General

June 2, 2004

Thomas Widner, C.H.P., C.I.H.
Principal Scientist
ChemRisk, Inc.
100 Spear Street, Suite 525
San Francisco, CA 94105-1524

Re: Comments on the draft Interim Report of the Los Alamos Historical Document Retrieval and Assessment (LAHDRA) Project, dated March 21, 2004.

Dear Mr. Widner,

First, we extend our gratitude to ChemRisk, ENSR and the Centers for Disease Control and Prevention (CDC) for their dedication to preserving the LAHDRA despite obstacles presented by budget restraints and LANL cooperation. Also, we appreciate the dedication of ChemRisk, ENSR and CDC to stakeholder involvement in this project. We believe that the LAHDRA is integral to a thorough understanding of the effects of Los Alamos National Laboratory (LANL) operations on human health and safety.

Further, the LAHDRA is the first comprehensive report of LANL's historical off-site emissions, which is an important step towards transparency regarding the effects of LANL operations on the environment and public health. We compliment the LAHDRA team on producing a very thorough draft report and look forward to future versions. We fully support the uninterrupted continuation of the LAHDRA project.

We request that the following version report include a section detailing the findings of the LAHDRA regarding biota sampling at LANL and its potential off-site effects. We understand that more than 30 years of biota sampling have been compiled by LANL and we know that the results of this sampling are included in Environmental Surveillance Reports.

Negotiations will soon begin to discuss the contract for management of LANL. We request that CDC take steps to ensure now that documents that have yet to be accessed by the LAHDRA are not destroyed or removed from LANL property during the contract process or afterwards. We know that many documents were destroyed at the Idaho National Engineering and Environmental Laboratory during this type of process. Furthermore, we will work to ensure that the LAHDRA is a priority for any new manager at the LANL site.

We request a copy of the electronic database that has been produced as a result of the LAHDRA. We would appreciate a copy of the database and all accompanying PDFs on 10 CDs. These can be sent to Concerned Citizens for Nuclear Safety, 107 Cienega, Santa Fe, NM 87501, at your earliest convenience.

We make the following specific comments regarding the Draft Interim Report of the LAHDRA. These comments, although specific, are intended to make this very technical document more accessible to the layperson.

1. This version of the report does not include a specific report number to facilitate reference to this version of the report (for example, the previous version of the report was entitled "Version 2G"). We request that this report be assigned a version number to facilitate future reference in the series of LAHDRA reports.

2. Page i: Prior to the Table of Contents, please include a list of acronyms that are used throughout the report. Further, please include a complete index following the Appendices at the end of the report.

3. Page x: The report indicates that radioactive lanthanum has been subjected to a dose reconstruction by LANL personnel, including source term evaluation. The following version report should include a review of this dose reconstruction and source term evaluation.

4. Page xi: Although the Priority Indices of radionuclides included in the report do not account for decay of radionuclides, would the resulting dose reconstruction account for decay?

5. Page xii: The report states, "The results indicate that, if the release was attributed to the DP Site, an average of 60 curies and a median of 12 curies were obtained with a geometric deviation (factor of uncertainty) of 9." Please explain this statement in laypersons' terms.

6. Page 6: We support a complete tabulation of chemicals used at the Technical Areas of LANL. We request that such a tabulation be included in the following version of the report.

7. Page 7: Please relate the footnotes in Table 1 to their accompanying explanations.

8. Page 14: We request clerical verification of the results of the optical character recognition process and translation of any errors found in the documents in order to ensure accuracy within the following versions of the report.

9. Page 16: The report indicates that a listing and an overview discussion of the nature of the predominant release events that could have resulted in public exposure will be added to the interim report. We strongly support such an addition.

10. Page 18: The report states, "Interviews of current and retired workers and area residents were conducted by the LAHDRA team to assist in the identification and description of operations possibly associated with off-site releases...." The portion of the report that details the public meetings held in association with the LAHDRA features a guest speaker, Peter Malmgren (page 260), who has undertaken a similar interview project and offered to cooperate with CDC on their interview processes. However, Mr. Malmgren's project is not mentioned in the section of the report

discussing interviews beginning on page 18. What is the status of Mr. Malmgren's work and, if it has been completed, can it be incorporated into the next version of the report?

11. Page 25: The report states, "At the closeout of this project, 232 Category 1 documents had not been released by LANL." Does this mean that at the closeout of *this phase* of the project these documents had not been released? Will CDC attempt to access these documents under the next phase of the project? How will CDC ensure that these 232 documents are included in the next version of the database and accompanying report?

12. Page 29: Considering that the LANL Central Records Center is continually adding new documents that may support the work of the CDC, will the CDC revisit the Records Center before the completion of the LAHDRA despite the December 31, 1999 cutoff date?

13. Page 31: Please explain the nature of "Sensitive Compartmented Information."

14. Page 31: The report states, "In addition, access to classified reports issued by any of the following entities with publication dates after 1962 has been denied since March 2001: LANL, Lawrence Livermore National Laboratory, Sandia National Laboratory, the Defense Nuclear Agency and its predecessor and successor agencies, and DOE Albuquerque Area Office." LANL released classified documents produced prior to 1962; why are documents produced after 1962 restricted? Classified reports published by these entities are likely to contain some information that would be useful to the LAHDRA. Is there an appeal process established to facilitate access to these classified documents or will they be released in the next phase?

15. Page 32: Please defines the term "owner" and specify how it is being used in this report. Specifically, are documents produced by LANL property of DOE or the University of California, LANL's managing contractor? Are documents produced by contractors other than the University property of DOE?

16. Page 35: There appears to be a discrepancy between Table 8 and the information presented under the heading "Satellite ES & H Records Centers" beginning on page 36. For example, Table 8 indicates that ESH-18 does not maintain a satellite records collection. However, it is included in the list of satellite ESH records centers on page 37.

17. Page 37: The report states, "The ESH-6 group (nuclear criticality safety) maintains records at their facilities at TA-18. These records have not yet been evaluated by the project due to classification and need-to-know issues." The following version of the report should specify what these issues are and how they may be resolved.

We are particularly concerned because TA-18 is scheduled to undergo major changes in 2004 and it is imperative that CDC access the ESH documents at TA-18 before these changes occur in order to prevent further hindrance of records access.

18. Page 44: The report states, "A memorandum from DOE Headquarters affirming the project team's 'need to know' was signed by General John Gordon on September 17,

2000 and was distributed to appropriate personnel throughout LANL and DOE Albuquerque." We request that a copy of this memorandum, or a summary thereof, be included in this report.

19. Page 45: The report states, "When faced with the prospect of screening the 'LA' reports in the Report Collection that were issued after 1962, LANL personnel requested that we review the reports by title alone and appeal to DOE if documents had to be reviewed beyond their titles." Has the prescreening of documents been facilitated by the dedication of LANL employees to the LAHDRA project? Is CDC still required to review documents by title alone because of difficulties related to prescreening?

20. Page 46: The report states, "At a meeting of LANL personnel on November 28, 2001, those in attendance decided that, 'LANL cannot give access based on need-to-know for non-LANL documents. Documents belonging to other DOE contractors, other government agencies, private companies or other governments will require CDC/DOE to contact those entities and provide LANL with written need-to-know acknowledgment and permission to grant access." We understand that publications issued by contractors to DOE are property of DOE, as outlined in the Freedom of Information Act case of Los Alamos Study Group v. DOE, (D.N.M.) Civ. No. 97-1412 DJS/WWD. Therefore, it would seem that DOE would be responsible for granting "need-to-know" acknowledgment for such documents. Is this not the case? Why not? Is there an appeal process in place for such documents if it is the case?

21. Page 46: The report states, "Apparently over half of the [United Kingdom] documents were withheld from CDC review because someone at LANL judged that they contained deniable category material." Please identify the individual responsible for this decision. Can CDC appeal this decision?

22. Page 47: The report lists the "Prerequisites for Continued Work at Los Alamos Outlined by CDC." These prerequisites include several key issues that must be successfully resolved with DOE and LANL staff, including "(1) clear establishment of CDC's 'need-to-know,' (2) establishment of workable procedures for CDC to access documents held by LANL but not originated at LANL, (3) implementation of a consistent, usable appeal process for when CDC is denied access to documents, and (4) establishment of an ability for appropriately-cleared CDC staff to review documents withheld to CDC's contractors."

The report should include a detailed section of how these issues have been resolved, including the "need-to-know" procedures for documents produced outside of LANL. The report should also include a detailed outline of the appeals process that has been established.

23. Page 48: The report states that LANL has hired a contractor, PMTech, to address the backlog of documents to be released to CDC. Will this review continue during the renegotiations of the CDC contract, or has LANL's work on the project been postponed as a result of the renegotiations?

24. Page 51: The report states, "Since LANL environmental reports are accepted to be correct; in this era the compilation data was used directly and raw data has not been

generally requested." We question whether this assumption is prudent because without the use of raw data it is frequently difficult to assure the quality of LANL's reports of emissions. For example, in the 2002 Environmental Surveillance Report, LANL has provided composite summaries of airborne uranium-234 concentrations for 2002 (pages 62 and 63). There is a difference of a factor of five between the mean and the maximum concentrations. Without the raw data, it is difficult to determine why this large difference exists.

25. Page 52: The report includes a very helpful explanation of the Priority Index for liquid-borne radionuclides (page 70), including the formula CDC uses to establish the Priority Index and a table of the Maximum Permissible Concentrations for radionuclides of concern as established by 10 CFR 20, Appendix B. However, such a useful explanation is not included for airborne releases. We request that such an explanation be included in the section of the report that discusses the Priority Index for airborne releases.

Further, please provide additional information on 10 CFR 20, including its source, description and specific requirements, for the benefit of the general public.

26. Page 55: Please include a units of measurement table in the report in order that less technically savvy readers may clearly understand the units of radiation measurement that are being used by the CDC.

27. Page 60: The report indicates that plutonium release estimates are not available for D Building, or that none have been located. We request that CDC make a concerted effort to locate such estimates and include them in the report.

28. Page 62: The report states that many Document Summary Forms have been included by CDC detailing additional pre-1967 tritium releases at LANL although the documents relating to those forms have not been released. We encourage CDC to continue to pursue these documents and incorporate analysis in the following version of the report.

29. Page 62: The report states, "Radioactive lanthanum is not a high priority radionuclide as compared to nuclides, especially since many other of the radionuclides are believed to be understated." Please clarify this statement. Many other radionuclides are understated in what regard? Does this mean that the Priority Indices of other radionuclide have been understated?

30. Page 62: We request an analysis of secondary activation of Mixed Activation Products.

31. Page 64: In Figure 10, please include a unit of measurement for the Priority Indices along the Y-axis. Also, please include a description for operations during Phase IV, 1986 to present.

32. Page 65: Please define the following terms: "Overall Release Fraction," "Airborne Release Fraction" and "Respirable Release Fraction."

33. Page 66: Why is the Overall Release Fraction (ORF) of 0.001 for uranium judged to be more appropriate for these calculations? Please include a calculation for the Priority Index for uranium based on LANL's asserted ORF figure of 0.1. We also request that the Priority Index for beryllium be recalculated to include all parameters.

34. Page 70: The report states that no data for liquid-borne radionuclide releases for the years 1974, 1975 and 1976 has been found, but, "Given the releases previous to and after that period, it is highly unlikely that releases during these years would significantly change any of the conclusions of this prioritization if they were found." How did CDC come to this conclusion? How are the releases previous to and after that period indicative of potential releases during that period, considering that releases previous to and after that period vary so greatly?

Further, the Priority Indices for gross alpha and beta were steadily increasing in the years immediately before those of the missing data (see Table 15). We believe that CDC cannot make such a broad statement about the missing years of data without supporting documentation.

35. Page 70: The report states that the most restrictive Maximum Permissible Concentration (MPC) for plutonium is that of plutonium-239, rather than plutonium-238. Why, then, are the MPC levels for plutonium-238 and plutonium-239 identical in Table 18?

36. Page 70: The report states that the MPC for strontium-89 is more restrictive than that of strontium-90. However, in Table 18, the MPC for strontium-90 is more restrictive by nearly an order of magnitude. Why is this case?

37. Page 72: Under the heading, "Comments on Issues," the report states, "In later years, when plutonium or strontium radionuclides were not listed by nuclide separately, values were entered into the database as [plutonium-239] and [strontium-90], respectively." This statement is unclear when considering that Table 19 indicates that strontium-89 and strontium-90 were listed separately from 1945 to 1996 almost consistently and plutonium-238 and plutonium 239 were listed separately from 1972 to 1996 almost consistently. Please clarify this inconsistency.

35. Page 72: The report states, "However, it should be noted that, in general, liquid-borne releases appear to warrant lower priority than airborne releases, and pathways for public exposure from these liquid releases appear to have not been as complete as those for airborne releases." The report should explain more clearly why this is the case.

36. Page 72: Please provide a summary of the compilation of gross gamma prepared by a LAHDRA team member and include gross gamma in Table 19, where possible.

37. Page 76: In Figure 15, Priority Indices for gross alpha and gross beta do not continue past 1973. Where are these indices and will they be included in the following versions.

38. Page 78: Please explain in laypersons' terms the plutonium-to-cesium ratios and how they are used to judge impacted soil sample locations. Also, please include the mathematical formulas that are used in this section.

39. Page 79: Please include a laypersons' explanation of the term "log-normally cumulative frequency distribution" and "log-normally distributed."

40. Page 81: The report states that this method for using soil as an indicator of historic plutonium releases, when validated, could be extended to include other contaminants of concern for which monitoring data are not available for key periods of time, such as beryllium. We strongly encourage using this method for other contaminants of concern, particularly beryllium.

41. Page 81: The report states, "If one sums a fraction of D Building results with that of DP Site adjusted for 100% release, the curve would lie midway between those shown in Figure 17." We request that this curve be included in Figure 17 and its significance be more thoroughly explored in the report.

42. Page 82: In the section, "Independent Analysis by Another Party," the report states, "Dr. Schader suggested that the difference between his value of 4 curies and the current calculated value of 100 curies (at the 95 percentile) was due to the LAHDRA team's use of data at great distances (30 km or more) from the release points and the choice of the background level above which soil results were attributed to LANL operations." We request a more thorough explanation of Dr. Schrader's arguments against the finding of the LAHDRA and his subsequent agreement with those findings. Also, please include a map of locations of the soil samples that contributed to this finding. Further, please include Dr. Schrader's work in the list of references at the end of this section.

43. Page 83: We reiterate our support of using this method of using soil as an indicator of historic plutonium releases to address other contaminants of concern, particularly beryllium.

44. Page 84: Please include a description of the human radiation experiments documented by McInroy, et al., in 1979 in the introduction of the section, "Analysis of Measurements of Plutonium in Body Tissues of Los Alamos Area Residents."

45. Page 84: Please include all mathematical formulas used throughout the section, "Analysis of Measurements of Plutonium in Body Tissues of Los Alamos Area Residents."

46. Page 85: Please describe the ICRP 30 model and its origins.

47. Page 86: The report states, "Values for plutonium-238 are similar to those for plutonium-239." We understand that plutonium-238 has a substantially higher activity than plutonium-239. The report should justify this statement considering this information.

48. Page 87: The report also states, "Each of the sites sampled by LANL consisted of a square area 9 meters on each side, with soil collected from each corner and the center." The report also states that these soil samples were combined to form a composite. Please explain why this method was used.

49. Page 89: The report indicates that in the analysis ratios of plutonium to vertebrae to liver in the autopsy reports, one data point approached a ratio of 200, which is not included in Figure 20. Please include this data point in the figure.

50. Page 94: In Table 23, please include a unit of measurement for the columns labeled "D Dist" and "DP Dist." Also, please explain the meaning of the columns "D Bearing" and "DP Bearing."

51. Page 95: Please include coordinates and scale for Figure 21: Autopsy Address Overview.

52. Page 97: Please include all mathematical formulas used throughout the section, "Prioritization of Chemical Releases."

53. Page 106: The report references draft CEARP documents. Please explain what those documents are and include CEARP in the list of acronyms.

54. Page 107: The report includes an account of a "very serious" mercury spill at the Clementine site on December 31, 1948. It states, "This report also mentions that routine monitoring for mercury vapor had been going on at the Clementine site prior to this incident." Has the LAHDRA found any evidence that sampling for mercury vapor occurred after the "very serious" accident in 1948, as well as the accident in 1951? If so, where is this information? If this information is available, please include it in the following version of the report.

55. Page 148: The report states that 2% of beryllium becomes aerosolized. Does this mean that 2% of *all* beryllium becomes aerosolized? If so, why is that the case?

56. Page 148: The report states, "Possible explanations suggested for this discrepancy are that soil sampling is not representative of actual onsite contamination...." Please elaborate on this statement.

57. Page 150: The report states that beryllium sampling was performed by the LANL Environmental Surveillance Program in the early 1970s and resumed in the 1990s. Does this mean that there was no air sampling for beryllium from the early 1970s to the 1990s? If so, why was sampling discontinued during this time?

58. Page 160: What is a milliampere-hour? Can this unit of measurement be made more accessible to the layperson?

59. Page 173: In Table I-1, there is no sampling data for uranium-234, uranium-235 and uranium-238. Is this data encompassed by the "Total Uranium" data? If not, how does LANL account for this missing data?

Thank you for your careful consideration of our comments. Should you have any questions or comments, please contact Joni Arends, of Concerned Citizens for Nuclear Safety, by email at jarends@nuclearactive.org or by telephone at (505) 986-1973.

Sincerely,

Joni Arends, Executive Director
Concerned Citizens for Nuclear Safety

Coila Ash, Executive Director
Creative Commotion

Sr. Joan Brown, O.S.F.
Ecology Ministry
Social Justice Office
Catholic Archdiocese of Santa Fe

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