORNL Building 8300), down from 42 events last year. Of these three incidents, only one release event was directly caused by a fire (an overheated pump resulted in an automatic actuation not involving Halon) and no sites reported any system failures during a fire. Additionally, approximately 194 pounds² of Halon 1301 were reported to be released to the environment in non-fire related events (SRS reported 69 pounds released via recycling activities and 125 pounds from incidental discharges).

Non water-based system actuations are listed in Table 4 on the following page.

¹ SRS continues to maintain a legacy Halon repository for the DOE complex, which includes clean Halon 1301 in bulk storage tanks and cylinders of various sizes and weights. There is no Halon 1211. SRS reports that the Halon bank is no longer accepting Halon inventory from the sites.

² The above figure does not consider system leakage in a stable condition.

Table 4
Non Water-Based System Actuations

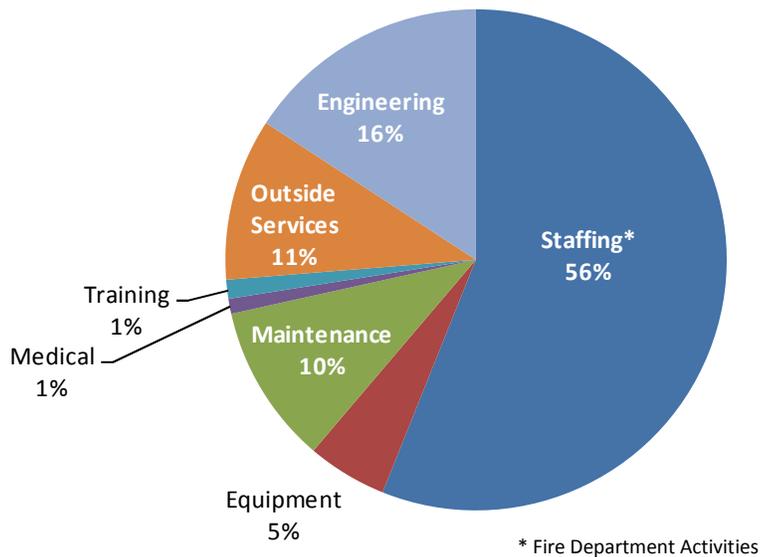
Loss Type	Location	Description	Dollar Loss
Fire/Smoke (Other)	Fermi National Laboratory Central Utilities Building	Failure of small Jacuzzi brand 0.5 hp Part # 91720279 pump used as a water bath. Plastic on pump continued to burn after power was removed.	\$150
Leaks, Spills, Releases	ORNL Building 8300	20 events classified as non-fire events where capacitors inside of a modulator failed resulting in release of energy. Typical responses to failures include de-energizing the equipment and manually activating a CO₂ system for cooling and equipment salvage. In most cases there is no fire and no fire is observed during the fire department response to investigate and report. One hundred pounds of CO ₂ agent is locally released on the modulator upon receipt of an automatic alarm indicating capacitor failure remotely at the control room. This is one of several recurring events involving different modulators. The costs related to each individual event are \$5,000.	\$100,000
Leaks, Spills, Releases	LANL TA-54-491	Employees inadvertently activated the FM-200 automatic fire extinguishing system by making contact with the manual release station. This resulted in the area being deluged with suppressant. The loss amount reflects cost to re-charge the system with new agent.	\$2,500

Recurring Fire Protection Program Costs

Yearly or recurring fire protection costs for CY09 reached \$151,007,665 for those sites reporting into the Fire Protection Program database. On a ratio of cost to replacement property value (recurring cost rate), the DOE spent approximately 24 cents per \$100 valuation for recurring fire protection activities at those sites³.

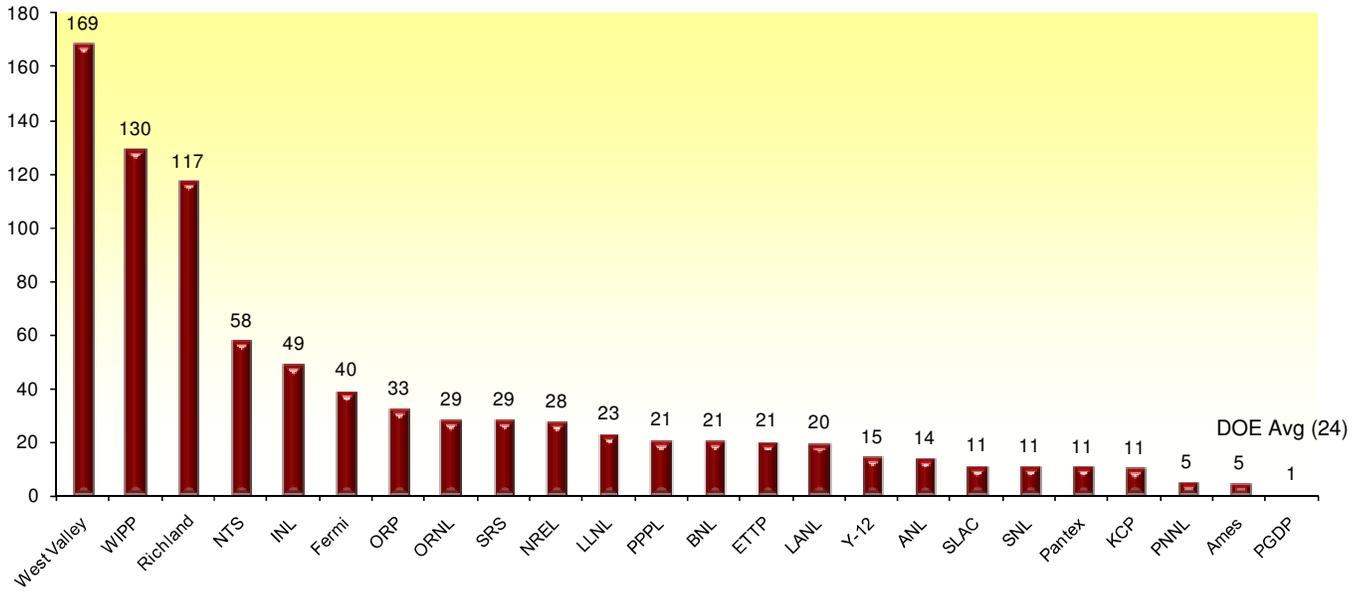
Figure 7 shows the CY09 recurring cost distribution by activity. Figure 8 lists the recurring cost rate by DOE sites. It should be noted that not all recurring cost activities were consistently reported, such as outside contracts and maintenance activities.

Figure 7
Recurring Fire Protection Cost Distribution



³ One site that is new to the fire protection database, Thomas Jefferson National Accelerator Facility (TJNAF), reported that all fire protection services are conducted by the local city fire department at no cost to the laboratory. In order to not skew the data, the valuation of TJNAF was not included in these calculations.

Figure 8
Program Cost Rate by Site
(Rate in cents per \$100 of valuation)



Fire Department Activities

Number of Responses:

The following is a summary of fire department responses for CY09.

1. Fire	359
2. Hazardous Materials	267
3. Other Emergency	2,400
4. Other Non-Emergency	3,123
5. Medical	2,504
Total	8,653

Comparing this data to the actual type of response is difficult since sites do not report incident responses in a consistent fashion. HSS is examining the use of a standard reporting format which complies with the National Fire Protection Association's Guide 901, *Uniform Coding for Fire Protection*, which could be linked to other DOE incident reporting programs for an accurate and cost effective approach to data collection in DOE. Other options, such as folding DOE's fire data collection into State or National programs such as the National Fire Incident Reporting System, were considered, but not utilized.

Notable Response Descriptions, such as mutual aid responses, that is not already included elsewhere in this report:

Table 5
Notable Responses

Location	Description
Argonne National Laboratory	A fire occurred on the APS Cooling Tower 803 deck as a result of improperly controlled welding activities. Fire damage was limited to a small section of the wood deck and some structural members underneath. The work was being done by outside contractors. Since the fire was caused by the contractor, the fire damage repair was covered by the contractor.
East Tennessee Technology Park-BJC	A CAT D6N dozer was operating in the Landfill when a small engine fire was discovered. It was extinguished by an employee with a fire extinguisher with only minor damage
East Tennessee Technology Park-BJC	A ceiling mounted 480V Chromalox radiant heater shorted out and dropped hot slag on a chair located under it. The chair was destroyed and the fire was extinguished by an employee with a fire extinguisher.
Idaho National Laboratory	An electrical short occurred in the wiring of a security vehicle. The fire was put out using fire extinguishers.
Idaho National Laboratory	Cigarette butt can was observed smoking and extinguished by employees.
Idaho National Laboratory	The IWTU air support structure was supplied by propane fired heaters located inside the structure. Propane was piped in from tanks outside the structure. The propane system 1st stage regulator failed which resulted in excess pressure on the inlet side of the 2nd stage regulator causing the pressure relieve diaphragm to lift and release propane. The propane gas was ignited by the vaporizer pilot flame.
Idaho National Laboratory	Operators, during remote waste sizing operations, identified three pieces of smoldering paper. Fire was snuffed out by operations. No damage.
Idaho National Laboratory	A vacuum cleaner detachable blower (leaf type) was being used to dry a freshly painted floor when the blower failed. The failure melted the blower, caused burn damage to the floor and damaged tarps being used to cover an open doorway.

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Location	Description
Idaho National Laboratory	A fire occurred involving a portable heater being used to supply temporary heat in C cell. Sandblasting grit had accumulated inside the heater and prevented the electrical contacts from operating properly, causing the contacts to stick in the energized position even though the heater had a thermostat and over-temperature limit switch. Damage was limited to the heater.
Idaho National Laboratory	A fire occurred on a degraded spark curtain for a cutting machine. Damage limited to spark curtain.
Idaho National Laboratory	An employee was flame soldering copper tubing in a HVAC cabinet when a fire occurred in the insulation of the cabinet. The insulation had become covered in a fine oil mist due to pas leak of the compressor oil.
Idaho National Laboratory	A flash fire occurred when a researcher was removing a small amount of powdered material from a plasma reaction chamber.
Idaho National Laboratory	At 1450, INL Fire Department (FD) responded to a report of fire along HWY 22. Upon arrival, a single tree fire was smoldering approximately 60 yds west of the road. Fire was determined to be lightning caused with final acreage of less than 1/4 acre. No damage to INL property.
Idaho National Laboratory	INL FD responded to a report of fire on the Middle Butte. Fire was determined to be lightning caused with final acreage of less than 1/4 acre. No damage to INL property.
Idaho National Laboratory	INL FD responded to report of fire on HWY 33. Upon arrival, a small roadside fire was observed smoldering in grass and sage. Fire was determined to be human caused with catalytic converter particles as the ignition source. Final acreage was less than 1/4 acre. No damage to INL property.
Los Alamos National Laboratory	Smoldering wooden pallet used for storage of large metal objects discovered outside Bldg TA-15-563. Site personnel extinguished with portable fire extinguisher. FD responded and further wet down the pallet. Personnel moved the pallet to a shaded location.
Los Alamos National Laboratory	Lightning caused brush fire between TA-22 and TA-69. 10 ft x 20 ft area of grass and brush burned surrounding a phone junction box and power line pole. Fire department responded, employing "micro-blaze" in vicinity of telephone j-box and hand line for area near power line pole.
Los Alamos National Laboratory	Fire alarm system activated within Bldg TA-3-43 by building steam leak. Fire Dept responded. TA-3-43 was vacant and in transition to D&D - no property loss or mission impact resulted. Steam line was secured.
Los Alamos National Laboratory	Improper disposal of laboratory acetone waste into an acid waste container containing nitric acid within a cabinet below a chemical fume hood produced an exothermic reaction which lead to an operational emergency. Chemical reaction over-pressurized the glass acid waste container and shattered adjacent nitric acid container, resulting in release of brown fumes into the lab. Emergency response org, LANL HazMat and FD responded. Team investigation resulted.
National Renewable Energy Laboratory	During a catered event with heated food service (Sterno), adjacently situated combustible table decorations overheated and ignited. The fire was immediately identified and extinguished with a hand held dry chemical extinguisher. The lasagna was destroyed along with some plastic table decorations belonging to the catering company.
Nevada-Test Site	National Fire Incident Reporting System (NFIRS) Incident # 10-055 occurred near the Area 6 gas station on the NTS. An NSTec employee noticed fire coming from a power pole and dialed 91 1. NTS Fire and Rescue personnel responded and extinguished the fire. Damage was limited to insulators, cross-arms, and power lines. Remedial Action: Referred to the National Security Technologies Power Dispatch Operations Manager.
Oak Ridge National Laboratory-UT/Battelle	The ORNL Fire Department received a 911 telephone call notification of a food toaster fire in Building 1062. Upon the Fire Department discovered the fire had been extinguished by a building occupant using a portable fire extinguisher. Damage was contained to the food toaster. There was no extension to the structure or adjacent building contents.

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Location	Description
Office of River Protection	A small fire occurred in Cell 13-A of the Pre-Treatment Building construction site. Workers were using a grinder on metal when the sparks scorched a cardboard box. An extinguisher was partially discharged to put the fire out. Hanford Fire Department (HFD) was notified and responded to investigate. Fire was out when HFD arrived.
Portsmouth Gaseous Diffusion Plant	The fire occurred on July 16, 2009 at the X-633-2D Cooling Tower. The United States Enrichment Corporation (USEC) Fire Investigator estimated the fire damage as being in excess of \$10,000 using the criteria in NFPA 921: Guide for Fire and Explosion Investigation 2008 and replacement value costs. This estimate determined the costs to repair and return the structure to its pre-fire condition. However, based upon the following information it was determined that there was no costs associated with the fire. The X-633 Cooling Tower Complex, where the X-633-2D Cooling Tower is located, had been slated for demolition when DOE assumed responsibility on July 10, 2009. Due to the scheduled demolition, the tower is presumed to have no value. The X-633-2D tower had received wind damage during a storm on July 11, 2009. The work crews were removing damaged panels to render the structure safe from the wind event when the fire was discovered. The X-633-2D structure incurred some damage to decking boards, support structure, and siding due to the fire and the subsequent emergency response. Due to the scheduled demolition, no repairs were made to the structure after the event, and no costs were incurred. The demolition of the damaged tower structure was already scheduled and demolition costs are funded as an American Recovery and Reinvestment Act (ARRA) project being performed by LATA/Parallax Portsmouth, LLC (LPP), therefore no costs were incurred. The costs for the emergency response to the fire event were funded by the Government Furnished Services and Items (GFS&I) contract with USEC, therefore no costs were incurred. No other costs were associated with the fire event.
Sandia National Laboratories	SNL/New Mexico (NM) Department 4139 sorting personnel were examining the contents of a waste container with depleted uranium machining scrap and plate chunks. A small uranium fire occurred and was immediately extinguished using a Class D fire extinguisher. Sorting personnel needed to examine the contents of an 8-gallon drum containing depleted uranium machining scrap and plate chunks to determine if prohibited items were present. Lessons Learned SSO-SNL-2010-4139-02 was published.
Sandia National Laboratories	SNL/NM- Incident #09-03252 Call Number: 13053 Synopsis: Call Number 13411 Narrative: Response 1 and Squad 3 called out to Lovelace Research Area in response to a wildland fire directly west of the facility about 1-2miles away. Kirtland Fire was actively dowsing hot-spots in vicinity and estimated about 425 acres in question were burned to include portions of Isleta property that were being controlled by Isleta Fire Department.
Savannah River Site	Savannah River Site Fired Department (SRSFD) personnel were dispatched to a call-in notification of a fire on the locomotive on the 221-F lead-in to F-Area train tracks. Upon arrival, it was discovered that an engine starter possibly went bad causing wiring to overheat and catching insulation on fire. One 20-lb. fire extinguisher was used by an employee on the train to put out the fire. There were no injuries.
Savannah River Site	SRSFD personnel were dispatched to a call-in notification of smoke in 749-A. Upon arrival, SRSFD personnel discovered that an electrical transformer had melted inside of an electrical panel. It was determined that the transformer was electrically overloaded. A heat gun and drop cord was being used from an electrical outlet that was fed from this transformer to heat material that was mounted in a lathe. The facility had closed the disconnect at the panel. SRSFD responders sprayed the inside of the electrical panel with a CO2 extinguisher. They also used the thermal imaging camera to verify there was no further extension. E & I barricaded the area. There were no injuries.
Savannah River Site	SRSFD personnel were notified directly of an after-the-fact call-in notification of a lawnmower fire on the cut through road from K-Area to L-Area. The operator smelled smoke and stopped the mower. He noticed smoke coming from the engine compartment; lifted the seat; and found 3' flames coming from grass clippings around the engine and wiring. A portable fire extinguisher was used to stop the fire and the SRSFD was notified. The BC notified the caller to notify SRSOC and that he would send an officer over to investigate and initiate report. The exact cause was undetermined until maintenance initiates repairs. There were no injuries.

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Location	Description
Savannah River Site	SRSFD personnel were dispatched to a call-in notification of a stove fire a 234- H. While enroute, dispatch advised that the fire was out. The BC sent Station #1 personnel to investigate and write fire report. It was discovered that a heating element had caught fire and caused the flames in the bottom of the oven. The power was disconnected and there were no further actions taken. There were no injuries.
Savannah River Site	SRSFD received an after-the-fact notification by a SRNL employee working at a remote site (686-3G) below M-Area of a fire on a piece of equipment. He had been instructed to bring it to Station #2 so that a fire report could be written. A solar controller had caught fire and had been extinguished using a dry chemical fire extinguisher from a vehicle. There were no injuries.
Savannah River Site	SRSFD personnel were dispatched to a call-in notification of a smokador fire at 740-3A. Upon arrival, SRSFD personnel found a small piece of paper smoking inside the can. One cup of water was used to extinguish the fire. There were no injuries and no costs incurred.
Savannah River Site	SRSFD personnel were dispatched to a fuse that had burned above a transformer at Barricade #3. The fuse self-extinguished and the Barricade went on backup power. FD personnel responded but no action was taken. There were no injuries and no costs incurred.
Savannah River Site	SRSFD personnel responded to a pump motor fire on top of Tank 506, 222-H, A-Line due to an activated pull station. The operator had noticed sparks and flames coming from the pump motor. Upon arrival, it was discovered that the fire had self-extinguished due to facility personnel de-energizing the equipment. The tank was in a contamination area. One RCO Inspector and one fire fighter dressed-out and entered the area. RCO smeared the pump with negative results and the fire fighter used the thermal imaging camera to check motor housing and found the motor temperature to be dropping. There were no injuries and no dollar loss.
Savannah River Site	SRSFD received an after-the-fact notification of a pile of saw dust that had been smoldering in J-Area. Station #1 personnel responded and found that a Parsons Group employee had extinguished the smoldering material with water (three 5-gallon buckets full). The fire was caused by discarded smoking material near the 6' X 1' area. There were no injuries and no costs incurred.
Savannah River Site	SRSFD personnel were dispatched to 484-D to a call-in notification of a fire in a mobile generator. Upon arrival, it was discovered that the facility had shut down the diesel generator and used a dry chemical extinguisher to put out the fire, which appears to have been caused by a carbon deposit build-up within the muffler. There were no injuries and no costs incurred.
Savannah River Site	SRSFD personnel were dispatched to a call-in fire at MOX. Upon arrival, responders were met by an escort and found a waste bin smoking on the northeast side of the area. A jump line was pulled from the engine and the fire was extinguished using approximately 50-gallons of water. The bin contained mostly wood products and some metal. The fire was most likely caused by a cigarette. There were no injuries and no costs incurred.
Savannah River Site	SRSFD personnel were dispatched to a call-in notification by WSI of a fire off of G-Road. Upon arrival, it was determined that one 20' pine tree was on fire in the area of a control burn six days earlier but was close to the road and power lines. F-1 was used to extinguish the fire and it was marked for the USFS to push down at a later date. There were no injuries and no costs incurred.
Savannah River Site	SRSFD personnel were dispatched to a brush fire at the intersection of E & F Roads. Upon arrival, it was discovered that the fire was actually part of a controlled burn with smoldering stumps in a previously burned area. USFS was notified. There were no injuries and no costs incurred.
Savannah River Site	Dispatch notified SRSFD personnel of a call-in grass fire near the L-Area entrance. The fire apparently started with a fault from a transformer outside the area and caught the grass on fire. Responders used a fire hose and approximately 20 gallons of water to extinguish the fire. There were no injuries and no costs incurred.

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Location	Description
Savannah River Site	SRSFD personnel were dispatched to a call-in notification of a grass fire on B Road at mile marker #7. Upon arrival, a small grass fire in the median about 100' X 20' was extinguished using 100 gallons of water. The cause was undetermined. There were no injuries and no costs incurred.
Savannah River Site	SRSFD received an after-the-fact notification of an incident at 717-A. Maintenance personnel were attempting to power-up a milling lathe when an electrical controller within the lathe overheated and tripped the breaker. No extinguisher was used, and no action taken by the SRSFD except to investigate and create report. There were no injuries and no costs incurred.
SLAC Linear Accelerator Laboratory	A 50 kV DC modulator capacitor located in an equipment cabinet in Building 62 (End Station B) experienced an explosive rupture during NLCTA operation. The rupture was followed by a residual fire in the oil-soaked mylar/aluminum foil dielectric inside the capacitor. This fire was limited to the capacitor and was suppressed by a carbon dioxide fire extinguishing system built into the cabinet. A building occupant manually activated the suppression system and then called 911 and x5555. The system activation also caused a building-wide evacuation, which involved approximately five people. There were no injuries and no damage to any equipment in the cabinet except the capacitor. The fire department arrived on scene and found the fire extinguished. The cabinet contained 24 polycarbonate-encased capacitors, each about the size of a rectangular five gallon container. The system also included an automatic smoke sensor, which activated shortly after the suppression system was manually tripped.
SLAC Linear Accelerator Laboratory	Fire retardant paper filter fire in exterior steel dust collector adjacent to fabrication shop. Fire caused by persistent spark drawn into unit past entry baffles. Extinguished with manual hose stream.
SLAC Linear Accelerator Laboratory	A subcontractor to the SLAC landscaping contractor was providing flail mowing service to SLAC to cut down dry grass along SLAC's property lines and roads. Conditions were 68 deg. F, 54% humidity and winds of 11-12 mph (up from 3-5 mph at 10am). The mower normally stops activity when winds rise above 10 mph, and due to the increased wind speed, the subcontractor was preparing to stop activity at noon. At about 11:50 am, the mower was cutting a field across from Alpine Gate and passed over an area with a discarded piece of concrete riprap (concrete originally formed in a burlap bag for diking work). The teeth of the rotating steel flail cylinder gouged across the concrete and sparked. After driving several hundred feet beyond this area, the mower looked back and realized that a fire had started in the cut grass. He attempted to call out on his cell phone but had no phone service. He went to the Alpine Gate Guard Station, which was closed, and then proceeded to the nearby site fence line and alerted the staff of the adjoining equestrian training facility, who contacted 911 and SLAC Security at 11:56am. The mower came back to the point of the fire and attempted to extinguish it with a 3-gallon water sprayer and a shovel. However, the fire had spread to a diameter of over 8 feet, too large for him to extinguish with these tools. Until the fire department arrived, he continued to mow around the fire to create a fire break to isolate it further from uncut grass. At 11:59 am, SLAC Security arrived and opened the Alpine Gate. A dust-control water tender sent by the equestrian center immediately came in the gate and followed behind the mower, wetting down the cut grass around the fire. When the fire department arrived a few minutes later, the fire was about 1/3-acre in size but well contained. They extinguished it in approximately 10 to 15 minutes and spent an additional ½-hour conducting cleanup. A SLAC Security fire watch was posted for the area for the rest of the day. The fire was confined to cut grass. There was no damage to government property. A radiation monitor located in the field was briefly exposed to flame but was determined to be completely undamaged.
Y-12	The fire was caused when a hotplate failed and overheated, causing the vinyl covered wire basket underneath the unit to overheat and ignite. The hotplate was not being utilized and had been left in the off position; however it remained plugged into a receptacle provided on the side hood face.
Y-12	Small grass fire due to electrical equipment arcing. Fire extinguisher used to extinguish fire in approximately 10 ft. X 10 ft. area with sporadic spots of grass.
Y-12	A portable electric heater was being used to elevate temperatures inside a switchgear cabinet to keep condensation from accumulating.

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Location	Description
Y-12	A small amount of sulfuric acid spilled on 2 paper towels which charred and then ignited while in a hood. Extinguished using 100cc of water.

Conclusions

DOE experienced no significant facility damage, fatalities, or major injuries from fire in CY09. The results of this annual report indicate that the Department compares well to previous years and continues to have a good program.

The Annual Summary reporting process has recently been automated to streamline data collection and provide a more thorough review of DOE Reporting Element activities. It is now possible to view all Annual Summary Reporting Element responses since 1991 at the Site, Operations, Lead Program Secretarial Office and Headquarters levels, as well as reference other DOE reporting activities such as ORPS. A copy of the latest version of this application can be obtained at the following internet address: <http://www.hss.energy.gov/nuclearsafety/ns/fire/fpdb.html>.

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Appendix 1 — Listing of all Fire Damage Incidents as Reported into the Fire Protection Reporting System Database for CY09

Site	Loss Type	Location	Description	Dollar Loss
Los Alamos National Laboratory	Leaks, Spills, Releases	TA-16-933 Room 127 Server Room VTR	Server Rm HVAC unit failed, temperature of room reached point where 155F sprinkler head activated. HVAC unit and/or room not monitored remotely for temperature. Sprinkler system activation resulted in local and remote alarm activation. Sprinkler activation resulted in water damage to computing equipment, programmatic downtime, and recovery/restoration of the room.	\$630,000
Brookhaven National Laboratory	Fire/Smoke (Building)	Building 820, Accelerator Test Facility	A fire alarm was initiated at 3:21 p.m. on Wednesday, February 18, 2009 at the Accelerator Test Facility (ATF) in Building 820 at Brookhaven National Laboratory (BNL), Upton, NY. Facility personnel discovered the fire while resetting the Linear Accelerator (Linac) modulator. Staff secured power to the mezzanine where the modulator and other electronic equipment were located, activated a manual pull station while exiting and evacuated the building. Fire Rescue personnel responded and extinguished the fire in less than ten (10) minutes. Operations at the ATF are expected to be interrupted until May 2009. The fire started in a pulse-forming network (PFN) in the Linac klystron modulator. The modulator delivers high voltage pulses at a 1.5 hertz rate to a klystron that in turn provides RF energy to the Linac. The PFN was destroyed and adjacent electronic equipment was damaged. The PFN was composed of oil-filled plastic capacitors, inductors (copper coils wound around Glastic tubes) and resistors all supported on Glastic frames.	\$100,000
Richland Operations Office	Fire/Smoke (Brush)	100K Area	On August 10, 2009, the HFD responded to a wildland fire northeast of the 100K Area, near the 1608K Pump and Treat operations. This 4.5-acre fire was caused by a spark from the blade of a belly scraper hitting a rock and igniting dried grasses. The fire destroyed piping and cabling for the 1608K Pump and Treat.	\$97,839

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Site	Loss Type	Location	Description	Dollar Loss
Savannah River Site	Fire/Smoke (Other)	J-Area	01/23/09 At 03:15, SRSFD personnel were dispatched to an after-the-fact notification of a fire in J-Area. Construction personnel had erected tarps over a concrete slab using formwork for support with propane heaters set under the tarps. The heaters were too close to the formwork which caused the forms to ignite. Initial reports to the SRSFD were that the on-duty fire watch had used 1 portable extinguishers and that the fire was confined to a small area. It was also reported that only scrap material had burned. Further investigation revealed that the fire was actually much larger than initially reported and that 5 portable fire extinguishers and a water hose had also been used to combat the blaze. It had been extinguished by 2 fire watch personnel, an electrician and the superintendent. The office of Safety and Quality Assurance for DOE launched an investigation and generated a report identifying numerous deficiencies and corrective actions (see Report SPD-SWPF-0312). There were no injuries. An extensive engineering evaluation of the concrete surface and the reinforcing bars exposed to the fire was conducted and determined the concrete and re-bar had received very little damage. It was determined that pressure cleaning of the rebar and concrete surface was all that was needed to allow construction to continue. The Type B investigation, safety stand-downs and the engineering evaluation needed to certify the concrete as acceptable for use are estimated to be \$97,000.00.	\$97,000
Nevada-Test Site	Fire/Smoke (Brush)	Nevada Test Site	Seven wildland fires occurred on the Nevada Test Site (NTS) in Areas 18 & 30. These fires (National Fire Incident Reporting System (NFRS) Incident # 09-315,318,321,331-333, and 348) were caused by live-fire training exercises performed by Department of Defense personnel. No NTS structures, systems, or components were threatened or damaged as a result of these fires. Remedial Action: Extensive vegetation abatement activities have occurred at this training location to minimize the potential for a recurrence of brush fires.	\$65,816
Savannah River Site	Fire/Smoke (Building)	245-1F	At 04:34, SRSFD personnel were dispatched to a call-in notification of a fire at the 245-1F trailer with smoke and flames showing through the roof. Upon arrival SRSFD found flames coming from the Northwest portion roofline of the doublewide trailer, and heavy smoke throughout. FD personnel de-energized power to the facility by breaker panels outside the trailer and proceeded with an interior fire attack and later an exterior attack using two 1½" hose lines. Approximately 500 gallons of water was used to extinguish the fire and the trailer is considered a 50% loss with fire damage throughout the attic section and heavy smoke, heat and water damage throughout the rest. FD personnel were able to make a very quick and aggressive attack to keep the fire extension intact and stop fire spread to any adjacent structures. The origin of the fire was at an air condition/heating unit attached to the side of the trailer. The heaviest fire damage was in the roof section nearest the air condition/heating unit. The trailer was barricaded off using caution tape. No one was injured during the event and the facility was turned over to facility personnel after the all clear was given.	\$50,000

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Site	Loss Type	Location	Description	Dollar Loss
Savannah River Site	Fire/Smoke (Building)	484-D Power Generating Plant	09/23/09 At 12:49, SRSFD personnel were dispatched to a report of a structure fire at the 484-D Power Generating Plant. While enroute further information advised of one patient with burns being moved to B-7 to meet ambulance. M-3 & Engine #1 attended the patient while the remainder of the responders continued to the building to assess the fire. Patient was transported to Doctors Hospital with electrical burns. Upon arrival at the facility, the Battalion Chief was advised that the fire was out. Investigation revealed that the patient had been racking in a 480 VAC breaker when his metal torpedo level fell behind the breaker and arced violently. Breaker internal parts were smoldering. The facility assisted with verification of de-energized breaker and a fan was placed in front to cool it. There were no further actions on the part of the SRSFD. There were no fire department injuries.	\$50,000
Ames Laboratory	Fire/Smoke (Other)	335 Wilhelm Hall	A battery cell failed in a large UPS System in 335 Wilhelm Hall causing a fire involving the battery cabinet. This activated a smoke detector which activated a response from the municipal fire department. No sprinkler activation occurred. Fire was extinguished with a single ABC fire extinguisher. The manufacturer determined that the unit would have to be replaced rather than repaired.	\$36,000
Los Alamos National Laboratory	Fire/Smoke (Building)	TA-55-4 Basement Overheating Air Dryer	Air dryer in basement of TA-55-4 overheated and resulted in scorch burns on equipment. FD was dispatched and arrived. No signs of visual fire observed, but smoke could be smelled. Equipment was isolated pending investigation and repair/replacement.	\$25,000
Los Alamos National Laboratory	Fire/Smoke (Building)	TA-53-3S Rm S107 Beam Channel Line C LANSCE	Linear Accelerator cable insulation burning within Beam Channel Line C (Sector S) activated two smoke detectors and resulted in FD response. Burning reportedly self-extinguished. Cable and connector replacement required post-event.	20,000
Sandia National Laboratory	Fire/Smoke (Building)	SNL/NM Building 6505A	SNL/NM- Incident #09-03601 Synopsis: Incompatible components in oxygen system caused fire with minor injury 6505A north. Occurrence Report SNL-1000-2009-0012 generated. C all Number 13411 Narrative: A worker received a shallow second-degree burn when a mechanical failure occurred in an oxygen gas manifold system. The flash flame that resulted from the mechanical failure quickly self-extinguished but did result in both the injury and minor facility damage.	18,000
Nevada-Test Site	Fire/Smoke (Other)	Nevada Test Site	Fire Dispatch received a fire alarm from 06-CP-IQ. Upon arrival crews found water coming from the adjacent structure (06-CP-1C) behind the facility. Forcible entry was made and crews found a 2 1/2 inch break in the cross-tee section of the fire suppression system. C crews shut down the system and facility personnel were contacted. Networking equipment within the facility was damaged and repairs were estimated at \$16.7 K. Remedial Action: A working group determined that the sprinkler system was no longer required in the facility and was rendered non-operational. NSTec Facilities has adopted a pro-active approach regarding freeze protection for facilities during inclement weather.	16,700
Richland Operations Office	Fire/Smoke (Building)	MO-956, 200 West Area	On October 20, 2009, the HVAC unit in MO-956, a construction trailer in the 200 West Area failed which resulted in a building fire. Lack of inspections and preventive maintenance program on the HVAC units resulted in degradation of the unit and subsequent fire.	15,700

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Site	Loss Type	Location	Description	Dollar Loss
Los Alamos National Laboratory	Fire/Smoke (Building)	TA-3-130 HVAC internal fire	Building TA-3-130 5-ton HVAC unit internally burned. Two occupants present within Bldg TA-3-130 activated fire alarm system by pulling manual pull station. FD responded.	15,000
Savannah River Site	Fire/Smoke (Other)	P-area	03/24/09 At 14:56:00, SRSFD personnel were dispatched to a call-in notification of a grass fire in P-Area caused by a John Deere lawnmower which had ignited. Upon arrival, responders confined the fire and extinguished the lawn tractor. USDA Forest Service was also dispatched and responded to provide mop-up of grass fire. There were no injuries and the lawn tractor was a total loss.	11,299
Y-12	Leaks, Spills, Releases	9201-5 WPS9E	Wet pipe sprinkler system froze and broke due to inadequate area heat.	7,435
Los Alamos National Laboratory	Leaks, Spills, Releases	TA-15-564 Dry Pipe System Freeze Damage	Freeze damage to dry pipe system resulted in 'trouble' alarm signal to alarm station. Repair crews dispatched to restore system to operable status, and clean-up crews arrived to clean-up released water.	5,000
Oak Ridge National Laboratory-UT/Battelle	Fire/Smoke (Other)	Building 8300	20 events classified as non-fire events where capacitors inside of a modulator fail resulting in release of energy. Typical response to failures include de-energizing the equipment and manually activating a CO2 system for cooling and equipment salvage. In most cases there is no fire and no fire is observed during the fire department response to investigate and report. One hundred pounds of CO2 agent is locally released on the modulator upon receipt of an automatic alarm indicating capacitor failure remotely at the control room.	5,000 each
Savannah River Site	Fire/Smoke (Other)	Locomotive operating near F-area	10/30/09 At 15:48, SRSFD personnel were dispatched to a call-in notification of a fire on the locomotive on the 221-F lead-in to F-Area train tracks. Upon arrival, it was discovered that an engine starter possibly went bad causing wiring to overheat and catching insulation on fire. One 20-lb. fire extinguisher was used by an employee on the train to put out the fire. There were no injuries.	\$5,000
Nevada-Test Site	Fire/Smoke (Other)	Nevada Test Site	NFIRS Incident # 10-055 occurred near the Area 6 gas station on the NTS. An NSTec employee noticed fire coming from a power pole and dialed 911. NTS Fire and Rescue personnel responded and extinguished the fire. Damage was limited to insulators, cross-arms, and power lines. Remedial Action: Referred to the National Security Technologies Power Dispatch Operations Manager.	\$4,253
Y-12	Leaks, Spills, Releases	9114 WPS01	Sprinkler head on wet pipe sprinkler system in elevator equipment room froze and broke due to inadequate area heat.	\$3,860
Los Alamos National Laboratory	Leaks, Spills, Releases	TA-54-491 Inadvertent FM-200 System Activation	Employees inadvertently discharged total flooding FM-200 automatic fire extinguishing system by making contact with the manual release station. Loss amount reflects cost to re-charge the system with new agent.	\$2,500
Idaho National Laboratory	Fire/Smoke (Vehicle)	Materials and Fuels Complex	An electrical short occurred in the wiring of a security vehicle. The fire was put out using fire extinguishers.	\$2,500

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Site	Loss Type	Location	Description	Dollar Loss
Stanford Linear Accelerator	Fire/Smoke (Other)	B. 062, End Station B, NLCTA Modulator Cabinet	At approximately 13:10, a 50 kV DC modulator capacitor located in an equipment cabinet in Building 62 (End Station B) experienced an explosive rupture during NLCTA operation. The rupture was followed by a residual fire in the oil-soaked Mylar/aluminum foil dielectric inside the capacitor. This fire was limited to the capacitor and was suppressed by a carbon dioxide fire extinguishing system built into the cabinet. A building occupant manually activated the suppression system and then called 911 and x5555. The system activation also caused a building-wide evacuation, which involved approximately five people. There were no injuries and no damage to any equipment in the cabinet except the capacitor. The fire department arrived on scene and found the fire extinguished. The cabinet contained 24 polycarbonate-encased capacitors, each about the size of a rectangular five gallon container. The system also included an automatic smoke sensor, which activated shortly after the suppression system was manually tripped.	\$1,500
Y-12	Leaks, Spills, Releases	9215 WPS05	Sprinkler head on wet pipe sprinkler system in transformer vault froze and broke due to inadequate area heat.	\$1,302
Y-12	Leaks, Spills, Releases	9202 WPS02	Wet pipe sprinkler system froze and broke due to inadequate area heat.	\$1,174
Idaho National Laboratory	Fire/Smoke (Other)	INTEC	Cigarette butt can was observed smoking and extinguished by employees.	\$1,100
Idaho National Laboratory	Fire/Smoke (Other)	Integrated Waste Treatment Unit	The IWTU air support structure was supplied by propane fired heaters located inside the structure. Propane was piped in from tanks outside the structure. The propane system 1st stage regulator failed which resulted in excess pressure on the inlet side of the 2nd stage regulator causing the pressure relieve diaphragm to lift and release propane. The propane gas was ignited by the vaporizer pilot flame.	\$1,000
Idaho National Laboratory	Fire/Smoke (Other)	WMF-676, North Boxline sorting trough	Operators, during remote waste sizing operations, identified three pieces of smoldering paper. Fire was snuffed out by operations. No damage.	\$1,000
Stanford Linear Accelerator	Fire/Smoke (Other)	Dust Collector Adjacent to Bldg. 025, Light Fab	Fire retardant paper filter fire in exterior steel dust collector adjacent to fabrication shop. Fire caused by persistent spark drawn into unit past entry baffles. Extinguished with manual hose stream.	\$1,000
Savannah River Site	Fire/Smoke (Building)	749-A	10/14/09 At 08:09, SRSFD personnel were dispatched to a call-in notification of smoke in 749-A. Upon arrival, SRSFD personnel discovered that an electrical transformer had melted inside of an electrical panel. It was determined that the transformer was electrically overloaded. A heat gun and drop cord was being used from an electrical outlet that was fed from this transformer to heat material that was mounted in a lathe. The facility had closed the disconnect at the panel. SRSFD responders sprayed the inside of the electrical panel with a CO2 extinguisher. They also used the thermal imaging camera to verify there was no further extension. E & I barricaded the area. There were no injuries.	\$1,000

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Site	Loss Type	Location	Description	Dollar Loss
Idaho National Laboratory	Fire/Smoke (Building)	Advanced Test Reactor Complex, TRA-678	A vacuum cleaner detachable blower (leaf type) was being used to dry a freshly painted floor when the blower failed. The failure melted the blower, caused burn damage to the floor and damaged tarps being used to cover an open doorway.	\$550
Y-12	Fire/Smoke (Building)	113C Union Valley Road	The fire was caused when a hotplate failed and overheated, causing the vinyl covered wire basket underneath the unit to overheat and ignite. The hotplate was not being utilized and had been left in the off position; however, it remained plugged into a receptacle provided on the side hood face.	\$527
Savannah River Site	Fire/Smoke (Other)	Between K and L areas	12/08/09 At 10:05, SRSFD personnel were notified directly of an after-the-fact call-in notification of a lawnmower fire on the cut through road from K-Area to L-Area. The operator smelled smoke and stopped the mower. He noticed smoke coming from the engine compartment; lifted the seat; and found 3' flames coming from grass clippings around the engine and wiring. A portable fire extinguisher was used to stop the fire and the SRSFD was notified. The BC notified the caller to notify SRSOC and that he would send an officer over to investigate and initiate report. The exact cause was undetermined until maintenance initiates repairs. There were no injuries.	\$500
Idaho National Laboratory	Fire/Smoke (Building)	Integrated Waste Treatment Unit	A fire occurred involving a portable heater being used to supply temporary heat in C cell. Sandblasting grit had accumulated inside the heater and prevented the electrical contacts from operating properly, causing the contacts to stick in the energized position even though the heater had a thermostat and over-temperature limit switch. Damage was limited to the heater.	\$350
East Tennessee Technology Park-BJC	Fire/Smoke (Other)	Transportation and Disposition Landfill (EMWMF)	A CAT D6N dozer was operating in the Landfill when a small engine fire was discovered. It was extinguished by an employee with a fire extinguisher with only minor damage	200
East Tennessee Technology Park-BJC	Fire/Smoke (Other)	K-1316-J	A ceiling mounted 480 V Chromalox radiant heater shorted out and dropped hot slag on a chair located under it. The chair was destroyed and the fire was extinguished by an employee with a fire extinguisher.	200
Fermi National Accelerator Laboratory	Fire/Smoke (Other)	Central Utilities Building	Failure of small Jacuzzi brand 0.5 hp Part # 91720279 pump used as a water bath. Plastic on pump continued to burn after power was removed.	150
Savannah River Site	Fire/Smoke (Building)	234-H	At 11:51, SRSFD personnel were dispatched to a call-in notification of a stove fire a 234- H. While enroute, dispatch advised that the fire was out. The BC sent Station #1 personnel to investigate and write fire report. It was discovered that a heating element had caught fire and caused the flames in the bottom of the oven. The power was disconnected and there were no further actions taken. There were no injuries.	150
Los Alamos National Laboratory	Fire/Smoke (Other)	TA-15-563 outdoors	Smoldering wooden pallet used for storage of large metal objects discovered outside Bldg TA-15-563. Site personnel extinguished with portable fire extinguisher. FD responded and further wet down the pallet. Personnel moved the pallet to a shaded location.	100

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Site	Loss Type	Location	Description	Dollar Loss
Sandia National Laboratory	Fire/Smoke (Other)	Building 6921	SNL/NM Department 4139 sorting personnel were examining the contents of a waste container with depleted uranium machining scrap and plate chunks. A small uranium fire occurred and was immediately extinguished using a Class D fire extinguisher. Sorting personnel needed to examine the contents of an 8-gallon drum containing depleted uranium machining scrap and plate chunks to determine if prohibited items were present. Lessons Learned SSO-SNL-2010-4139-02 was published.	100
Savannah River Site	Fire/Smoke (Other)	171-A	At 11:00, the SRSFD received an after-the-fact notification by a SRNL employee working at a remote site (686-3G) below M-Area of a fire on a piece of equipment. He had been instructed to bring it to Station #2 so that a fire report could be written. A solar controller had caught fire and had been extinguished using a dry chemical fire extinguisher from a vehicle. There were no injuries.	100
Idaho National Laboratory	Fire/Smoke (Building)	Specific Manufacturing Capability, TAN-677	A fire occurred on a degraded spark curtain for a cutting machine. Damage limited to spark curtain.	100
Idaho National Laboratory	Fire/Smoke (Building)	Materials and Fuels Complex, MFC-774	An employee was flame soldering copper tubing in a HVAC cabinet when a fire occurred in the insulation of the cabinet. The insulation had become covered in a fine oil mist due to past leak of the compressor oil.	100
National Renewable Energy Laboratory	Fire/Smoke (Building)	NWTC Building 251	During a catered event with heated food service (Sterno), adjacently situated combustible table decorations overheated and ignited. The fire was immediately identified and extinguished with a hand held dry chemical extinguisher. The lasagna was destroyed along with some plastic table decorations belonging to the catering company.	100
Y-12	Fire/Smoke (Brush)	North of 9212	Small grass fire due to electrical equipment arcing. Fire extinguisher used to extinguish fire in approximately 10 ft. X 10 ft. area with sporadic spots of grass.	\$50
Oak Ridge National Laboratory-UT/Battelle	Fire/Smoke (Other)	Building 1062	The ORNL Fire Department received a 911 telephone call notification of a food toaster fire in Building 1062. Upon the Fire Department discovered the fire had been extinguished by a building occupant using a portable fire extinguisher. Damage was contained to the food toaster. There was no extension to the structure or adjacent building contents.	\$15
Nevada-Test Site	Fire/Smoke (Other)	Remote Sensing Laboratory	Nevada Site Office Weekly Report dated May 11, 2009 - reported the activation of the overhead fire suppression system (foam) at the RSL-Andrews Maintenance Hangar during an electrical test of the hangar firefighting system. The individual conducting the test quickly deactivated the system before all four storage tanks within the system activated. One aircraft was inside at the time of activation and sustained no damage. Minimal amounts of foam were dispersed and there was no impact to any flight operations. Remedial Action: The responsible maintenance organization, Andrews AFB Civil Engineering Squadron, conducted an after-actions investigation and has adopted a team concept towards future testing of hangar fire protection suppression systems, which will include personnel whom are more familiar with the operation of the systems.	\$0

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Site	Loss Type	Location	Description	Dollar Loss
Argonne National Laboratory	Fire/Smoke (Other)	APS Cooling Tower No. 803	A fire occurred on the APS Cooling Tower 803 deck as a result of improperly controlled welding activities. Fire damage was limited to a small section of the wood deck and some structural members underneath. The work was being done by outside contractors. Since the fire was caused by the contractor, the fire damage repair was covered by the contractor (thus dollar loss to Argonne is \$0).	\$0
Office of River Protection	Fire/Smoke (Other)	Waste Treatment Plant Pretreatment Construction Site	The small fire occurred in Cell 13-A of the Pre-Treatment Building construction site. Workers were using a grinder on metal when the sparks scorched a cardboard box. An extinguisher was partially discharged to put the fire out. Hanford Fire Department (HFD) was notified and responded to investigate. Fire was out when HFD arrived.	\$0
Savannah River Site	Fire/Smoke (Other)	740-3A	At 07:29, SRSFD personnel were dispatched to a call-in notification of a smokador fire at 740-3A. Upon arrival, SRSFD personnel found a small piece of paper smoking inside the can. One cup of water was used to extinguish the fire. There were no injuries and no costs incurred.	\$0
Savannah River Site	Fire/Smoke (Other)	Barricade 3	At 04:41, SRSFD personnel were dispatched to a fuse that had burned above a transformer at Barricade #3. The fuse self-extinguished and the Barricade went on backup power. FD personnel responded but no action was taken. There were no injuries and no costs incurred.	\$0
Savannah River Site	Fire/Smoke (Other)	222-H, A-Line, Tank 506	At 21:41, SRSFD personnel responded to a pump motor fire on top of Tank 506, 222-H, A-Line due to an activated pull station. The operator had noticed sparks and flames coming from the pump motor. Upon arrival, it was discovered that the fire had self extinguished due to facility personnel de-energizing the equipment. The tank was in a contamination area. One RCO Inspector and one fire fighter dressed-out and entered the area. RCO smeared the pump with negative results and the fire fighter used the thermal imaging camera to check motor housing and found the motor temperature to be dropping. There were no injuries and no dollar loss.	\$0
Savannah River Site	Fire/Smoke (Other)	J-area	At 17:58, the SRSFD received an after-the-fact notification of a pile of saw dust that had been smoldering in J-Area. Station #1 personnel responded and found that a Parsons Group employee had extinguished the smoldering material with water (three 5-gallon buckets full). The fire was caused by discarded smoking material near the 6' X 1' area. There were no injuries and no costs incurred.	\$0
Savannah River Site	Fire/Smoke (Other)	484-D mobile generator	12/11/09 At 10:30, SRSFD personnel were dispatched to a call-in notification of a fire in a mobile generator. Upon arrival, it was discovered that the facility had shut down the diesel generator and used a dry chemical extinguisher to put out the fire, which appears to have been caused by a carbon deposit build-up within the muffler. There were no injuries and no costs incurred.	\$0

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Site	Loss Type	Location	Description	Dollar Loss
Savannah River Site	Fire/Smoke (Other)	Mixed Oxide Fuel Fabrication Facility (MOX)	04/24/09 At 18:17, SRSFD personnel were dispatched to a call-in fire at MOX. Upon arrival, responders were met by an escort and found a waste bin smoking on the northeast side of the area. A jump line was pulled from the engine and the fire was extinguished using approximately 50-gallons of water. The bin contained mostly wood products and some metal. The fire was most likely caused by a cigarette. There were no injuries and no costs incurred.	\$0
Y-12	Fire/Smoke (Other)	9401-7	A portable electric heater was being used to elevate temperatures inside a switchgear cabinet to keep condensation from accumulating.	\$0
Idaho National Laboratory	Fire/Smoke (Building)	Research and Education Campus, REC-603	A flash fire occurred when a researcher was removing a small amount of powdered material from a plasma reaction chamber.	\$0
Portsmouth Gaseous Diffusion Plant	Fire/Smoke (Building)	X-633-2D Cooling Tower	The fire occurred on July 16, 2009 at the X-633-2D Cooling Tower. The USEC Fire Investigator estimated the fire damage as being in excess of \$10,000 using the criteria in NFPA 921: Guide for Fire and Explosion Investigation 2008 and replacement value costs. This estimate determined the costs to repair and return the structure to its pre-fire condition. However, based upon the following information it was determined that there was no costs associated with the fire. The X-633 Cooling Tower Complex, where the X-633-2D Cooling Tower is located, had been slated for demolition when DOE assumed responsibility on July 10, 2009. Due to the scheduled demolition, the tower is presumed to have no value. The X-633-2D tower had received wind damage during a storm on July 11, 2009. The work crews were removing damaged panels to render the structure safe from the wind event when the fire was discovered. The X-633-2D structure incurred some damage to decking boards, support structure, and siding due to the fire and the subsequent emergency response. Due to the scheduled demolition, no repairs were made to the structure after the event, and no costs were incurred. The demolition of the damaged tower structure was already scheduled and demolition costs are funded as an American Recovery and Reinvestment Act (ARRA) project being performed by LATA/Parallax Portsmouth, LLC (LPP), therefore no costs were incurred. The costs for the emergency response to the fire event were funded by the Government Furnished Services and Items (GFS&I) contract with USEC; therefore, no costs were incurred. No other costs were associated with the fire event.	\$0
Y-12	Fire/Smoke (Building)	9995	A small amount of sulfuric acid spilled on 2 paper towels which charred and then ignited while in a hood. Extinguished using 100cc of water.	\$0
Idaho National Laboratory	Fire/Smoke (Brush)	HWY 22	At 1450, INL FD responded to a report of fire along HWY 22. Upon arrival, a single tree fire was smoldering approximately 60 yds west of the road. Fire was determined to be lightning caused with final acreage of less than 1/4 acre. No damage to INL property.	\$0
Idaho National Laboratory	Fire/Smoke (Brush)	Middle Butte	At 2016, INL FD responded to a report of fire on the Middle Butte. Fire was determined to be lightning caused with final acreage of less than 1/4 acre. No damage to INL property.	\$0

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Site	Loss Type	Location	Description	Dollar Loss
Idaho National Laboratory	Fire/Smoke (Brush)	HWY 33	At 0940, INL FD responded to report of fire on HWY 33. Upon arrival, a small roadside fire was observed smoldering in grass and sage. Fire was determined to be human caused with catalytic converter particles as the ignition source. Final acreage was less than 1/4 acre. No damage to INL property.	\$0
Los Alamos National Laboratory	Fire/Smoke (Brush)	TA-69 Brush Fire (Lightning)	Lightning caused brush fire between TA-22 and TA-69. 10 ft x 20 ft area of grass and brush burned surrounding a phone junction box and power line pole. Fire department responded, employing "micro-blaze" in vicinity of telephone j-box and hand line for area near power line pole.	\$0
Sandia National Laboratory	Fire/Smoke (Brush)	West of Lovelace Research Area on KAFB Property	SNL/NM- Incident #09-03252 Call Number: 13053 Synopsis: Call Number 13411 Narrative: Response 1 and Squad 3 called out to Lovelace Research Area in response to a wildland fire directly west of the facility about 1-2miles away. Kirtland Fire was actively dowsing hot-spots in vicinity and estimated about 425 acres in question were burned to include portions of Isleta property that were being controlled by Isleta Fire Department.	\$0
Savannah River Site	Fire/Smoke (Brush)	G-road	02/28/09 At 19:01, SRSFD personnel were dispatched to a call-in notification by WSI of a fire off of G-Road. Upon arrival, it was determined that one 20' pine tree was on fire in the area of a control burn six days earlier but was close to the road and power lines. F-1 was used to extinguish the fire and it was marked for the USFS to push down at a later date. There were no injuries and no costs incurred.	\$0
Savannah River Site	Fire/Smoke (Brush)	E and F roads	03/08/09 At 05:33, SRSFD personnel were dispatched to a brush fire at the intersection of E & F Roads. Upon arrival, it was discovered that the fire was actually part of a controlled burn with smoldering stumps in a previously burned area. USFS was notified. There were no injuries and no costs incurred.	\$0
Savannah River Site	Fire/Smoke (Brush)	Near L-area	07/02/09 At 17:59, dispatch notified SRSFD personnel of a call-in grass fire near the L-Area entrance. The fire apparently started with a fault from a transformer outside the area and caught the grass on fire. Responders used a fire hose and approximately 20 gallons of water to extinguish the fire. There were no injuries and no costs incurred.	\$0
Savannah River Site	Fire/Smoke (Brush)	B-road at mile 7	09/15/09 At 17:38, SRSFD personnel were dispatched to a call-in notification of a grass fire on B Road at mile marker #7. Upon arrival, a small grass fire in the median about 100' X 20' was extinguished using 100 gallons of water. The cause was undetermined. There were no injuries and no costs incurred.	\$0

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Site	Loss Type	Location	Description	Dollar Loss
Stanford Linear Accelerator	Fire/Smoke (Brush)	Meadow near Alpine Gate	A subcontractor to the SLAC landscaping contractor was providing flail mowing service to SLAC to cut down dry grass along SLAC's property lines and roads. Conditions were 68 deg. F, 54% humidity and winds of 11-12 mph (up from 3-5 mph at 10am). The mower normally stops activity when winds rise above 10 mph, and due to the increased wind speed, the subcontractor was preparing to stop activity at noon. At about 11:50 am, the mower was cutting a field across from Alpine Gate and passed over an area with a discarded piece of concrete riprap (concrete originally formed in a burlap bag for diking work). The teeth of the rotating steel flail cylinder gouged across the concrete and sparked. After driving several hundred feet beyond this area, the mower looked back and realized that a fire had started in the cut grass. He attempted to call out on his cell phone but had no phone service. He went to the Alpine Gate Guard Station, which was closed, and then proceeded to the nearby site fence line and alerted the staff of the adjoining equestrian training facility, who contacted 911 and SLAC Security at 11:56am. The mower came back to the point of the fire and attempted to extinguish it with a 3-gallon water sprayer and a shovel. However, the fire had spread to a diameter of over 8 feet, too large for him to extinguish with these tools. Until the fire department arrived, he continued to mow around the fire to create a fire break to isolate it further from uncut grass. At 11:59 am, SLAC Security arrived and opened the Alpine Gate. A dust-control water tender sent by the equestrian center immediately came in the gate and followed behind the mower, wetting down the cut grass around the fire. When the fire department arrived a few minutes later, the fire was about 1/3-acre in size but well contained. They extinguished it in approximately 10 to 15 minutes and spent an additional ½-hour conducting cleanup. A SLAC Security fire watch was posted for the area for the rest of the day. The fire was confined to cut grass. There was no damage to government property. A radiation monitor located in the field was briefly exposed to flame but was determined to be completely undamaged.	\$0
Los Alamos National Laboratory	Leaks, Spills, Releases	TA-3-43 Steam Leak Resulted in Smoke Detector Activation	Fire alarm system activated within Bldg TA-3-43 by building steam leak. Fire Dept responded. TA-3-43 was vacant and in transition to D&D - no property loss or mission impact resulted. Steam line was secured.	\$0
Los Alamos National Laboratory	Leaks, Spills, Releases	TA-35-2 Rm A132 Nitric Acid/Acetone Exothermic Reaction	Improper disposal of laboratory acetone waste into an acid waste container containing nitric acid within a cabinet below a chemical fume hood produced an exothermic reaction which lead to an operational emergency. Chemical reaction over-pressurized the glass acid waste container and shattered adjacent nitric acid container, resulting in release of brown fumes into the lab. Emergency response org, LANL HazMat and FD responded. Team investigation resulted.	\$0
Savannah River Site	Fire/Smoke (Other)	717-A	At 13:00, the SRSFD received an after-the-fact notification of an incident at 717-A. Maintenance personnel were attempting to power-up a milling lathe when an electrical controller within the lathe overheated and tripped the breaker. No extinguisher was used, and no action taken by the SRSFD except to investigate and create report. There were no injuries and no costs incurred.	\$0

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Site	Loss Type	Location	Description	Dollar Loss
Princeton Plasma Physics Lab			No Fire Losses	\$0
Waste Isolation Pilot Plant			No information reported	\$0