

## DOE ANNUAL FIRE PROTECTION PROGRAM SUMMARY REPORTING GUIDE

Revised: Nov 2024

Organizations responsible for maintaining property under stewardship of DOE and the NNSA Administrator will seek concurrence with their appropriate Head of Field Element and enter specifically formatted Fire Protection Program calendar year summary reports to the Fire Protection Database by April 30<sup>th</sup> of the following year. The DOE Fire Protection Annual Report Program Manager, Office of ES&H Reporting and Analysis (EHSS-23) will provide reporting organizations and DOE Field Elements with a computer-based application for submitting formatted summaries and will maintain a database reporting system that compiles reports submitted in accordance with the reporting elements.

Fire protection data is reported on a calendar year basis. Calendar year data input must be completed by April 30<sup>th</sup> of the following year. For example, all fire protection data for calendar year 2024 must be reported into the database by April 30<sup>th</sup>, 2025.

### INCIDENT SUMMARY (Select the appropriate type of event.)

#### 1. Fire Loss Events

Unplanned destructive and uncontrolled burning, including detonation and deflagration, as manifested by any or all of the following: flame, heat, or smoke. Fire does not include the following events unless they cause a fire or occur because of the event: lightning or electrical discharge; rupture of a pressure vessel not caused by internal combustion; detonation of munitions; overheating (without damage to initiating material); or failure of electric motors and other electrical equipment through overheating or shorting where any visible sparks or flames self-extinguish after power is removed from the device (DOE-STD-1066-2023). Fire loss events may include monetary and non-monetary events.

- a. Each fire loss incident should include separate entries or fields with the following:
  - Was an automatic suppression system involved? Yes or No
  - Was the system water based? Yes or No
  - Was an injury or death involved? Yes or No
  - Incident Date.
  - Incident Location.
- b. Event Class associated with the incident should be classified as:
  - Fire/Smoke [Brush],
  - Fire/Smoke [Building],
  - Fire/Smoke [Other] (If "Other" is selected, an explanation of the incident should be included in the description field),
  - Fire/Smoke [Vehicle], or
  - Leaks, Spills, Releases (Hazardous Material loss incidents/releases *where fire is involved* should be classified as Fire Loss – Leaks, Spills, Releases.)

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- c. Direct Cause associated with the incident should be classified as:

- Design/Material Related,
- Electrical,
- Employee Related,
- Other,
- Procedure Related,
- Unspecified, or
- Weather Related.

NOTE: If “Other” or “Unspecified” is selected, an explanation of the cause or possible causes should be included in the description field.

- d. Method of Activation. If the incident involves a fixed suppression system, the following data should be included:

- Automatic (Electrical)
- Automatic (Mechanical)
- Manual (Electrical)
- Manual (Mechanical)
- Unspecified. (If “Unspecified” is selected, an explanation of the likely or possible method of actuation should be included in the description field.)

- e. Number of Sprinklers Actuated (for water-based systems).

- f. Dollar amount of loss. (Criteria for estimating loss amounts are explained on pages 8-10 of this Guide.)

- g. Description. The incident description should include a summary of the incident and remedial actions taken to prevent recurrence. Quantity of foam or other agent discharged should be noted in the description for non-water-based suppression systems.

NOTE: If there are related deaths or injuries resulting from an incident, a cross-reference to other DOE reports such as entries in the Occurrence Reporting and Processing System (ORPS Number), the Computerized Accident/Incident Reporting System (CAIRS Event ID) or local incident logs should be added to the incident description.

## 2. Non-Water-Based Suppressions System Actuations (non-fire-loss events)

Non-water-based and non-water-based suppression system actuations from fire or other loss events are categorized as such to account for total property loss. Other losses include damage and/or losses sustained as a consequence of any of the following events:

- Explosion (non-fire),
- Natural causes (such as earthquakes and hurricanes),
- Electrical malfunction (not classified as fire),
- Transportation (cargo) loss,
- Mechanical malfunction,
- Radiation release or other nuclear accident, or
- Miscellaneous accidents (including thermal, chemical, or corrosion accidents).

Incident descriptions should include details of the actuation event of any automatic suppression systems.

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- a. Each loss incident should include separate entries or fields with the following:
  - Was an automatic suppression system involved? Yes or No
  - Was the system water-based? Yes or No
  - Was an injury or death involved? Yes or No
  - Incident Date.
  - Incident Location.
- b. Event Class associated with the incident should be classified as:
  - Fire/Smoke [Brush],
  - Fire/Smoke [Building],
  - Fire/Smoke [Other] (If "Other" is selected, an explanation of the incident should be included in the description field),
  - Fire/Smoke [Vehicle], or
  - Leaks, Spills, Releases (Hazardous Material (HAZMAT) loss incidents/releases *where fire is involved* should be classified as Fire Loss – Leaks, Spills, Releases.
- c. Direct Cause associated with the incident should be classified as:
  - Design/Material Related,
  - Electrical,
  - Employee Related,
  - Other,
  - Procedure Related,
  - Unspecified, or
  - Weather Related.

NOTE: If “Other” or “Unspecified” is selected, an explanation of the cause or possible causes should be included in the description field.
- d. Method of Activation. If the incident involves a fixed suppression system, the following data should be included:
  - Automatic (Electrical)
  - Automatic (Mechanical)
  - Manual (Electrical)
  - Manual (Mechanical)
  - Unspecified. (If “Unspecified” is selected, an explanation of the likely or possible method of actuation should be included in the description field.
- e. Number of Sprinklers Actuated (for water-based systems).
- f. Dollar amount of loss. (Criteria for estimating loss amounts are explained on pages 8-10 of this Guide.)
- g. Incident description. (The incident description should include a summary of the incident and remedial actions taken to prevent recurrence.) Quantity of foam or other agent discharged should be noted in the description for non-water-based suppression systems.

NOTE: If there are related deaths or injuries resulting from an incident, a cross-reference to other DOE reports such as entries in the Occurrence Reporting and Processing System (ORPS Number), the Computerized Accident/Incident Reporting System (CAIRS Event ID)

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or local incident logs should be added to the incident description.

### 3. Other Emergencies (non-fire)

a. Each incident should include separate entries or fields with the following:

- Was an automatic suppression system involved? Yes or No
- Was the system water-based? Yes or No
- Was an injury or death involved? Yes or No
- Incident Date.
- Incident Location.

b. Event Class associated with the incident should be classified as:

- Hazardous Materials (HAZMAT),
- Medical,
- Other Emergency (excluding false alarms which are recorded in the Fire Department Response totals section), or
- Vehicle.

c. Direct Cause associated with the incident should be classified as:

- Design/Material Related,
- Electrical,
- Employee Related,
- Other,
- Procedure Related,
- Unspecified, or
- Weather Related.

NOTE: If “Other” or “Unspecified” is selected, an explanation of the cause or possible causes should be included in the description field.

d. Method of Activation. If the incident involves a fixed suppression system, the following data should be included:

- Automatic (Electrical)
- Automatic (Mechanical)
- Manual (Electrical)
- Manual (Mechanical)
- Unspecified. (If “Unspecified” is selected, an explanation of the likely or possible method of actuation should be included in the description field.

e. Number of Sprinklers Actuated (for water-based systems).

f. Dollar amount of loss. (Criteria for estimating loss amounts are explained on pages 8-10 of this Guide.)

g. Incident description. (The incident description should include a summary of the incident and remedial actions taken to prevent recurrence.) Quantity of agent discharged should be noted in the description for non-water-based suppression systems.

NOTE: If there are related deaths or injuries resulting from an incident, a cross-reference to other DOE reports such as entries in the Occurrence Reporting and Processing System

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(ORPS Number), the Computerized Accident/Incident Reporting System (CAIRS Event ID) or local incident logs should be added to the incident description.

### 4. Water-Based Suppressions System Actuations (non-fire-loss events)

Water-based and non-water-based suppression system actuations from fire or other loss events are categorized as such to account for total property loss. Other losses include damage and/or losses sustained as a consequence of any of the following events:

- Explosion (non-fire),
- Natural causes (such as earthquakes and hurricanes),
- Electrical malfunction (not classified as fire),
- Transportation (cargo) loss,
- Mechanical malfunction,
- Radiation release or other nuclear accident, or
- Miscellaneous accidents (including thermal, chemical, or corrosion accidents).

Incident descriptions should include details of the actuation event of any automatic suppression systems.

- a. Each fire loss incident should include separate entries or fields with the following:
  - Was an automatic suppression system involved? Yes or No
  - Was the system water-based? Yes or No
  - Was an injury or death involved? Yes or No
  - Incident Date.
  - Incident Location.
- b. Event Class associated with the incident should be classified as:
  - Fire/Smoke [Brush],
  - Fire/Smoke [Building],
  - Fire/Smoke [Other] (If "Other" is selected, an explanation of the incident should be included in the description field),
  - Fire/Smoke [Vehicle], or
  - Leaks, Spills, Releases (Hazardous Material (HAZMAT) loss incidents/releases *where fire is involved* should be classified as Fire Loss – Leaks, Spills, Releases.
- c. Direct Cause associated with the incident should be classified as:
  - Design/Material Related,
  - Electrical,
  - Employee Related,
  - Other,
  - Procedure Related,
  - Unspecified, or
  - Weather Related.

NOTE: If “Other” or “Unspecified” is selected, an explanation of the cause or possible causes should be included in the description field.
- d. Method of Activation. If the incident involves a fixed suppression system, the following data should be included:

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- Automatic (Electrical)
  - Automatic (Mechanical)
  - Manual (Electrical)
  - Manual (Mechanical)
  - Unspecified. (If “Unspecified” is selected, an explanation of the likely or possible method of actuation should be included in the description field.)
- e. Number of Sprinklers Actuated (for water-based systems).
- f. Dollar amount of loss. (Criteria for estimating loss amounts are explained on pages 8-10 of this Guide.)
- g. Incident description. (The incident description should include a summary of the incident and remedial actions taken to prevent recurrence.) Quantity of foam or other agent discharged should be noted in the description for non-water-based suppression systems.

NOTE: If there are related deaths or injuries resulting from an incident, a cross-reference to other DOE reports such as entries in the Occurrence Reporting and Processing System (ORPS Number), the Computerized Accident/Incident Reporting System (CAIRS Event ID) or local incident logs should be added to the incident description.

### **PROGRAM COSTS (Recurring Costs)**

- a. Fire Department Costs should be entered for each of the following:
- Staffing,
  - Equipment (major equipment purchases above \$50,000 should be listed in the Notes section), including type of equipment and purchase price),
  - Systems,
  - Medical,
  - Training,
  - Outside Services (inspection, testing, and alarm maintenance by others), and
  - Fire Protection Engineering.

Notes may be added where details, such as large purchases above \$50,000 can be described.

### **HALON METRICS (Halon Reduction Activities)**

- a. Fixed Systems should include separate entries or fields with the following:
- Number of systems (total on site active, stored and non-active),
  - Site Quantity Active,
  - Site Quantity Inventory (in storage),
  - Total Banked Quantity,
  - Number added: Number of systems placed in service this period (include active system transfers between sites as well as systems that may have been temporarily placed in inventory),
  - Quantity Added: Quantity of halon added,
  - Quantity Imported,
  - Quantity Exported,
  - Bank Withdrawal,

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- Quantity Sold, and
  - Quantity Bought
- b. Hand-Held Halon Extinguishers should include separate entries or fields with the following:
- Number Sold,
  - Current Totals, including:
    - Active,
    - Inventory, and
    - Banked.

The Notes field may be used for details about any of the Halon-related entries.

### **FIRE DEPARTMENT RESPONSE TOTALS (and other Emergency Responses)**

- a. The number of fire/emergency responses should be entered for each of the following:
- Fire,
    - The *Fire* category relates to fire events as verified by the responding incident commander.
  - HAZMAT,
    - The HAZMAT category relates to non-fire hazardous material incidents unless it involves fire.
  - Other Emergency
    - The Other Emergency category is intended for all other emergencies in which a firefighting apparatus was dispatched, including offsite mutual aid responses, vehicle accidents (non-fire), rescues, or support for medical responses. (Mutual aid responses should be described in the notes section as separate entries).
  - Non-Emergency (including false alarms),
    - The Non-Emergency category relates to situations where the initial response was considered an emergency but was later verified as a non-emergency by the incident commander. This includes inadvertent system actuations, malicious alarms, or offsite mutual aid responses that were cancelled en-route.
  - Medical.
    - The Medical category includes any response in which an ambulance, rescue, support vehicle or engine was dispatched for the sole purpose of a medical emergency.
- b. The sum of all responses including false alarms should be entered.

### CRITERIA FOR COST ESTIMATING

- a. Estimating fire damage costs for DOE facilities and programs is essential to categorize necessary investigations and quantify financial loss to the Government for either direct reimbursement or analytical purposes. When estimating loss, it is expected that reporting elements make every attempt to calculate a credible replacement value and to grade the estimate on the financial impact it will have upon the Government. For example, a room-and contents fire involving standard office products may not require the use of a detailed cost estimation and may be calculated according to the institutional knowledge of the reporting authority. However, a total facility loss or losses exceeding \$10,000 in replacement value may need to employ estimation techniques described in the next section.
- b. There are qualified people in DOE and/or contractor organizations who are trained and experienced in cost estimating. These individuals should follow the procedures in DOE G 430.1-1 or the International Code Council's (ICC) Building Valuation Data (BVD) formula to help fire departments determine dollar loss on fires. When estimating costs from fire loss events, these individuals should be involved to identify replacement values using available site data sources such as the Management Analysis Reporting System, the Property Information Database System, and the Facility Information Management System and may include applying an appropriate cost index ratio (e.g., the producer price index) or data published in the periodical, Engineering News Record.

### CRITERIA FOR LOSS ESTIMATION

- a. Loss estimations should include the following.
  - Damage or loss of facilities, inventories, and associated equipment as a result of a fire or a fire suppression system actuation,
  - All estimated or actual costs to restore DOE property to a reasonable approximation of pre-accident conditions. If an accident involves property that has been lost, completely destroyed, or contaminated to a degree precluding economically justifiable recovery, estimates should be based on cost for actual replacement and installation of comparable equipment, devices, or materials (including nuclear materials) as well as clean-up and disposal cost for the damaged facility. Such costs should include credit for any salvage value associated with the loss,
  - In the case of unused, obsolete, or excess building space, equipment, or materials that are not going to be replaced, the cost estimate of the market value at time of accident should be used,
  - Estimated costs for restoring to a reasonable degree to pre-accident condition, without improvement, all partially lost or damaged DOE property. Include replacement cost for all DOE-owned supplies and costs for decontamination operations where applicable,
  - Estimated costs for reprocessing and reclaiming partially destroyed and damaged materials. Where applicable, costs for damage resulting from firefighting (e.g., water and smoke damage) should be included,



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- All post-incident cleanup expenses both inside and outside the facility (e.g., cleanup of hazardous materials or radioactive contamination resulting from fires, or fire suppression system actuation),
  - All costs for recharging fire suppression systems (gaseous, chemical and foam agents) and decontamination or replacement of fire department equipment.
  - Costs for damage caused by DOE operations to privately owned property.
  - Costs for restoration of land and land improvements (sidewalks, roads, etc.) that were damaged as a result of an accident,
  - Costs for outside specialists or organizations hired to mitigate losses and costs for non-standard labor hours (i.e., above the amount normally worked by the employee) for onsite personnel to restore the property to pre-accident condition,
  - Estimated damage losses to Government or private wetlands, grasslands, and forest as a result of a wild land fire originating on DOE lands. Restoration costs should also be included along with actual costs to suppress the event,
  - Labor hours expended by investigative and/or administrative personnel as a result of the incident, and
  - Labor costs for personnel evacuated during a fire including any stand-down costs associated with investigations, employee relocations, or restoration activities.
- b. Loss estimations should exclude the following:
- Expenses resulting solely from loss of the use or occupancy of facilities affected by the fire, including lost production and research time, unless it becomes necessary to obtain special facilities (e.g., temporary structures) to maintain the facilities' use or occupancy,
  - All post-accident expenses paid by non-DOE sources (e.g., expenses covered by private insurance),
  - Expenses to bring property to modern standards,
  - Normal wear,
  - Damage to privately owned property caused by other than DOE operations., and
  - Labor hours for onsite firefighters during their normal work shifts.