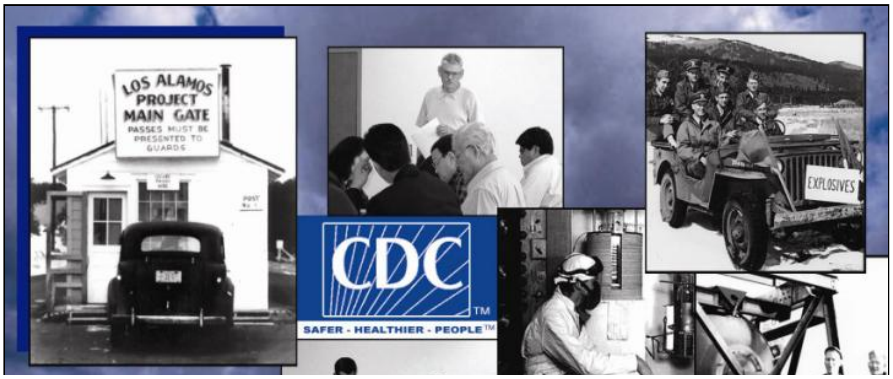
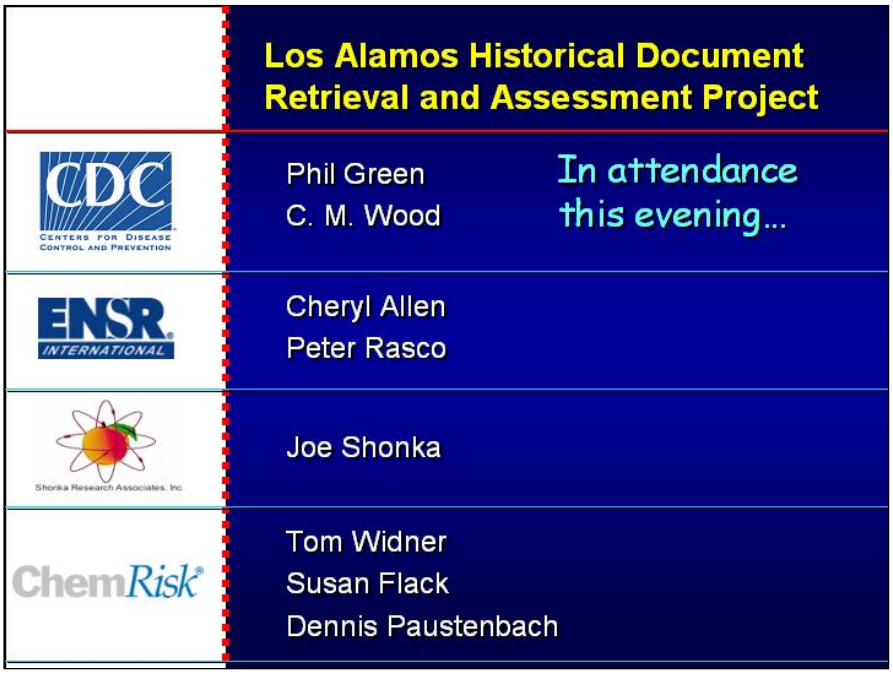
March 30, 2004 Public Meeting Summary with Public Comments / Questions & Answers

(Slides are reproduced from presentation; speaker comments follow.)
(Statements are not direct quotes, they are paraphrased.)
(Public comments and questions made during the meeting are preceded by the word "Public." Response to the questions/comments are preceded by the responder's name when available.)

Release of DRAFT Interim Report

Time	5:00-7:00 p.m.
Location	**Cities of Gold Hotel** Pojoaque, New Mexico
Speaker	Tom Widner, Project Director (Project Summary)
Summary	Tom Widner summarized the project goals and accomplishments, introduced the DRAFT Interim Report explaining how the report is organized and summarizing some of the information contained in the report, and discussed work that remains to be done. The CDC, while addressing public comments, provided an update on the outlook for continuation of the project. The meeting concluded with public comments and questions. **Note:** To review background information on the project, please see the February 23, 1999 meeting summary and slides.
Slides & Notes	Tom Widner (Project Summary) Public Comments / Questions and Answers





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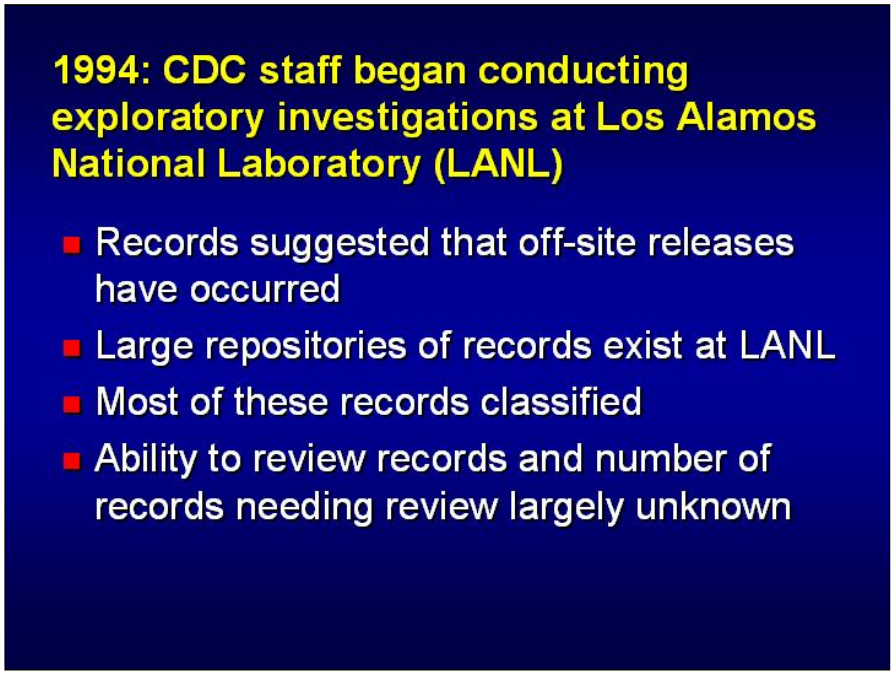
Tom Widner thanked those attending the meeting for coming and introduced project participants attending the meeting including Phil Green, Project Officer from the Radiation Studies Branch of the Centers for Disease Control and Prevention (CDC) and C.M. Wood, also from CDC's Radiation Studies Branch. Another CDC member attending was Judy James.



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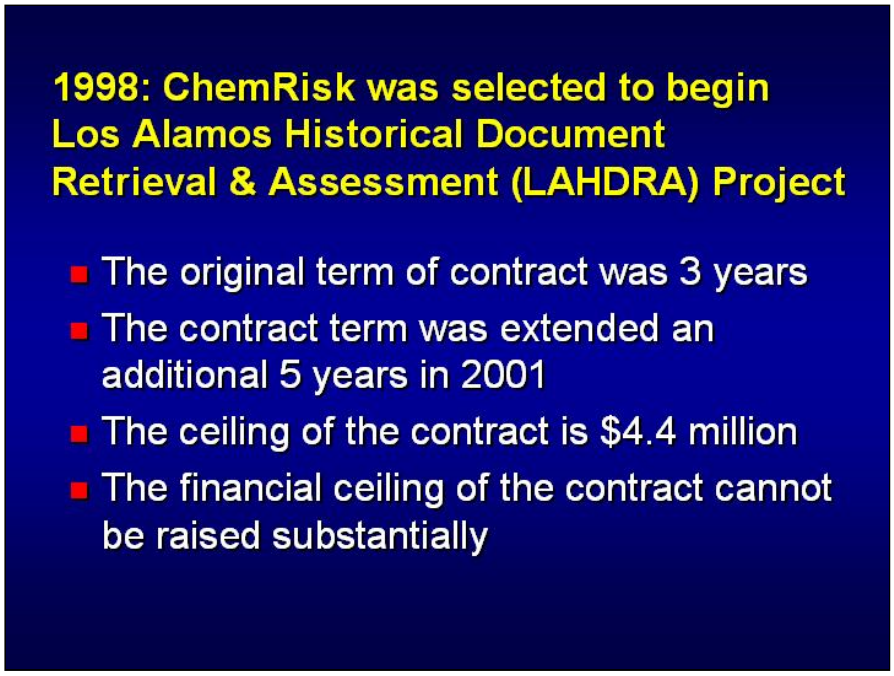
The project was initiated in response to a letter from a New Mexico official and after exploratory visits by CDC that suggested that Los Alamos National Laboratory contains large repositories of records with many records of potential interest.



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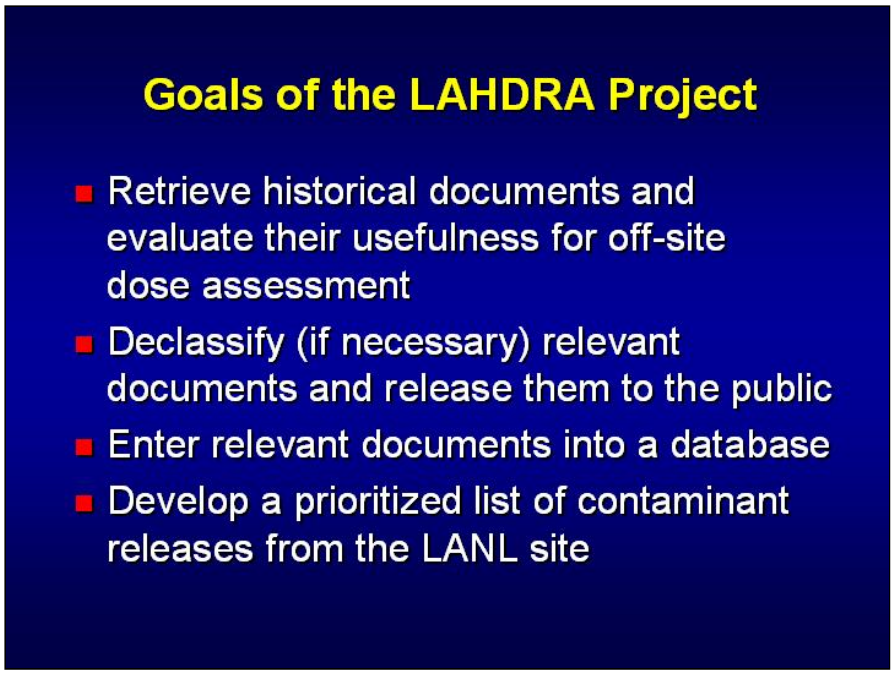
ChemRisk was selected to perform the project work. Originally the contract was for three years and then it was extended for an additional five years. The contract extension did not include additional funding. While there have changes in ownership of the prime contractor, the study team has remained intact throughout the project.



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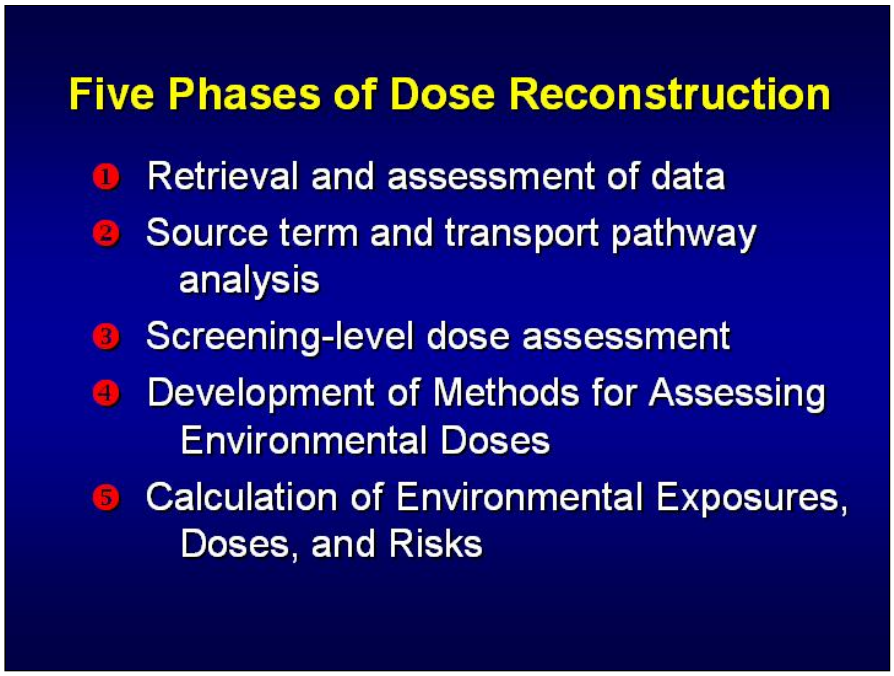
Four goals were set for the project that dealt with off-site releases or health effects. Relevant documents were to be entered into a database to allow searches and make them more accessible.



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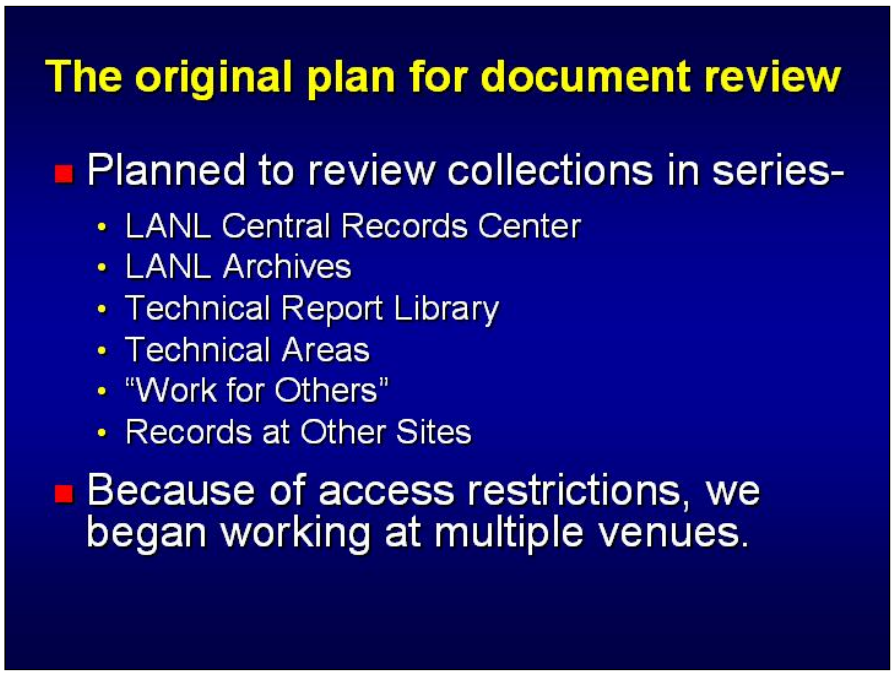
CDC conducts projects like this in five phases; however, CDC does not guarantee all phases will be conducted at a site. This project was established to complete the first phase, retrieval and assessment of data.



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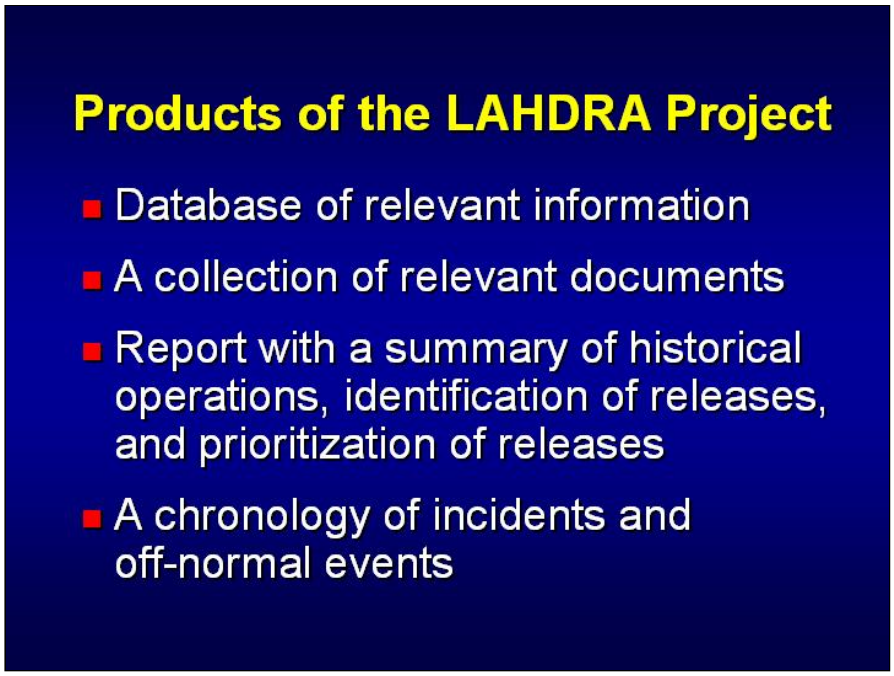
The original plan for the document review was to conduct the information gathering in a sequential fashion, where one repository would be searched before beginning work in another repository. After about 1 to 1? years into the project, LANL started placing restrictions on the number of people allowed in a repository at one time. The limits included classification reviewers and document analysts, so the project started reviewing the documents in multiple repositories simultaneously.



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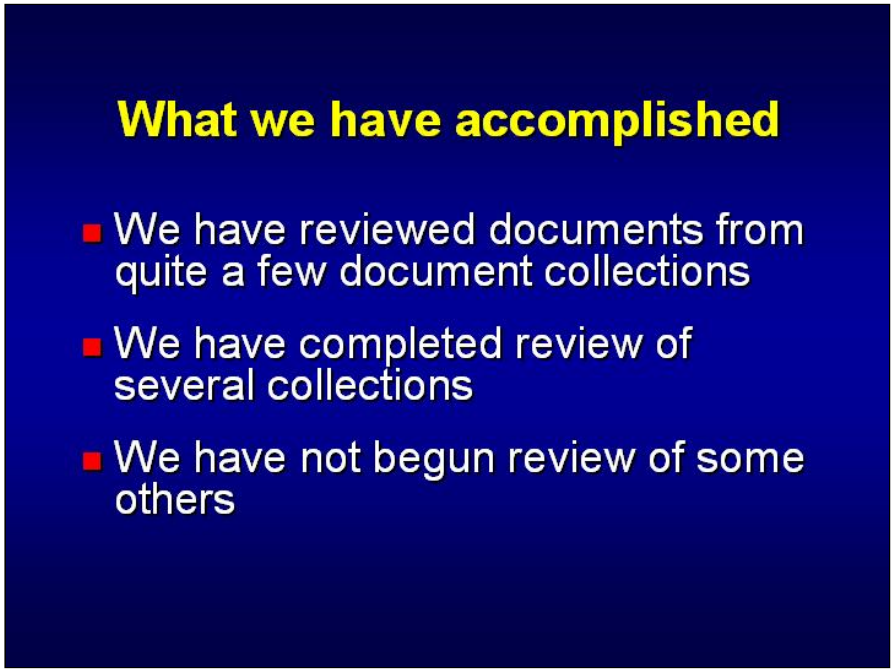
Products produced during the project include a database; a document collection; and a report summarizing operations, releases, and a prioritization of releases. The draft interim report takes the first step towards prioritization of releases. The interim report will include a chronology of incidents and off-normal events.



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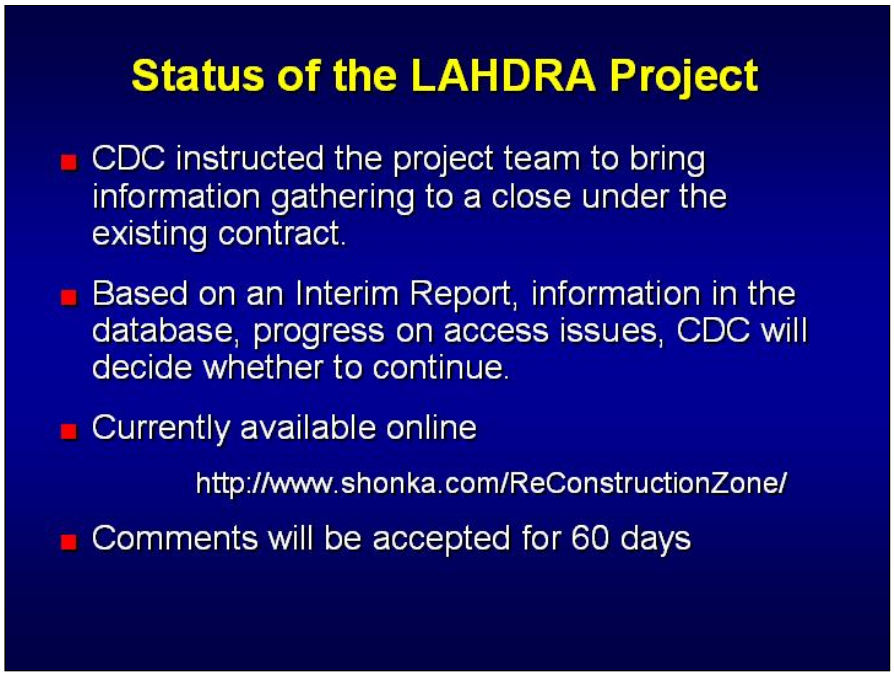
To date we have reviewed documents from a number of repositories, we have completed several, and we have almost completed several others. However, we have not even started reviewing one of the most important collections, the LANL Archives. It is the next priority. In addition, many records are located in the individual technical areas. We have visited some of them, but there are more to review.



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CDC asked us to bring work to a close under the existing contract. Based on the interim report and documents in the database, CDC will determine how to proceed. Please send your comments regarding the draft report so that they can be considered in preparation of the final version.

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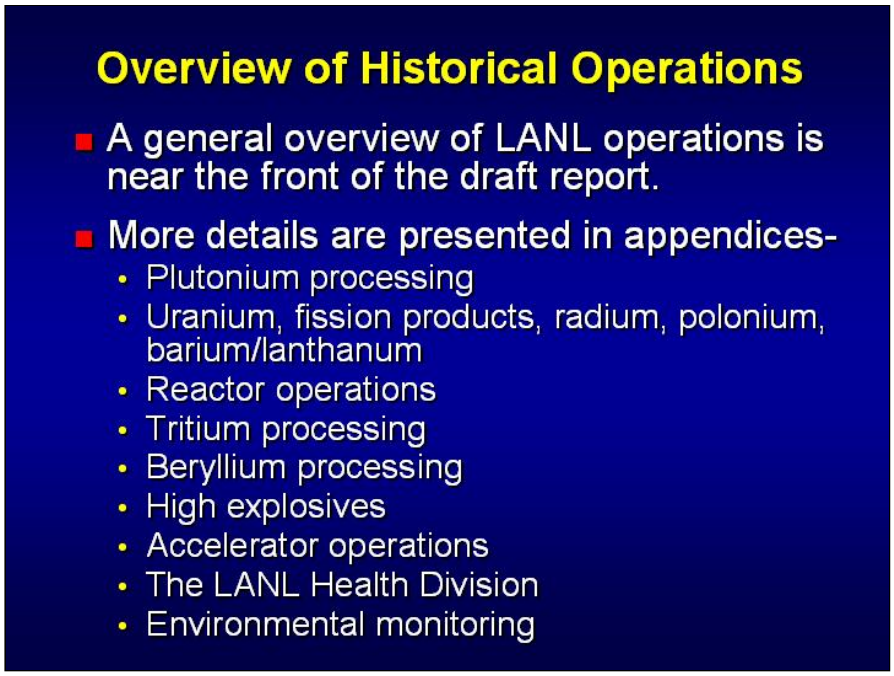
Contents of the draft interim report are summarized here. The Introduction presents the goals of the project, which were touched upon a few minutes ago. The report takes the first steps toward prioritizing releases.



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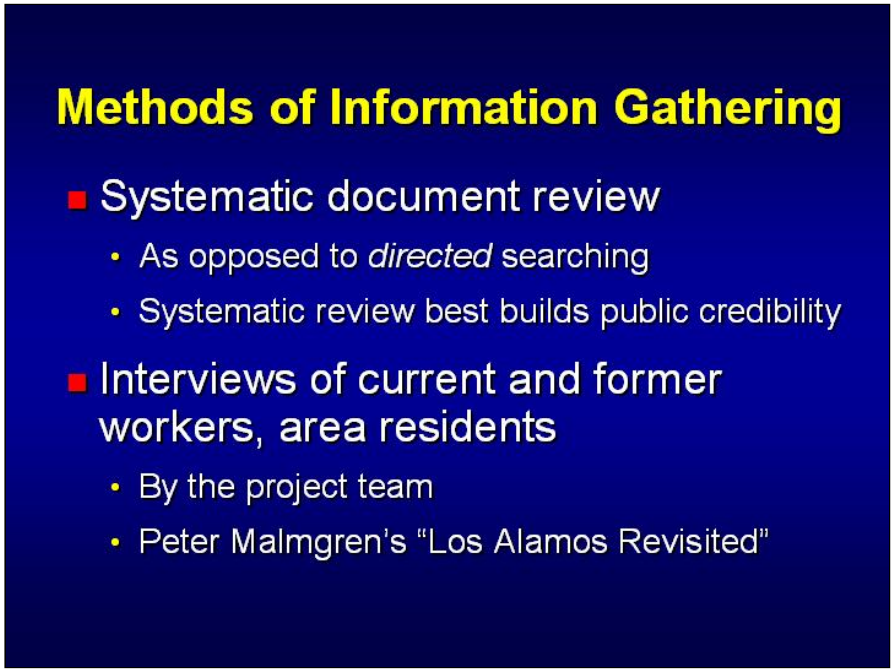
We have taken a different approach with the interim report than with earlier drafts. A summary of operations and an overview of our preliminary assessments are presented up front, and supporting details are provided in the appendices.



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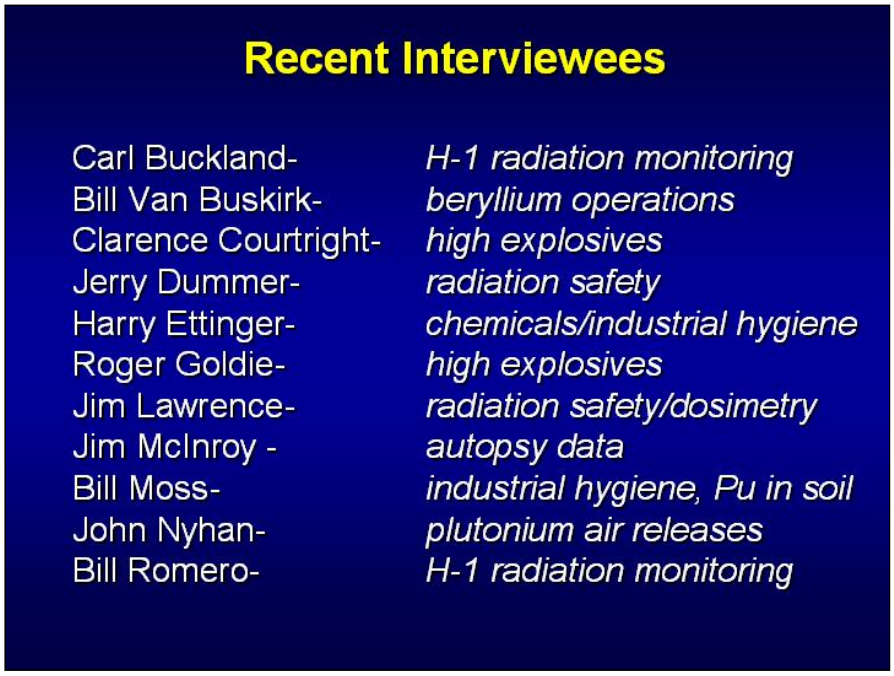
There are two types of search strategies. Let's say you are gathering documents from a file cabinet that you need to do your taxes. It is not well organized, but you want to gather everything needed to fill out your forms. In a systematic search, you would move from front to back and search all of the documents in each drawer. In a directed search, you would go directly to folders with labels relevant to your taxes, such as receipts and payroll records, or folders that are likely to contain relevant data based on your experience using your files. Directed searching can be more efficient, but systematic searching gives you higher confidence that nothing was missed. In studies like

LAHDRA, systematic searching is effective in building public credibility. We conducted systematic searches in the LAHDRA project. We also interviewed current and former workers and worked with Peter Malmgren, who conducted an oral history project that included interviews of almost 150 people who worked at or lived near Los Alamos. We appreciate his involvement. Interviews help fill in gaps and direct us to other areas of interest.



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This slide identifies some of the people we interviewed. Some of them are here tonight. These people reviewed our process and gave feedback. They were helpful with preliminary assessments and provided assurances that our approach was not off base.

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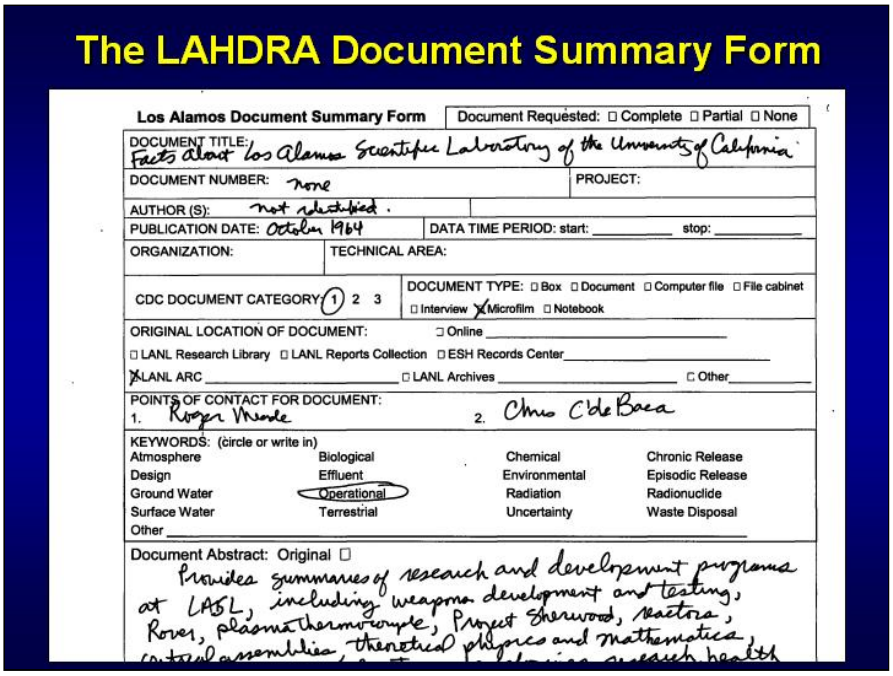
The project included 14 document analysts. Nadine Tafoya and Toby Herzlich were involved early on, assisting with public involvement. The document analysts pick out documents relevant to off-site releases. The group includes scientists and engineers that hold master and doctoral degrees and have a lot of experience in dose reconstruction.



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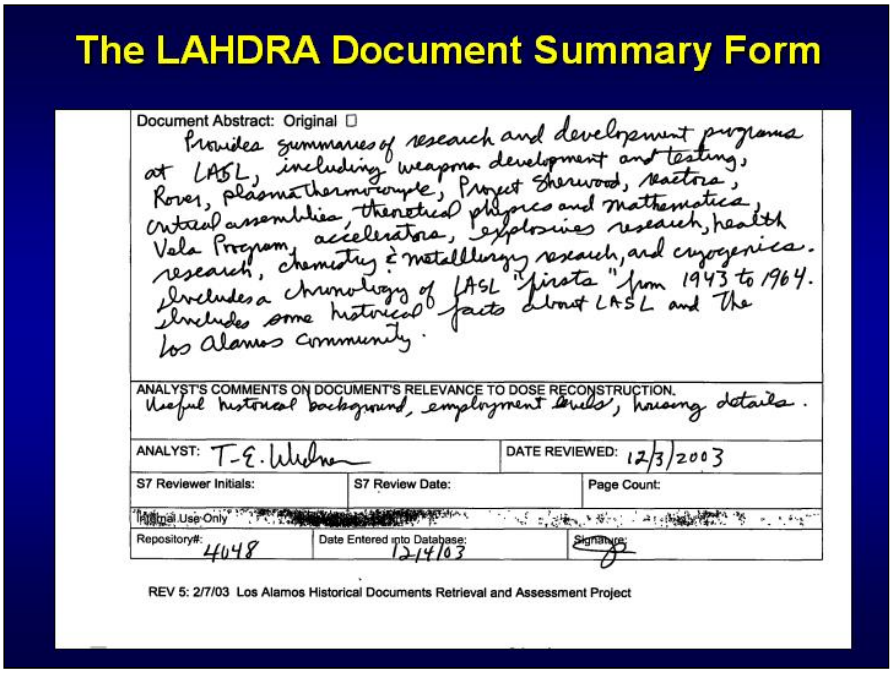
When the document analysts find a relevant document, they fill out a document summary form by hand. The top of the form is used to identify essential bibliographic information, the type of document, and where the document is located. The term document is loosely used. It could mean a large group of records or one sheet of paper.



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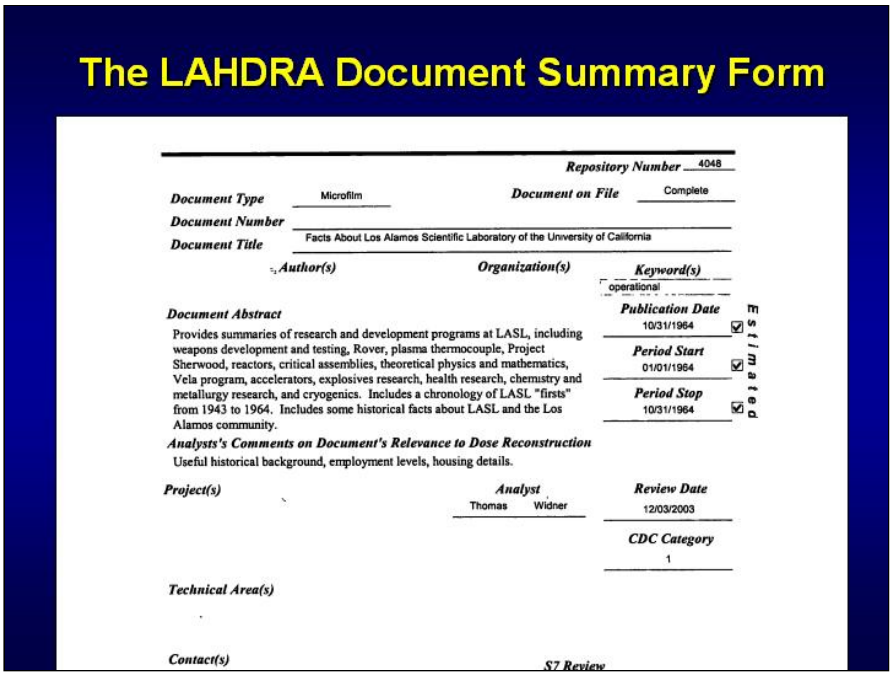
The bottom of the form provides space for the document analyst to record comments and to identify why the document is relevant. The form is sent to Shonka Research Associates, where it is entered into the database.



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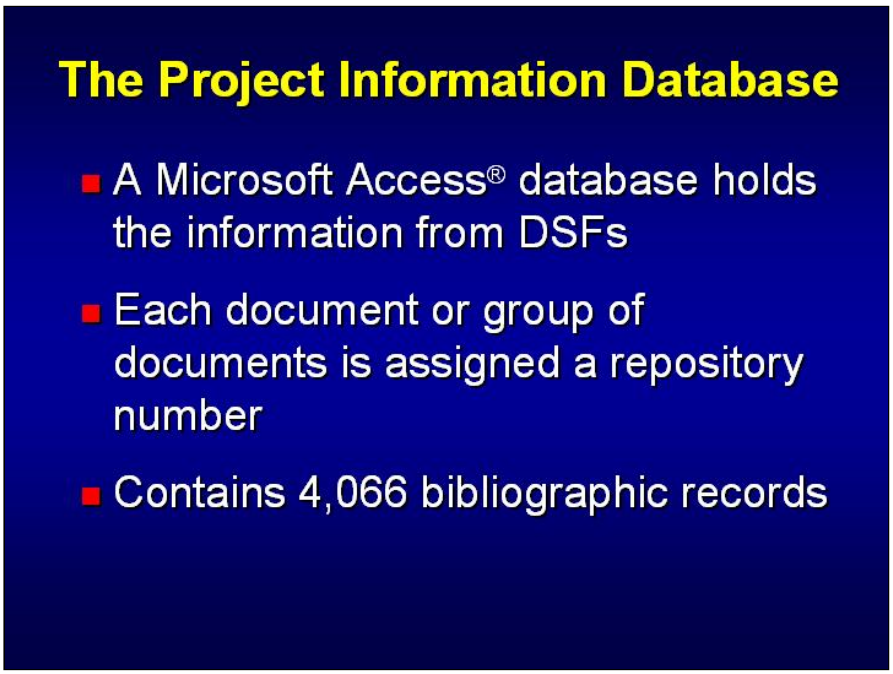
This shows how the database version of the form appears. Each document is given a repository number, which is used to track it within the system.



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Microsoft Access was used as the database. Each document is assigned a repository number.

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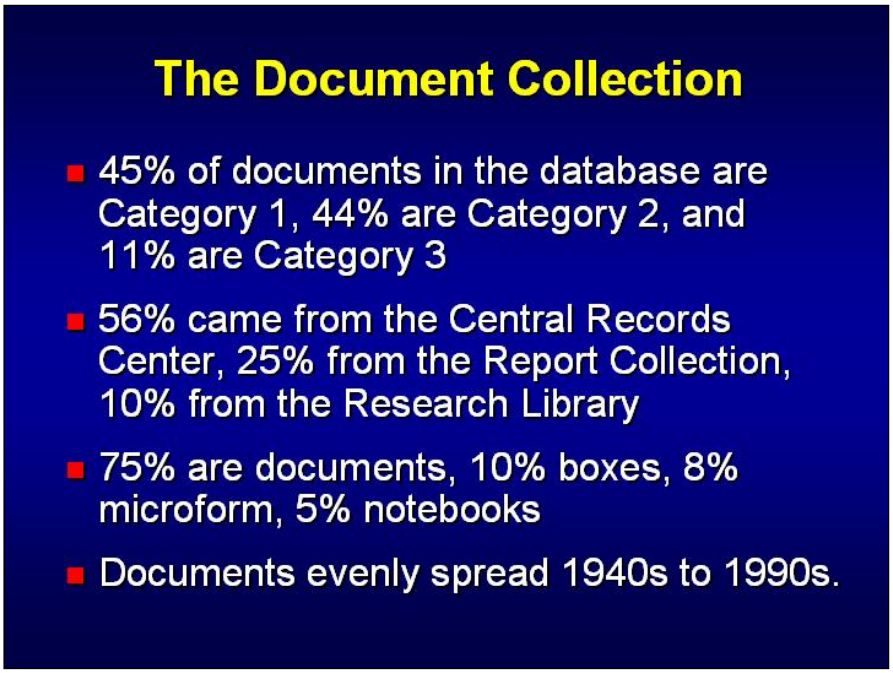
Documents are contained in file cabinets in the Atlanta office. Another set located in California will be handed over to CDC. A third set is located in the Zimmerman Library on the University of New Mexico campus in Albuquerque. It is the official public reading room as established by DOE. In the photograph, Jody Simmons is organizing document copies that have been scanned and cataloged.



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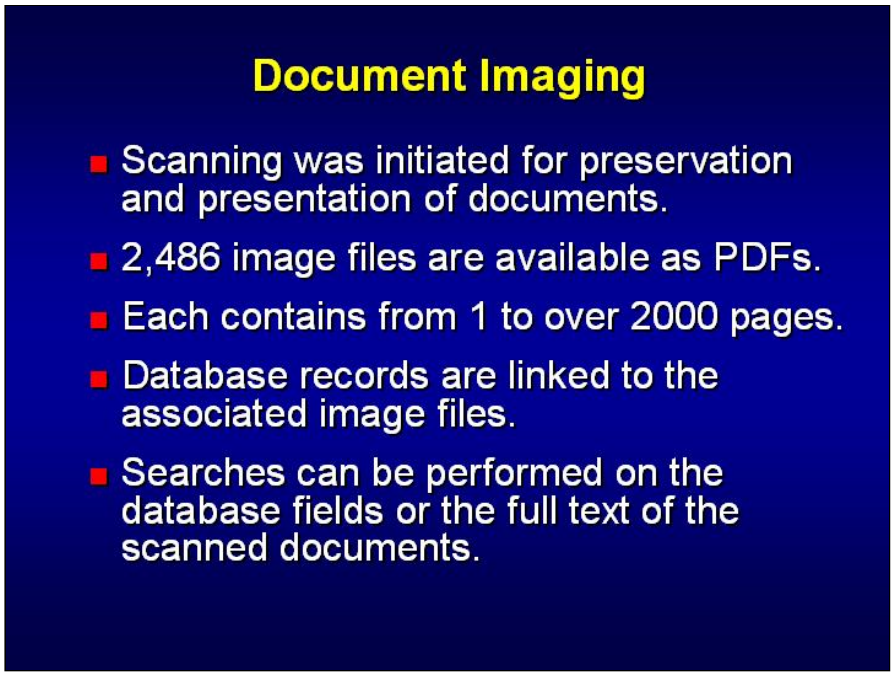
These are statistics of the documents that have been assembled by the LAHDRA team. Category 1 records are those documents that would be useful to a competent scientist involved in reconstruction of off-site releases or health effects. Category 2 document help to confirm releases or health effects, but do not provide the most basic information used for evaluating off-site releases. Category 3 documents are relevant to releases or health effects from other DOE sites.



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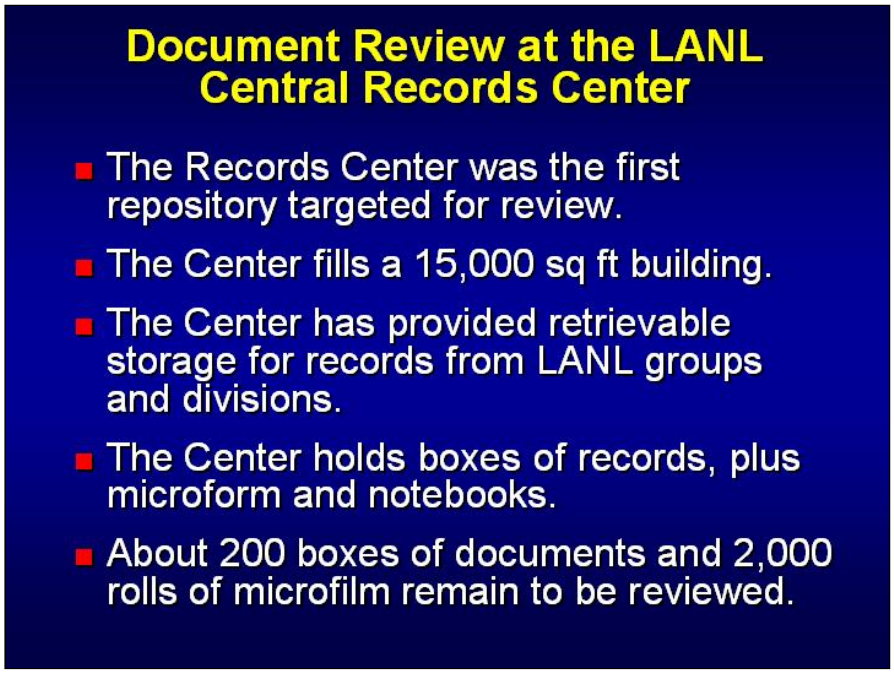
We proposed to CDC that documents be scanned to facilitate storage, distribution, and use. Documents were saved as PDFs, which are easily read by Adobe Acrobat Reader. The image files vary from 1 to 2000 pages. The process to locate a document begins with searching the database. Links are used to pull up an image of the scanned document. Full-text searches of all documents are possible, and are quite powerful tools. For example, by entering "nickel carbonyl" all scanned documents are searched and the program lists and provides images of pages where the term appears. Image files are currently contained on two DVDs or about 11 CDs. Zimmerman Library will soon be set up with a database. We also plan to provide similar workstations at the Santa Fe Community College, Northern New Mexico Community College, and Mesa Public Library in Los Alamos. It is a real time saver and increases access to the information released as part of the project.



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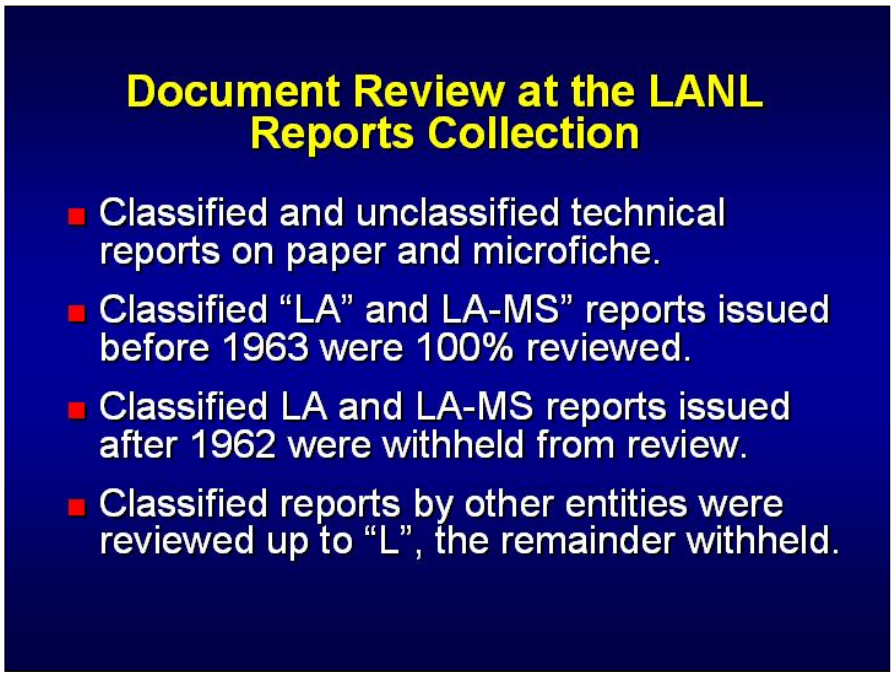
Key document centers at LANL were identified for review. They include warehouses of records containing boxes and file cabinets of records, microfilm and notebooks. We spent a long time in the Records Center and have about 200 boxes and 2000 rolls of microfilm remaining. We were told that LANL resources were not sufficient to support us with escorts and classification reviewers for completion of review of paper documents at the Records Center under the existing contract while processing of the backlog of documents for classification review was underway.



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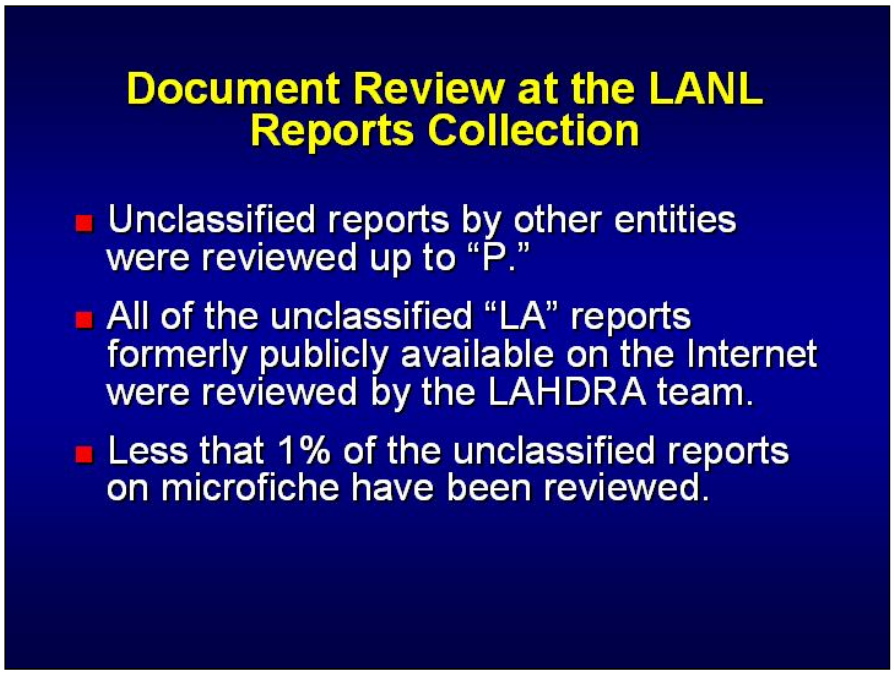
This slide summarizes the type of records we reviewed. LA and LA-MS reports are basic technical reports written by LANL scientists, researchers and engineers. We reviewed 100% of the classified "LA" reports produced before 1963. We were denied access to the same type of reports produced after 1962. Classified reports issued by entities other than LANL were reviewed up to those starting with "L" while the remaining were withheld.



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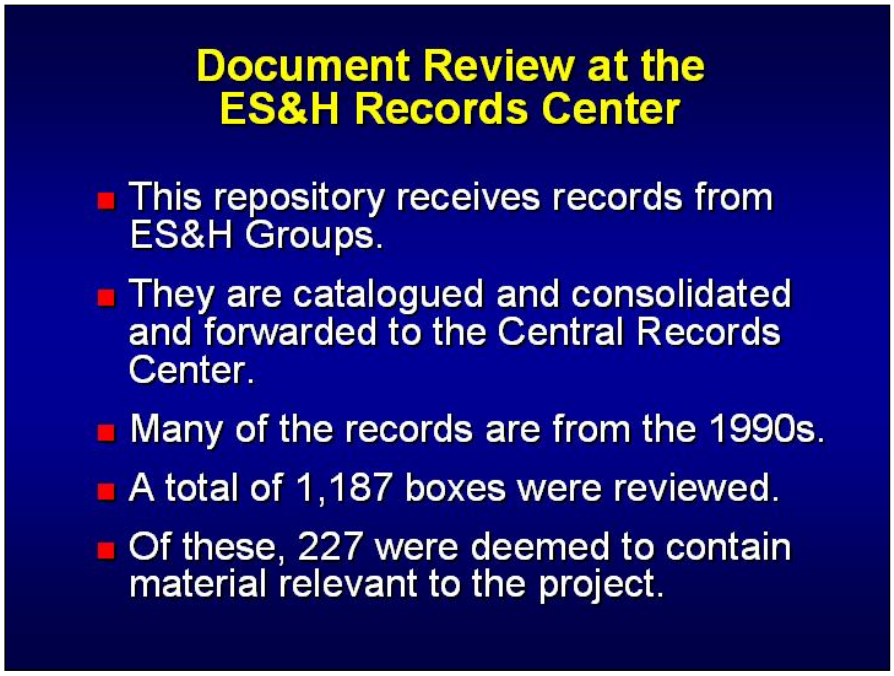
Because of contractual reasons, work in the LANL Reports Collection had to be brought to a halt. Access was not denied. Formerly, many unclassified LANL reports were available on the Internet, but were pulled from the Internet after the September 11th attacks. Only 1 percent of the microfiche was reviewed because it was not given a high priority. If the project goes forward, some of these documents may warrant review.



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Records are typically housed in the ES&H; Records Center, cataloged, and consolidated before they are sent to the Records Center. By our standards, many of these documents are of a lesser interest because they are mostly newer records.

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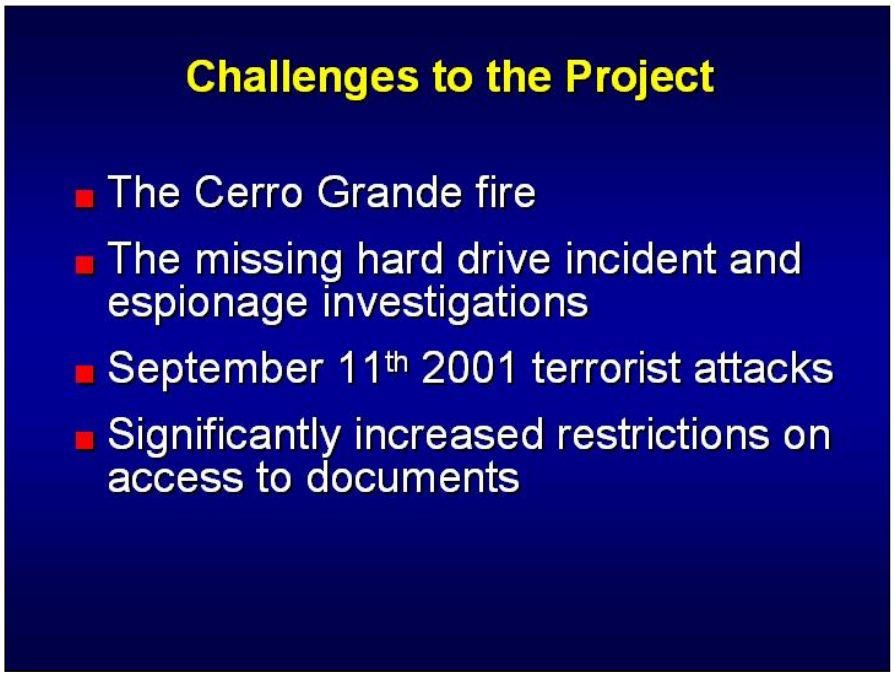
Other locations include the Weapons Engineering and Manufacturing and Weapons Physics Division records contained in vault-type rooms and safes, which number in the hundreds. We spent several months reviewing LANSCE records. The Litigation Support Database is of high interest because it contains some information supporting litigation involving exposures. The project team reviewed a hardcopy listing of documents contained in the database. The team was making some progress with the database listing when the availability of LANL resources became an issue. Review of actual documents had to be put on hold.



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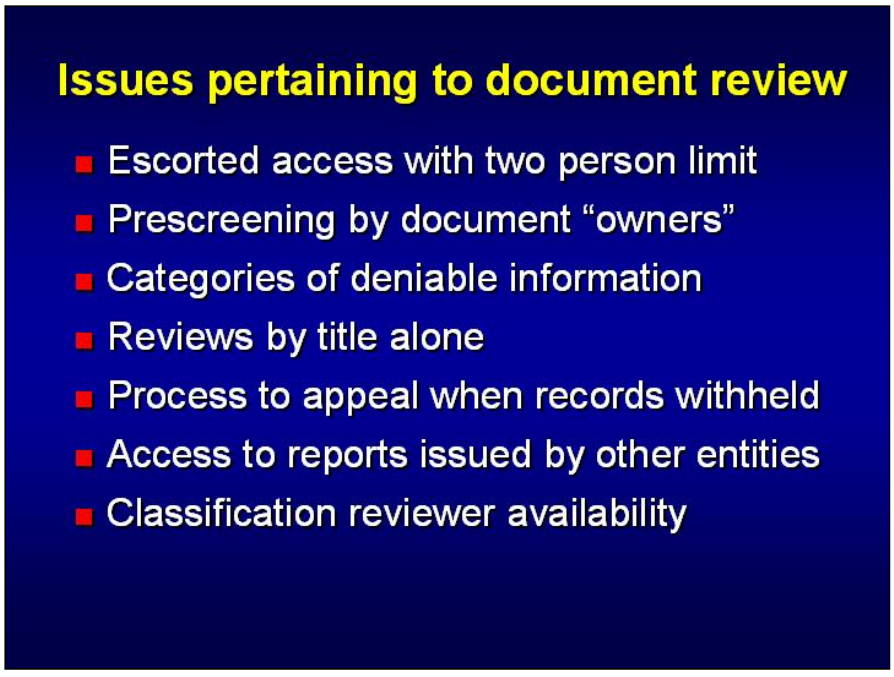
Because of the "roller coaster ride" of security concerns, LANL has increased security awareness and a high security state now exists at the lab. These incidents have challenged the project team and really slowed things down.



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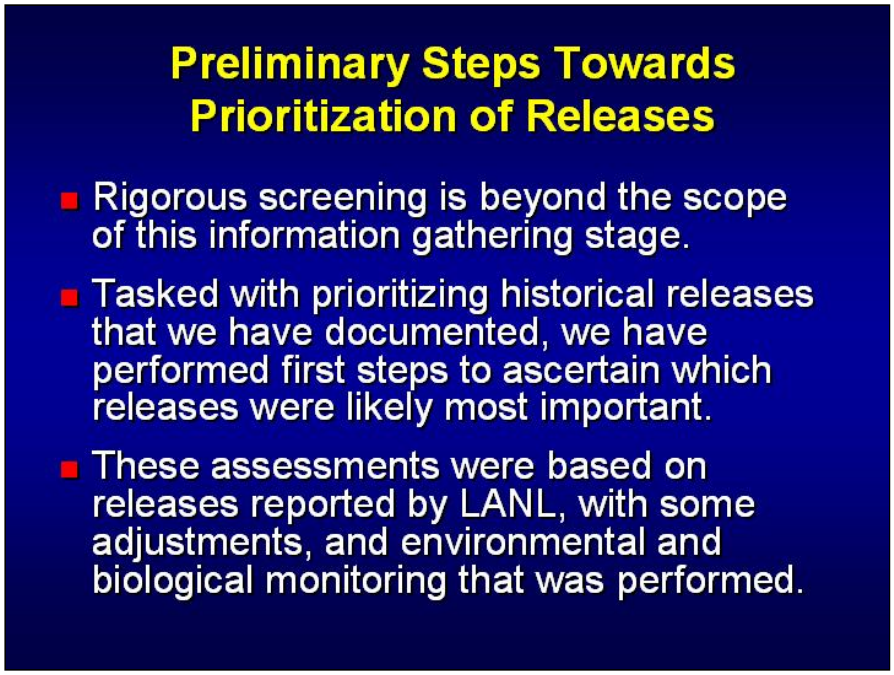
This slide summarizes the issues and challenges to progress, which are also discussed in the report. At first we were granted unescorted access after several safety briefings. Over the years, more and more rules regarding access were put in place, and now we have to be escorted at all times. Half way through the project, LANL decided that all documents needed to be prescreened by the document "owners". An appeal process was put in place to address cases where it is possible that we were denied access to relevant material. We were asked to review some documents by their titles alone. This is problematic, however, as titles are often not indicative of the actual content of a given document.

Public: Do the restrictions seem reasonable and justifiable?

Tom Widner: I think a response was necessary. LANL was not trying to obstruct the project but trying to protect records. We don't question the restrictions because we do not want to have any improper release of classified records.

The classification review process required multiple reviewers. Once these reviews were completed, then the records were sent to us. In the beginning of the project, the classification reviewers did not have authority to downgrade or declassify documents, which created a sizeable back log. For example, many documents we reviewed in 1999 are now just being released. Over the last few months, we are seeing an increase in support. Previously, the project was seen as an unfunded mandate. Over the last few months, changes have occurred. During the last 4 to5 months, the lab created a project to support our project. It will apparently be an effective system if the LAHDRA project continues. We have some encouraging signs regarding support.



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This phase of the project is an information gathering process. Rigorous dose reconstruction is not in the scope of the project, but we have conducted some preliminary analyses. Our emphasis has been to fill in some gaps and make some adjustment to data.

Prioritization of Airborne Releases

- Priority Index values were calculated by computing the air volume required to dilute the annual activity released to the worst-case non-occupational Maximum Permissible Concentration (MPC) per federal regulations.
- An Off-Site Releases database was created to tabulate effluent information and to link it to existing LANL documents assembled by the LAHDRA team.

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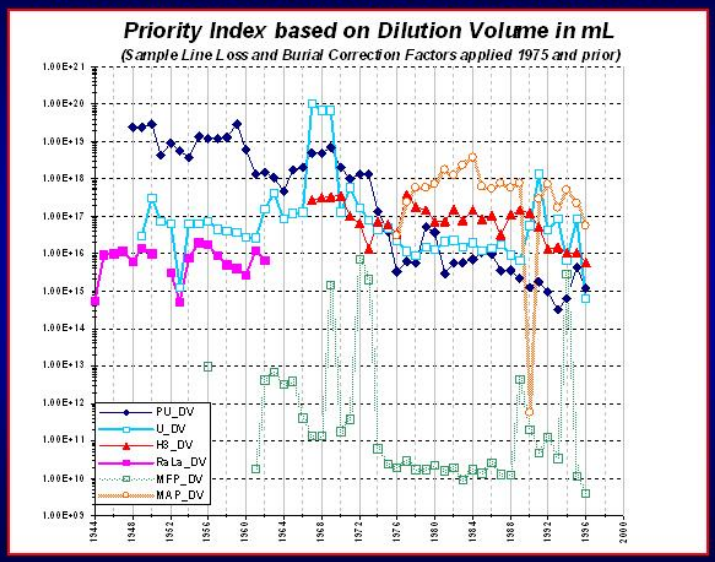
Prioritization of airborne releases was performed by determining what volume of air was required to dilute the release to bring it to an acceptable level in public areas. We created a separate database to pull together the information needed for this assessment.

Prioritization of Airborne Releases



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This chart represents our priority indices for airborne radionuclide releases. A high line indicates that more air is required to dilute the release.

Prioritization of Liquid-borne Releases

- Priority Index values were calculated by computing the volume of liquid required to dilute the annual activity released to the worst-case non-occupational MPCs.
- Based on releases asserted by LANL, Priority Indices were calculated for total plutonium, Pu-238, Pu-239, Sr-89, Sr-90, tritium, gross alpha, and gross beta radioactivity.

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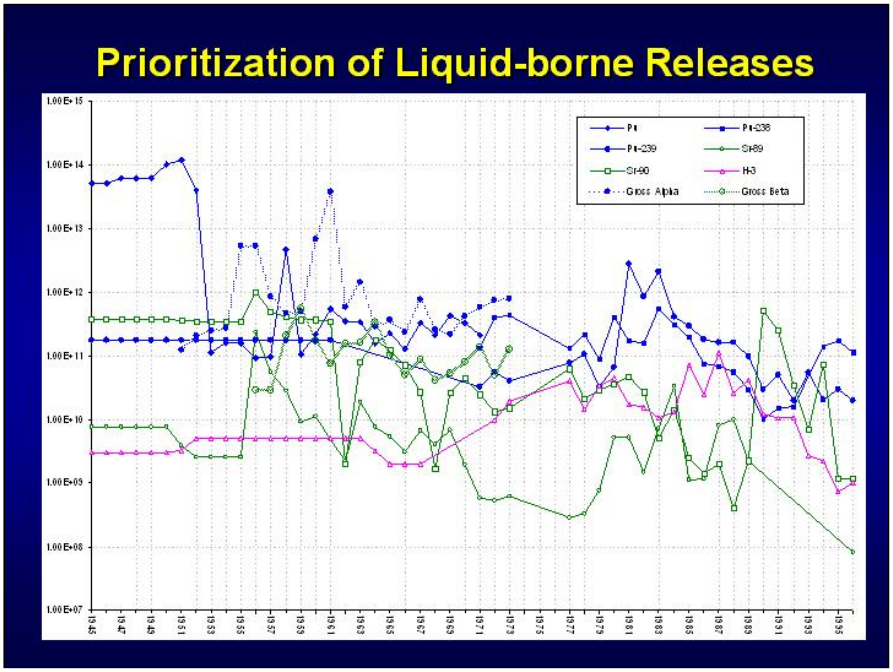
In a similar analysis, we examined liquid-borne releases.



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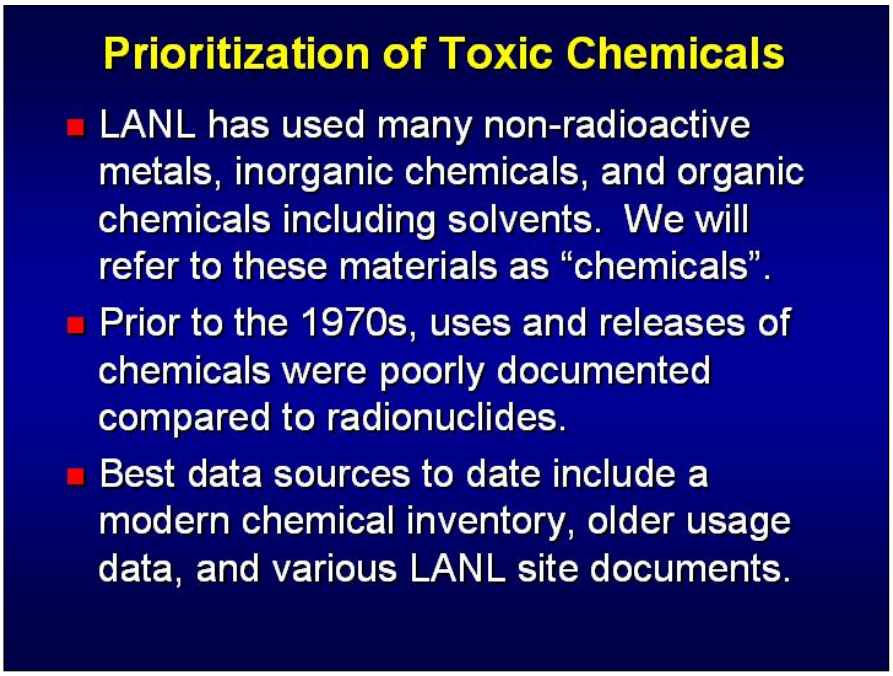
Plutonium releases were of the most importance during early years. Airborne plutonium exposure pathways appear to have been more complete that those for liquid-borne releases, because of the arid environment.



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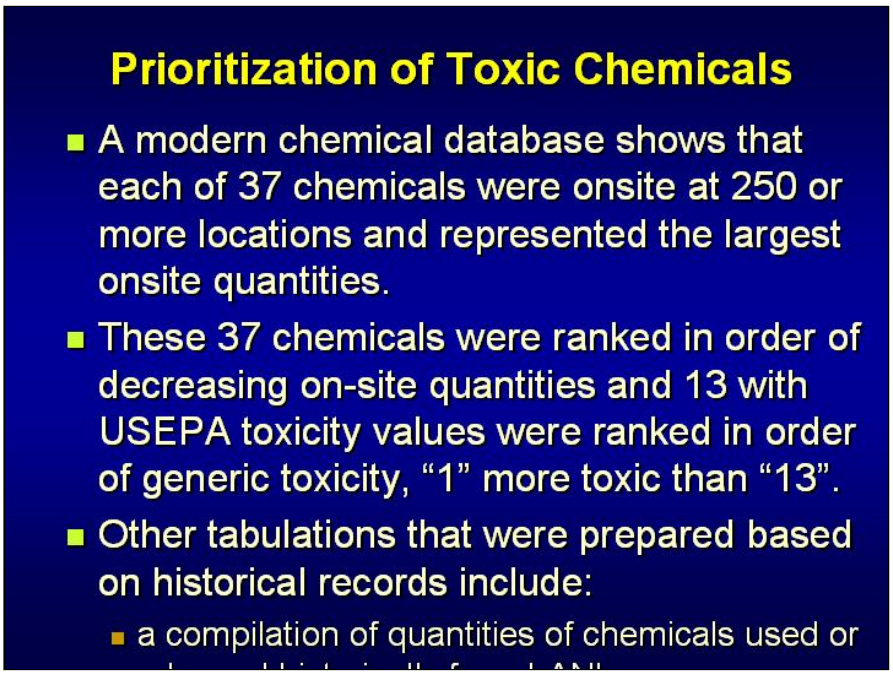
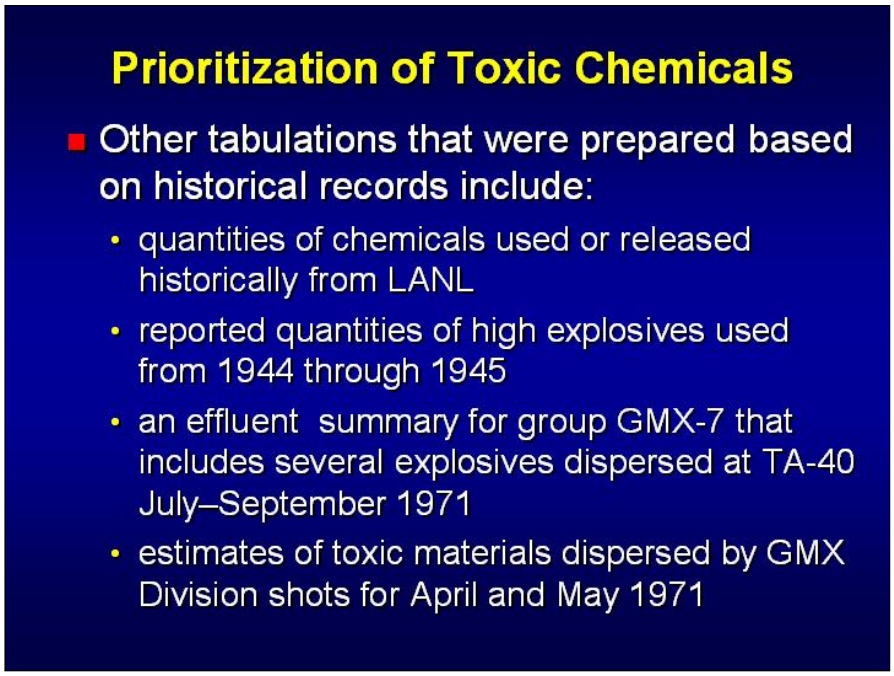
Relatively poor records were about toxic chemicals prior to the 1970s. Information is scattered through various reports.





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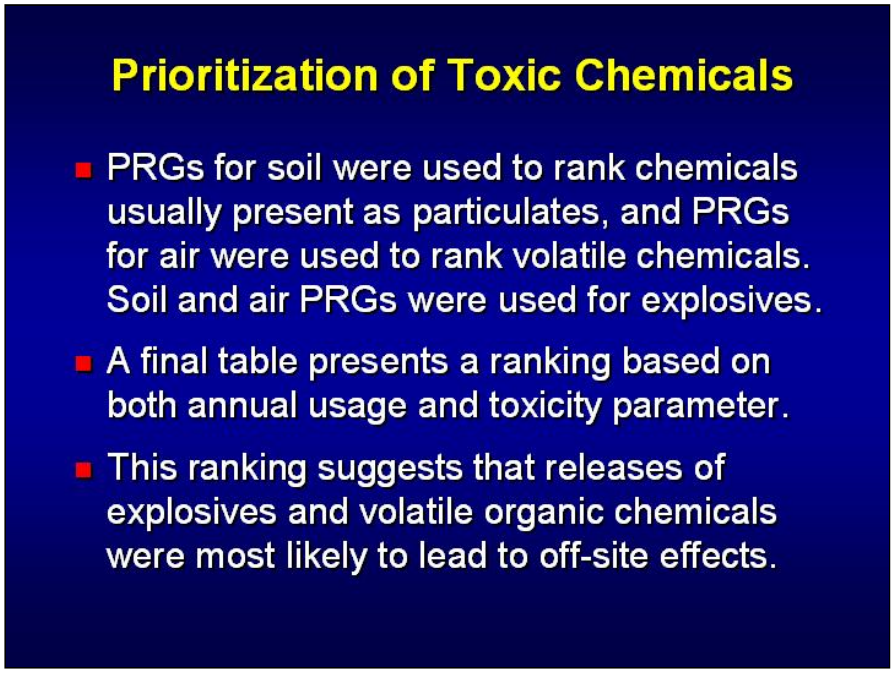
The report includes a table that ranks chemical quantities. A first step in prioritizing chemical releases is to determine the types of chemicals used and in what quantities. Prioritizations were based on inventory records and other tabulations. There are very few places where the information is condensed. We gathered this information from multiple locations.



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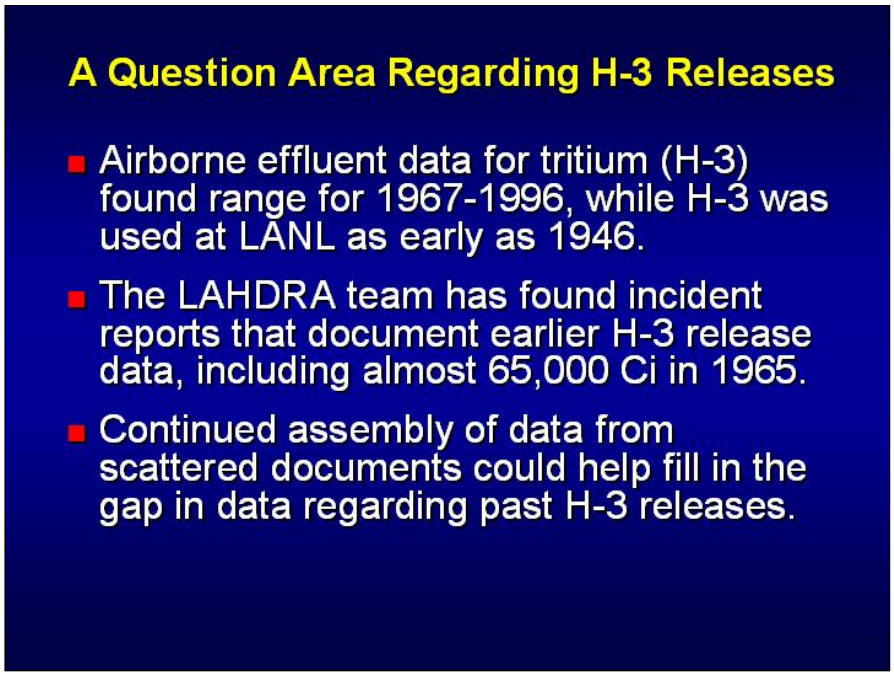
PRGs were used to rank chemicals for off-site populations. The final chemical prioritization table in the report, which ranks LANL chemicals based on toxicity parameter and annual usage, is likely the most useful table for prioritizing chemical releases.

Before health hazards associated with beryllium became known, beryllium was machined in the 1940s until about 1948 without engineering controls. Beryllium might be another material that warrants further investigation.



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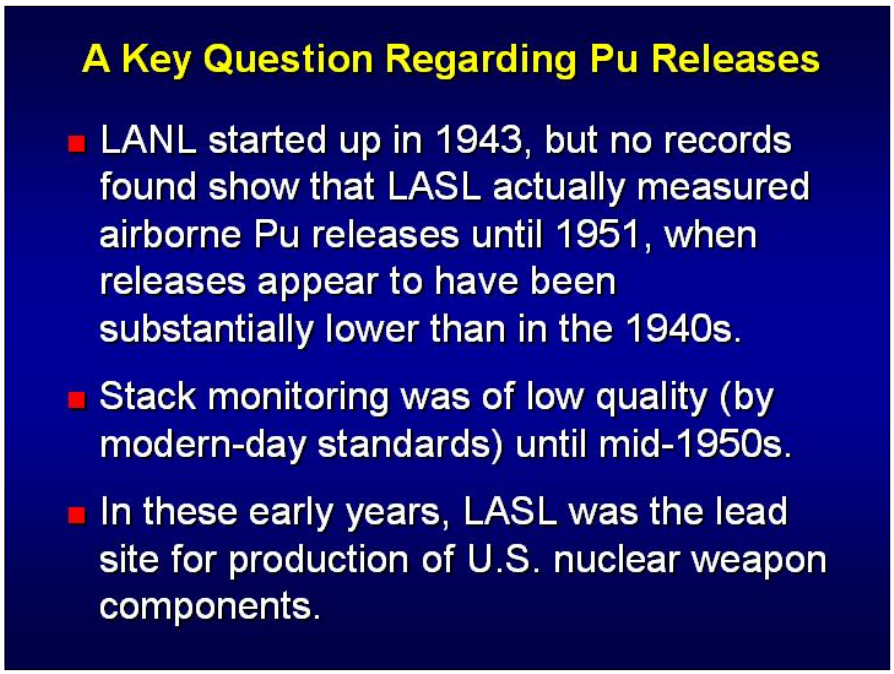
We know from records that tritium was used as far back as 1946. To determine levels of tritium releases, we are pulling scattered incident reports. Assembly of this type of reports is important to fill in gaps before 1967.



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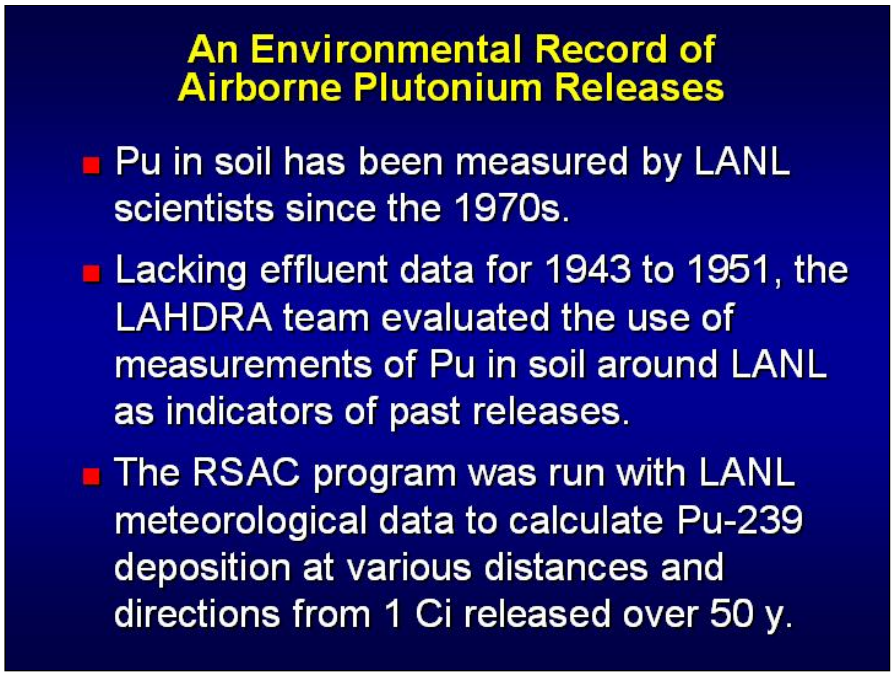
LANL started handling plutonium in 1943, but records do not show any monitoring of airborne releases until 1951. LANL was the lead site for production of nuclear weapons components until the Hanford Plutonium Finishing Plant and the Rocky Flats geared up. Stack monitoring began in 1951, but even then it was relatively low-quality monitoring as compared to modern-day standards. We are not making judgments, just evaluating the quality of data.



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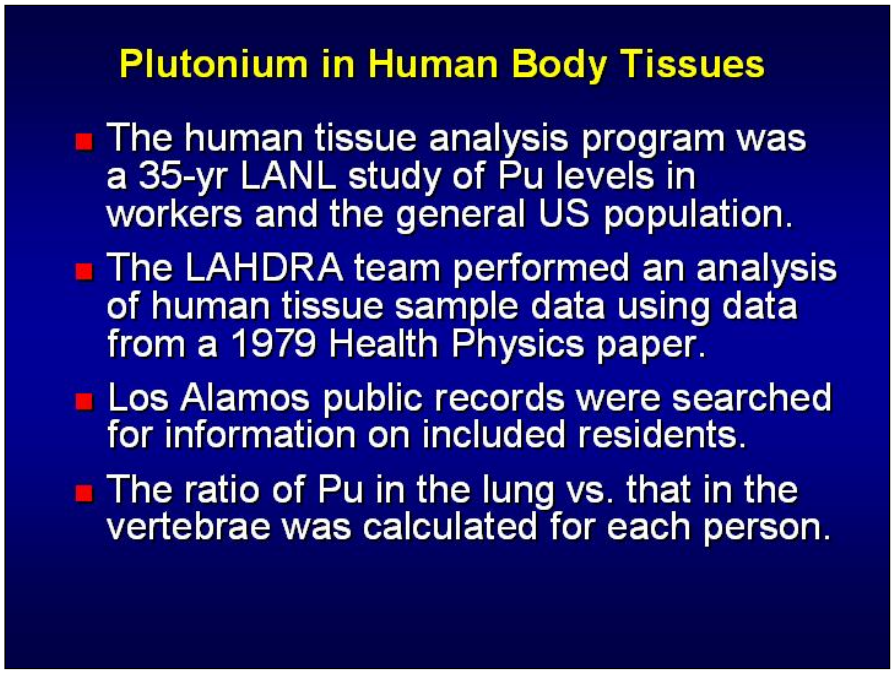
Because of lack of data, we have done some preliminary prioritization assessments by gathering data from about 700 soil samples that the lab shared with us in an electronic form. Soil can be a good indicator because plutonium doesn't travel rapidly once deposited on soil. We used the Radiological Safety Analysis Computer code (RSAC). That program was developed at the Idaho National Engineering and Environmental Laboratory (INEEL). For LANL, we took the best soil samples (those close to the lab that had the least uncertainty) and local meteorological data and calculated what releases would have to have been to match what is in the soil. Results are uncertain, but indicated that airborne releases from LANL could have been much higher than officially reported. We do not have final answers regarding potential health effects around Los Alamos, but the analysis indicates that soil analyses warrant a closer look.



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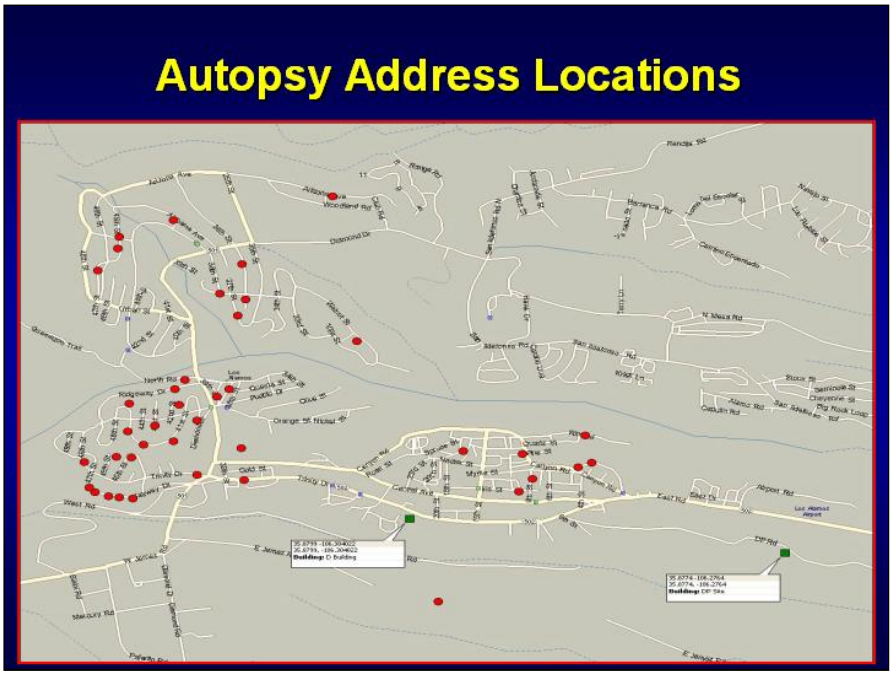
Autopsy results from the human tissue analysis program show that non-worker residents of Los Alamos have elevated levels of plutonium in their bodies compared to what you would expect from global fallout. Beginning with the individual autopsy cases, we examined public records to match cemetery records with autopsy cases. We used such information as cemetery records, the Los Alamos Monitor and old telephone directories to determine where a person lived in Los Alamos up to their time of death. We also used GPS to get coordinates of where people lived in relation to D building and DP site. We may be able to use this information to place bounds on the magnitude of past plutonium releases.



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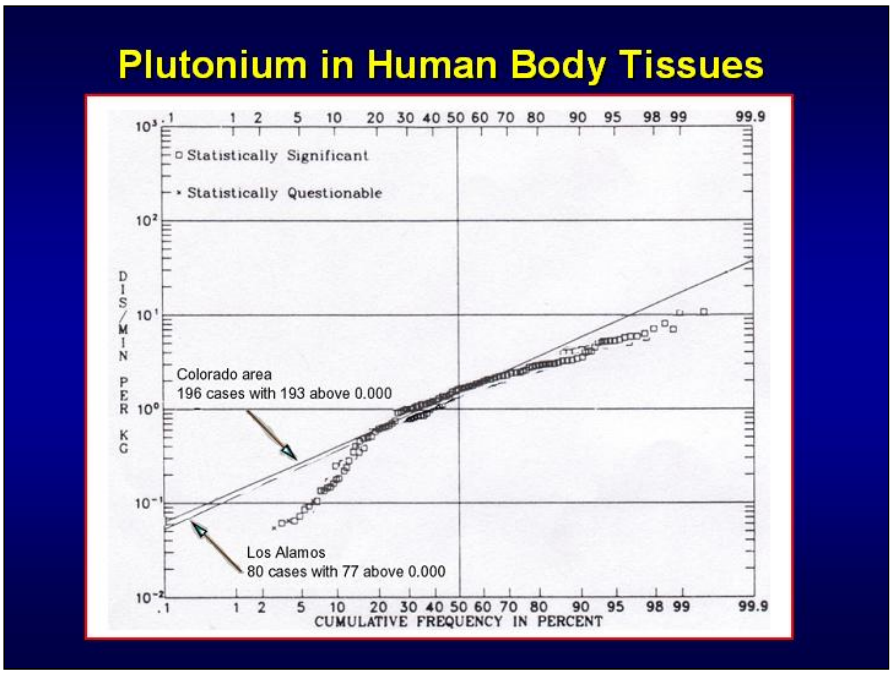
Each red dot on this chart is a location where a non-worker participant in the human tissue analysis program lived. Other areas are not yet pinpointed on the map because there are not homes there anymore. If you have a history and time sequence of where people lived and what was in their bodies, this can be a useful tool.



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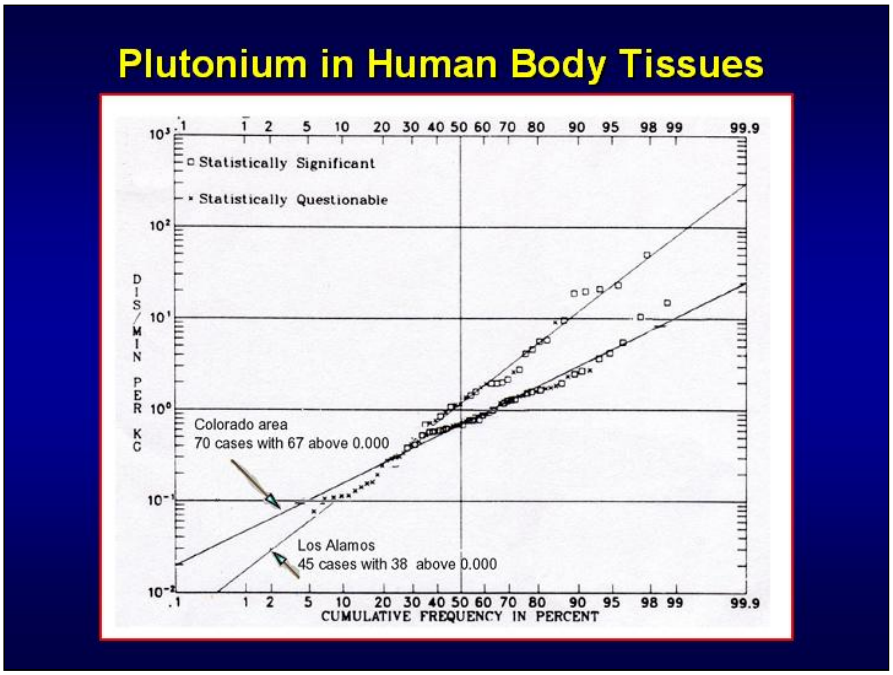
Liver tissues from Los Alamos area residents were compared to data on liver tissues from Denver cases. The overlay plots show nearly identical levels, without much difference between residents of Denver and Los Alamos. Denver and Los Alamos can't be distinguished from one another in this plot, even though data show that fallout levels in Denver from weapons testing were significantly higher than around Los Alamos. You would expect liver tissue of Denver residents to have higher levels of plutonium than Los Alamos, but Los Alamos is just as high, leaving open the possibility of local contribution from plutonium processing.



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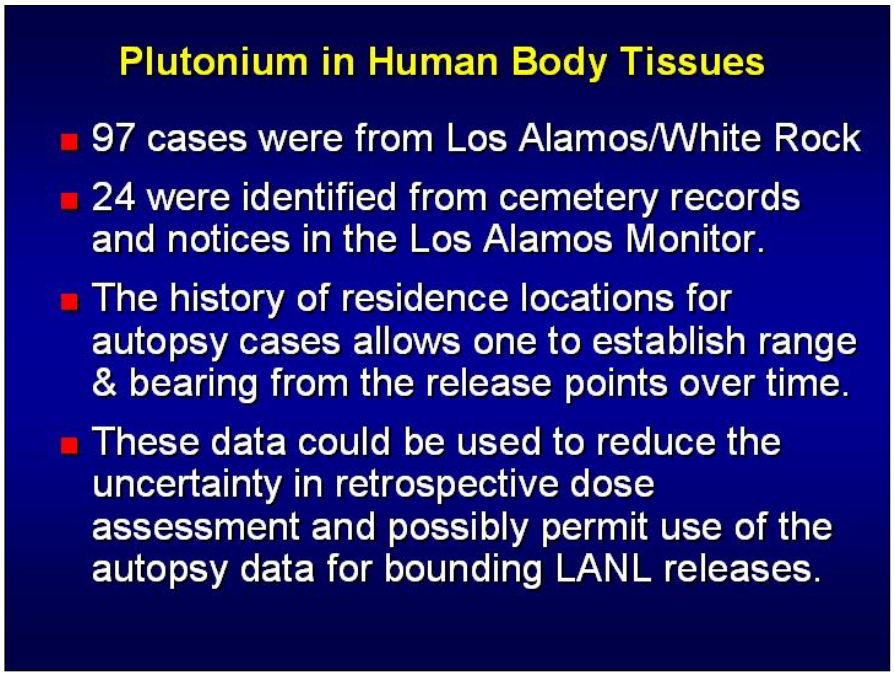
Vertebrae samples show higher levels in Los Alamos than Colorado. Different organs of the body have different half lives.

Public: How do you reconcile everybody exposed to above-ground tests?

Joe Shonka: We used autopsy data. All sources show different levels across the country. The levels vary mostly by latitude. Studies in Denver examined cases from fallout alone. Denver is so large, and releases from Rocky Flats don't seem to have been a factor for the residents selected.



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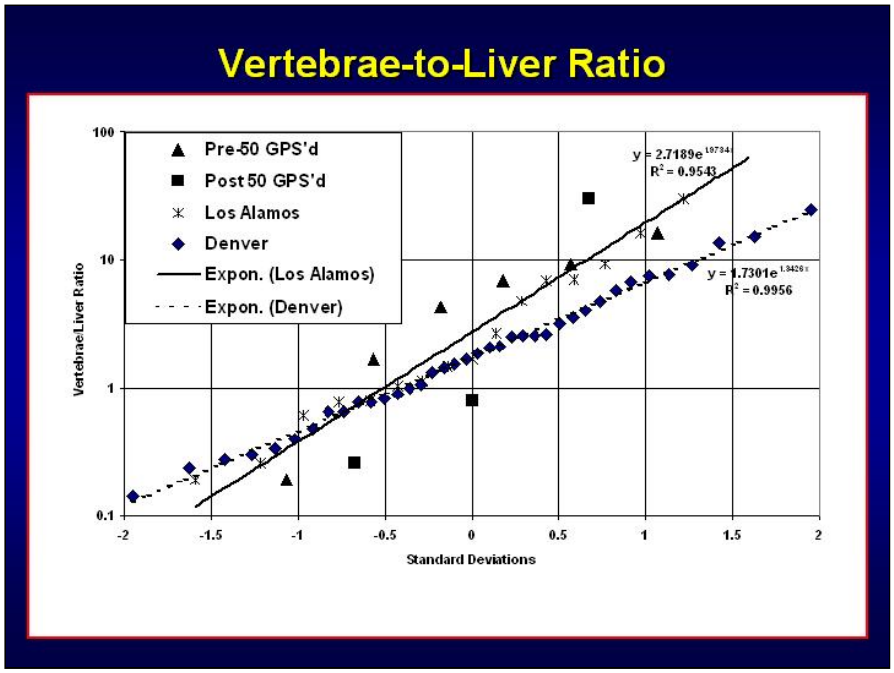
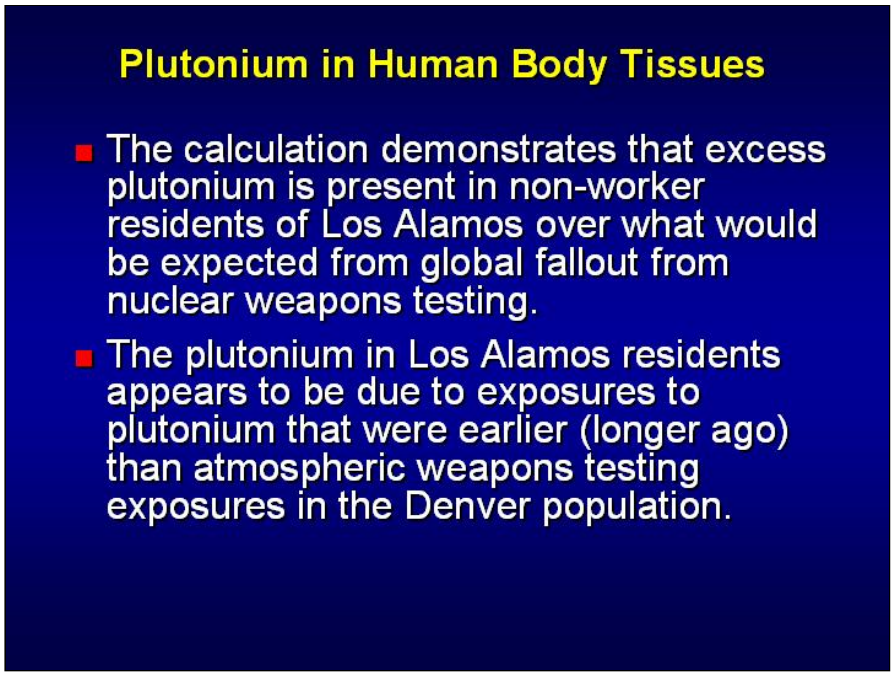
Time history and bearing of distance from release points may allow one to put bounds on how high or low levels could have been.

Dennis Paustenbach: Didn't the people of Los Alamos move around a lot?

Joe Shonka: People moved every two or three years as they moved up in the "pecking order." My daughter looked up addresses back to 1948. People moved because they were living in government housing, which was defined by the size of their family and paycheck. I know people who moved once a year. Government housing went out in 1967.

Tom Widner: Housing was of limited supply on the mesa and was one key criterion for determining the number of people the lab could hire for quite some time.





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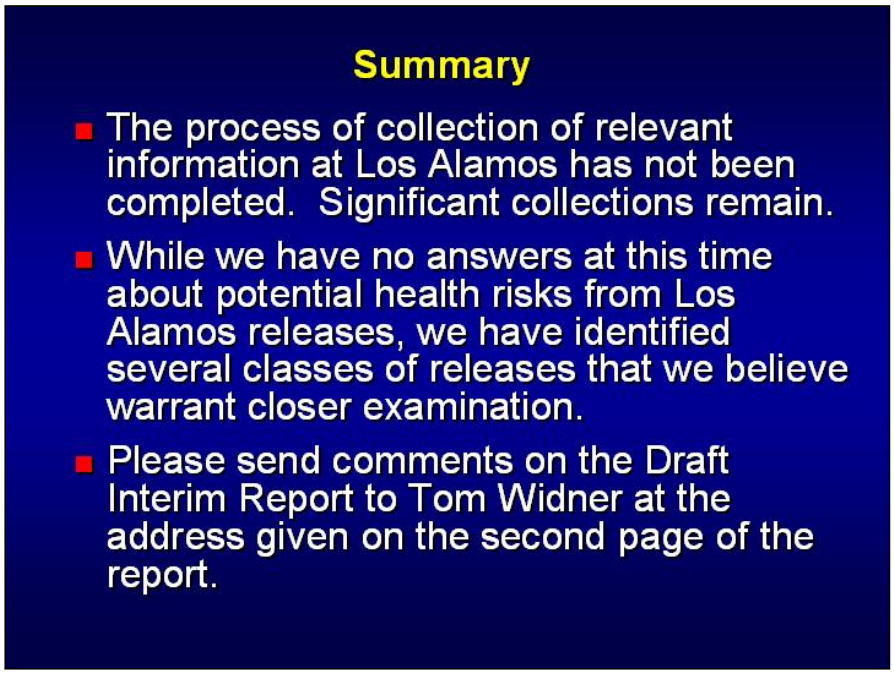
Considering the half-times of the various organs, the analyses indicate that people around Los Alamos were exposed to plutonium in earlier years than the people of Denver.



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We have started a systematic review, but it is not complete. The review of some collections has not even been started. We do not have answers, but we have identified some key areas that we believe warrant a closer look. It would be good if some form of document search can continue.

Public Comments / Questions and Answers

Public: Does it look to you that the release of radio nuclides comes from many small releases or a few large releases?

Tom Widner: Plutonium releases were largely routine releases spread over time; tritium releases were more

episodic. There really is a mixture of the two. Soil sampling does not help ascertain the detailed timing of releases.
Joe Shonka: Episodic releases are in some cases very well documented for the time frame and quantity. Specific experiments are well documented. Tritium was typically released in relatively large releases in accidents.

Public: Tritium containers in Area 4 continually leak, which is being denied. Are these contractors at the lab?
Tom Widner: Yes, in most cases.

Public: What is the benchmark for all the reports?
Tom Widner: The owners are the University of California. An appeal process was set up and when we used it there was quite a period where we did not receive a response. Now there is a process in place that will allow the CDC to come in and review documents. CDC will have to push the issue. We are just now ready to test the process.

Public: Can you give us a sense on how long it will take the CDC to make a go, no-go decision?
Phil Green: Once we receive the bid package, we are hoping for release of funds to be in 30 days. A leader from the contracting office indicates funds to be released by the end of the fiscal year.

Public: How long will it take to complete the phases?
Phil Green: We can't release that information. The contractors need to provide that information in their proposals.

Public: The time to complete the review could then vary with the proposals received?
Phil Green: The level of effort, time to gear up, maximum numbers of people working, staffing restrictions will all have play. It also depends on the support received from LANL. As Tom said, we are making good progress in getting documents out of the backlog to be included in the final report in June.

Public: The lead up to public meeting seems to stimulate action.
Phil Green: Improvement was facilitated with ongoing negotiations. Guidance documents evolve as we work through the process. I am cautiously optimistic.

Public: Do you know why there appears to be an equal amount of records per year even with the lab growing?
Tom Widner: A larger fraction of older records are relevant to the project.

Helen Dorado-Gray, Sen. Bingaman's Staff: I represent Senator Bingham. I sent a letter supporting continuation of this work. It is important for workers to know what they were exposed to and at what levels. Bingaman has requested funding to assist in this project.
C.M. Wood: When the project started, support for the project was an unfunded mandate and the costs came out of LANL's overhead. Now they have a line-item to support the project and have the money now to support what we are doing. The lab allocated $1.2 million this year for their processing of records in the backlog for classification review. Our contractors were also denied access to some records. As government officials, however, CDC will be allowed to review records that our contractors can not. By the next meeting, I should have seen lots of documents previously denied access.

Public: We are impressed with how you overcame pitfalls and landmines, and I thank you.
Tom Widner: We appreciate your involvement.

Roger Snodgrass, Los Alamos Monitor: Can you give a sense of what has changed since the last meeting and how much you have accomplished?
Tom Widner: We are still in the one-half to two-thirds range of completing the review. We had to slow down and

give CDC time to determine how to finish the work with the available funds.
Joe Shonka: We got some significant things done. We scanned in documents and ran OCR on the documents. We assembled a priority list and were able to get the backlog of records out quickly. We have put a lot of effort into the draft report, interviews and critiques of our work.

Roger Snodgrass, Los Alamos Monitor: How did you determine that more plutonium was released that the lab reports?
Tom Widner: We used soil data comparisons based on more careful selection of samples, resulting in the 37 best samples.
Joe Shonka: The issue is not closed. We need to formalize calculations. Emissions from D Building were unfiltered, and it appears from the slope of the line that a lot of the releases apparently came from D Building. The assessment also ignores weathering of the soil.

Public: What is being done to indicate uncertainties?
Tom Widner: That is hard to do this early on, but will be a key consideration as work continues.

Public: Don't just say numbers are higher than reported. You need to indicate the significance of numbers.
Tom Widner: We accept your point. These are preliminary assessments. We can not draw conclusions regarding health effects. It would be premature and not appropriate at this point.

Public: Can you apprise us of how tight the lab is in respect to a terrorist attack? If there is an attack in near future, it could really spread contamination around the area. Have you been apprised?
Tom Widner: No, that is really out of the scope of our work.
Phil Green: Our subject is historical releases.
Tom Widner: We are not focused on current efforts and releases.

Dennis Paustenbach: If this project was taken to an endpoint, is it likely that this site will be as well understood as Rocky Flats?
Tom Widner: Each site is different. Each has data gaps. We have quite a bit of work to do before we can say.

Dennis Paustenbach: At the half-way point of data gathering, is data as robust as compared to other sites?
Tom Widner: Yes. LANL has largely maintained a research atmosphere. Some activities are more documented; others less.

Dennis Paustenbach: Based on other experience, what is the time and cost required to complete the document review?
Tom Widner: That depends on how CDC decides to go forward. Some steps could be collapsed or a directed document review could be considered. I don't know what CDC is going to ask for.

Dennis Paustenbach: How many years will it take to complete a dose reconstruction?
C.M. Wood: We can't talk about that. The RFQ is in procurement. CDC has similar experience at Hanford and the Savannah River Site. These are production sites and easier to calculate. Another research facility is INEEL. It might be instructive to explain what CDC is doing there. Dose reconstruction is a series of iterations at which you come to a decision point. At this point, where a certain amount of funds needs to be added to the contract, you determine if you have enough information to do a dose reconstruction. If the answer is no, you need to gather more information.

Public: What makes a dose reconstruction worthwhile? It was reported that there is an epidemic of cancer among employees in LANL.
C.M. Wood: Radiogenic cancer is very specific. At Hanford, large doses of iodine followed with a Hanford thyroid epidemiology study, which may be an indicator for a dose study. That's one reason. The Snake River Group is not interested in dose reconstruction. They are concerned with current issues.
Helen Dorado-Gray, Sen. Bingaman's Staff: One reason why is it important to do dose reconstruction is to support programs developed to compensate people that suffer resulting disease or ailments. If we don't do dose reconstruction, people can't settle with the government. This is the government's way of saying we have had some bad practices but are willing to compensate.
Tom Widner: A dose reconstruction often provides the public with the first independently generated picture of a site's operations and potential impacts.
Joe Shonka: A dose reconstruction is important because people become distrustful of site-specific assertions of what was released. Independent scientists go in and study an area. They prepare their assessments on releases and potential effects. They can provide some closure on what was released and did it hurt us.

Tom Widner: We are not here to say if lab did no wrong or that they did all evil. We are here to find data, and the data lead us in one direction or another. Some assessments we have conducted showed that releases were lower than expected; others showed that releases were higher than what most folks anticipated. This is the first comprehensive review and compilation of records at LANL. We had to truncate our efforts at this point, but we have added quite a bit.

Public: Is the 60-day comment period from today?
Tom Widner: Yes. The biggest room in the world is the room for improvement, and we look forward to receiving your comments and suggestions.

Public: Could you clarify the compensation act? Individual workers do not pay dividends for workers. There is an overall increase of knowledge in the community. How do you determine if it is appropriate to continue?
Susan Flack: A few workers have been able to use information released through this project. There are a couple of examples where workers could tell the information was about them based on the time frame although the names had been removed. They had the luxury of going through records the lab doesn't have time to go through.
Tom Widner: We are not focused on the workers; that is NIOSH's domain. However, we inform NIOSH about information we find that we think would be useful to them.
Peter Malmgren: I am aware of the struggles, of people feeling abandoned. The people involved in the compensation claim process are frustrated. The lack of attention to these people is shameful.

Tom Widner: Thanks for coming.

Page last reviewed: November 06, 2018
Page last updated: November 06, 2018
Content source: Centers for Disease Control and Prevention
(https://web.archive.org/web/20230207112014/https://www.cdc.gov/)