

Records Emergency: Nuclear Radiological or Biological Contamination of Archival Records Resulting from a Dirty Bomb or Explosion

Preservation Guidance

The following basic guidance provides information on the protection and recovery of records potentially contaminated by nuclear radiological or biological contamination from a dirty bomb or explosion. There is relatively little published literature on the effects of nuclear radiation on archival materials, though the hazards to human life and health are well documented. Explosions and the subsequent collapse of buildings also generate numerous contaminants and pollutants that are abrasive and known to cause deterioration of paper- and film-based collections, in addition to posing health hazards. This guidance only addresses steps to take in situations in which air-borne contaminants in the atmosphere can potentially impact archival repositories; it does not cover mold or objects found in holdings that may be radioactive, such as soil or rock samples that may be found in certain types of records.

A dirty bomb can be created from radioactive nuclear waste material and conventional explosives, though contamination can also result from accidents at nuclear power plants. Biological contaminants can be dispersed deliberately or accidentally. It may be difficult to know immediately whether an explosion contains radioactive waste or biological contaminants, and depending on the proximity of the explosion to the repository there could be structural damage to the facility in addition to possible contamination. Even if a repository is not directly affected by an explosion, wind patterns could result in radioactive debris or biological contaminants posing a hazard some distance from the detonation site, especially in buildings with air circulating through open windows, doors, or air intakes. Thus, it is important to stay in touch with local and federal officials regarding the status of an event and the potential hazards it poses.

As with all emergencies potentially affecting records, health and safety of the staff and general public are paramount. Steps to protect or remediate records should not put people in danger. **Follow guidance from the Department of Homeland Security as well as local, regional, and federal emergency responders regarding shelter-in-place and other provisions to protect staff from radiation poisoning, biological hazards, or similar threats.**

When there is sufficient warning of potential or actual nuclear or biological contamination, as time permits repositories should:

1. Shut down the HVAC system.
2. Seal doors and windows.

3. Keep interior doors closed so that rooms are shut off from one another and compartmentalized. This includes doors into stack areas, vaults, labs, and processing rooms where records may reside.
4. Stop delivery of records to research rooms. Direct staff and researchers to return records to boxes and keep boxes closed. If there are records or artifacts that are not protected by boxes, containers, or cabinets, drape them in plastic to provide protection from airborne contaminated particulates.
5. Stay in contact with local, regional, and federal officials, including the Department of Homeland Security, regarding the status of the event, health and safety precautions, shelter-in-place recommendations, and weather and wind conditions that may help to predict the path of contamination.

When repositories and records have been exposed to nuclear radiation or biological contaminants:

1. The nature of the event (bomb, explosion) and the location of the repository in relation to it will determine the impact on the structure and the records.
2. Local, state, or federal emergency responders will determine whether it is safe for personnel to enter the facility and under what conditions (wearing protective gear, etc.).
3. When access is authorized, follow steps 1-5 above as possible.
4. With the assistance of local, state, or federal emergency responders, and/or the help of contractors able to work with radiological and other contaminants, evaluate the degree to which contaminants may have affected records. The presence of particulates (that may be radioactive) will provide one clue; monitors—such as Geiger counters—will also be required. Testing may be required to confirm identification of any particulate matter.
5. Based on the assessment in 4 above, establish action priorities among affected records. The following categories will normally be low priorities for intervention: low use records, materials that have been copied or reformatted, published materials, temporary records, and those that do not contain unique information.
6. Records that have been contaminated by radioactive or biological particulates can possibly be surface cleaned to permit future handling or reformatting. Protocols for such work must be carried out in accordance with OSHA and other relevant regulations to protect health and safety of personnel. It may be necessary to have the work carried out by hazardous materials specialists with expertise in remediating records materials. Cleaning and other decontamination procedures proposed for use on records should be evaluated and approved by conservation and archival staff before they are applied. Evaluation tools and procedures should be in place to confirm the efficacy of the cleaning before treated materials are handled by the staff or the public.
7. If the status of the materials is such that remediation is not warranted or feasible, disposal of radioactively or other contaminated records must be carried out according to government regulations by qualified contractors at approved sites.

Records guidance for federal agencies:

1. Before federal agencies arrange to dispose of federal records exposed to radiological or other contaminants, notify the Modern Records Programs (NWM) at NARA, per 36 CFR 1229. This notification must include a description of the records, their location and quantity, and the nature of the contamination. Please also indicate whether the records are scheduled, and if they are scheduled, the citation to the appropriate NARA records disposition authority. Notice may be submitted via email to RM.Communications@nara.gov, via phone at 301-837-3120, or fax at 301-837-3697.
2. Follow the procedures outlined in 36 CFR 1230 if you become aware of federal records contaminated by nuclear radiation or other contaminants that were disposed of prior to the end of a NARA-approved retention period or subject to a FOIA request or litigation hold, and outside of 36 CFR 1229 procedures. These regulations require agencies to submit a report of this unauthorized destruction of records to NARA with the following information:
 - a) a complete description of the records with volume and dates, if known;
 - b) the name of the office that maintained the records;
 - c) information on the exact circumstances surrounding the destruction of the records;
 - d) statement of the safeguards established to prevent further loss of documentation; and
 - e) when appropriate, details of the actions taken to salvage, retrieve, or reconstruct the records.

This report must be submitted or approved by the individual authorized to sign records schedules as described in 36 CFR 1220.34(b). Please send this report to the Modern Records Programs (NWM) at NARA via email to RM.Communications@nara.gov or fax at 301-837-3697.

Resources:

Department of Homeland Security [DHS] (www.dhs.gov).

In the event of a terrorist attack, natural disaster or other large-scale emergency, the Department of Homeland Security provides a coordinated, comprehensive federal response and recovery effort. The Department assumes primary responsibility for ensuring that emergency response professionals are prepared for any situation.

The National Institute for Occupational Safety and Health [NIOSH] (www.cdc.gov/niosh/).

NIOSH conducts scientific research, develops guidance and authoritative recommendations, disseminates information, and responds to requests for workplace health hazard evaluations.

Occupational Health and Safety Administration [OSHA] (www.osha.gov)

OSHA works to ensure safe and healthful work conditions by establishing and enforcing standards, including those that cover protective measures for personnel working in hazardous situations.

United States Nuclear Regulatory Commission [NRC] (www.nrc.gov).

NRC emergency preparedness programs enable emergency personnel to rapidly identify, evaluate, and react to a wide spectrum of emergencies, including those arising from terrorism or natural events such as hurricanes. Under the National Response Framework, the NRC will coordinate with other Federal, State, and local emergency organizations in response to various types of domestic events. The NRC emphasizes the integration of safety, security, and emergency preparedness as the basis for the NRC's primary mission of protecting public health and safety.