
Appendix D

Document Preservation and Retrieval: Current and Potential Future Activities

Contents: Any additional fallout-related work will require an extensive review of fallout monitoring programs. This section describes some of these programs and the need for document identification and preservation.

D.1 The Need for Original Data

In over ten years of dose reconstructions, the Centers for Disease Control and Prevention (CDC) has always tried to locate and use original data whenever possible in order to reduce calculation errors and loss of accuracy. In many cases, this has led to substantial revisions to previous release data. For example, at the Savannah River Site and Fernald, CDC's estimates more than doubled the previously reported amounts of some released radioisotopes, and at Hanford CDC determined that the amount of ^{131}I should be increased by 70%. These results were obtained simply by careful evaluations of known sources and activity at those sites, without discovering any previously unknown activities or releases.

In conducting this feasibility study, CDC discovered extensive repositories of data that could be used in this study. However, some of these data have already been destroyed. Some are being preserved in various repositories, and they may or may not be catalogued. An unknown amount exists in undocumented collections at different government facilities or in private hands. The people who conducted the research and who understand the data will not be available much longer, due to retirement or death. If there is ever going to be a study of the health effects of all nuclear weapons tests using original data, the information collection phase must be done soon.

D.2 Past Research

Measurements and evaluations of fallout dispersal and deposition during the era of nuclear testing were, in the aggregate, probably the largest environmental monitoring program ever undertaken by the United States and other countries. Most of the monitoring programs were classified at the time, and many still are. Future studies will require access to and declassification of documents by the Departments of Energy (DOE) and Defense (DOD). In addition to the specific and extensive monitoring conducted with each test, there were many national or international monitoring programs. For example, the United States Public Health Service (PHS) maintained a nationwide network of gummed film collecting stations and conducted a nationwide milk-sampling program (Devore and Terrill 1982). The United States Atomic Energy Commission's Health and Safety Laboratory in New York City, later renamed the Environmental Measurements Laboratory, also maintained a nationwide sampling program including atmospheric samples, soil samples, and gummed film samples (Bouville and Beck 2000; Friend 1961; Harley 1976; Salter 1965). The Applied Fisheries Laboratory at the University of Washington collected extensive seawater and marine biology samples (Hines 1962).

In addition to the efforts of the PHS and the Atomic Energy Commission, many state agencies, universities, other government agencies, and even some corporations conducted their own monitoring programs. The DOD had its own set of sampling programs that remain classified to this day. Eastman Kodak conducted fallout measurements because fallout was exposing newly manufactured film.

Every nation that conducted atmospheric nuclear weapons tests took similar measurements, and many other nations had significant fallout measurement programs during this period. Japan and India monitored and analyzed Chinese fallout data. New Zealand and Australia collected data on French tests in the South Pacific and British tests in Australia. Finland, Sweden, and Norway collected and analyzed fallout from Russian atmospheric tests on Novaya Zemlya. The United Kingdom conducted an extensive program of atmospheric ^{137}Cs and ^{90}Sr monitoring. There were also some international programs under the auspices of the United Nations.

Since the end of nuclear testing, the United States, several foreign governments, the United Nations, and various non-governmental organizations have conducted studies of the health effects of fallout in various regions of the world. For example, the International Atomic Energy Agency (IAEA) conducted a dose reconstruction on Fangataufa and Mururoa after the French tests there. The United States and the Republic of the Marshall Islands jointly conducted a radiological survey of the Marshall Islands after testing by the United States in the Pacific Ocean. The governments of the countries of the former Soviet Union are conducting epidemiological and radiological studies around Soviet test sites, and making their data available internationally. The Scientific Committee on Problems of the Environment (SCOPE), part of the International Committee for Science, recently completed an assessment of the environmental and human impacts of nuclear test explosions (Kirchmann 2000).

D.3 Current Status of Document Preservation

Ten years ago the DOE declared a moratorium on the destruction of all energy-related documents of epidemiological significance. Since that time, DOE documents shipped to a Federal Records Center or the National Archives have indefinite destruction dates if they are in a group of records covered under the moratorium. Many of these records, particularly the older ones, are not cataloged in any detail. A researcher may be able to determine that there are 60 cubic feet of documents about nuclear weapons testing at the Federal Records Center in Maryland, but it is necessary to actually visit the Center and open boxes to determine what the documents are and whether they are needed. Since these records are in a safe place, this effort may be deferred for the time being.

In 1978, the DOE launched a comprehensive effort to gather as much information about United States nuclear weapons testing as possible. This information is held at the Coordination and Information Center (CIC) in Las Vegas, NV. This information is very well cataloged, and researchers can search for documents by title, DOE number, author, or key words via the Internet (<http://www.osti.gov/waisgate/opennet.new.html>). As long as CIC's funding remains stable, these documents will remain available for researchers.

The DOE has an Internet site listing sites that contain relevant documents (<http://tis.eh.doe.gov/workstation/homerep.html>). However, this Internet site does not provide enough information for a researcher to determine what is available without an actual visit to the facility. If these documents are to be useful for future research, someone should visit each site and catalog documents actually useful for fallout research. The documents are protected, however, so this could be deferred.

Other agencies in addition to the DOE conducted their own research or measurements programs, such as the PHS (Devore and Terrill 1982) or Department of Defense. These documents are not covered by DOE's moratorium and could be destroyed at any time if they have not already been destroyed or lost. The documents at these sites should be copied and cataloged as soon as possible.

Many nations sent reports of their fallout measurements to the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) in Vienna, Austria, beginning in 1958. Many of these research reports are out of print and the copy at UNSCEAR may be the only surviving copy. Since submission of reports to UNSCEAR was voluntary, none of their report series are complete. However, UNSCEAR documents may be useful in two ways. First, the research reports themselves may provide useful scientific data (even if incomplete); and second, it is possible to use UNSCEAR's records to identify countries and laboratories where measurements were made. UNSCEAR has stated they intend to preserve these records indefinitely. CDC has made copies of all the UNSCEAR records relevant to fallout listed in past UNSCEAR Annual Reports, and archived them in Atlanta.

Many scientists with years of experience on fallout studies have unique data in their own offices. Others working for universities, the government, or other organizations took their data with them when they retired. These data are the most fragile

of all. They are not catalogued, covered by a moratorium, or available to future researchers. For example, one retired scientist had several thousand measurements of radioactive iodine in animal thyroids from all over the world. Some of the information was contained in hand-written notebooks and some of it was stored on antiquated IBM tapes. CDC was able to find a contractor capable of reading old data tapes, retrieved the data, and now has it in a modern database format. NCI and its contractors are having the remaining notebooks entered into a database and appended to the existing data. The government should mount an aggressive effort to identify, copy, and preserve information like this as soon as possible if this information is ever to be used in a new study.

The DOD has never declared a moratorium on destruction of records of epidemiological significance, and they are not under any obligation to share whatever relevant data they may have with the Department of Health and Human Services (DHHS). The Navy was in charge of early weapons testing in the Pacific, including radiological measurements; and the Air Force has been conducting atmospheric measurements for many years. Most of this information remains classified. Immediate steps should be taken to identify, catalogue, protect, and declassify this material (in that order). This requires giving DHHS staff with the appropriate security clearances access to the material, but it will not be necessary to declassify any documents until the time comes to use them.

CDC has not visited any foreign repositories for fallout-related information except the UNSCEAR headquarters in Vienna, Austria. CDC's staff knows with a fairly high degree of confidence what laboratories have conducted measurements, but we do not know what data are still available or how long they will be available. DHHS could identify what kind of data are required from foreign laboratories to fill the holes in available data for calculating health effects on residents of the United States from global fallout and begin negotiating with foreign governments for permission to review, copy, and use their data as necessary.

In the United States, CDC has visited 15 sites to evaluate documents for their relevance to this fallout study. There has been no attempt to catalog these documents, and only a few copies were made as examples of what was there.

- ◆ The information at some sites was not useful for future fallout studies. CDC noted that fact and will take no further action.
- ◆ Some of the DOE information at Federal Records Centers was useful. This information was covered by the moratorium, so it will not be destroyed. However, it was not very clearly described, so it will eventually be necessary to visit these Centers, open boxes, and enter abstracts of the useful documents into a database if this information is to be useful to future researchers.
- ◆ Some of the DOD information at Federal Records Centers was useful. Some of this information is not covered by the moratorium and will be destroyed in the next few years if no action is taken. CDC has not done anything with this material, and will not without funding for this purpose.

- ◆ Some of the DOD information was not made available to CDC, so it is impossible to tell whether it is useful or not.
- ◆ There are large quantities of useful information at national laboratories. This information is often scattered all over the laboratory, not catalogued in any way. While this information fits the description of material covered by the moratorium, the administration of the moratorium covers only groups of boxes in archives, not individual records, so there is no guarantee the material will be preserved. Under a different appropriation and for a different project, CDC is busy searching, copying, and cataloguing relevant documents at the Los Alamos National Laboratory. The purpose of this effort is to identify documents which would be useful in a dose reconstruction of that laboratory, but the contractors have been instructed to note any documents they encounter which would be useful in a future fallout study. There are no document retrieval and assessment activities underway at any other national laboratory at this time for the purpose of studying fallout, due to lack of funding or a mandate to do so.

The Environmental Measurements Laboratory (EML) in New York City is an important source of fallout data. Some of this information is very well preserved and readily available, such as the soil sampling data posted on the Internet. In addition to their own research, the EML has collected published reports about fallout measurements from all over the country or the world. Many of these are out of print. Since they are not DOE reports, but copies of old journal reports, they are not covered by the moratorium, and CDC discovered that EML staff was preparing to destroy these reports in order to reduce required office space and save money. Other information, such as gummed film data, was to be stored uncatalogued in boxes in the basement of the building. While this material would not have been lost, it would not be available to future researchers because no one would be aware of the existence of the material. CDC made two more visits to EML, where they separated out fallout-relevant material and made arrangements with EML staff to retain that material. NCI is working with EML to have the printed gummed film records entered into spreadsheets.

In 1978, the PHS combed its own archives and collected about 11,000 documents about fallout. The 1979 report Effects of Nuclear Weapons Testing on Health: Report of the Panel of Experts (Hulley 1979) describes the contents of this archive. In Hulley (1979), the panel concluded that the PHS archive contained enough information to assess the health effects of fallout. CDC has a copy of this report. All of the documents from the original archive are on microfilm at the DOE's Coordination and Information Center (CIC) in Las Vegas.

During the years of nuclear weapons testing, Congress held many hearings on the health effects of fallout and the need for further nuclear weapons testing. The published hearings are out of print now, but CDC has found extensive collections of these hearings in several locations – CIC, university libraries, and the Environmental Measurements Laboratory, to name a few. CDC has a copy of the Hearings before the Special Subcommittee on Radiation of the Joint Committee on Atomic Energy, 85th Congress First Session on the Nature of Radioactive Fallout and its Effects on Man 1957 and will use others as the need arises. These hearings are valuable in two ways. They contain

useful information themselves, and they point to locations where more information may be found. As with other documents cited above, DHHS needs to identify Congressional hearings relevant to the fallout study which are not already stored at CIC, find and copy them, and ensure they are stored in a protected archive.

D.4 Possible Future Actions

There is a fundamental need for DHHS to continue the past efforts of itself and other agencies to ensure the preservation and continuing availability of data necessary for future fallout research. Priorities should be:

- ◆ Enroll other US government agencies, especially the DOD, in the effort to identify, preserve and publish information.
- ◆ Continue the US search for documents not held by a U.S. Government agency; copy them, catalog them, and take steps to ensure their preservation.

Specific actions that could be done in the near future:

- ◆ Find PHS gummed film and milk data.
- ◆ Extend the moratorium to DOD data.
- ◆ Review DOD data, especially data on post-test fission product ratios.
- ◆ Catalog the reports at the EML and establish a reading room or library for them.
- ◆ Visit 44 facilities identified by DOE that contain fallout relevant material, and protect and catalog the material if necessary.
- ◆ Assemble a list of Congressional hearings relevant to fallout and ensure that a complete collection is preserved somewhere.

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