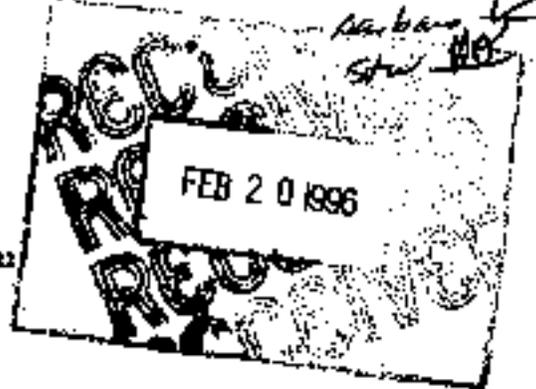




UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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FEB 14 1996



Mr. Benito Garcia, Chief
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
2044A Galisteo Street
Santa Fe, NM 87505

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed its review of the proposed risk-based corrective action process at Los Alamos and Sandia National Laboratories. This process is described in the October 16, 1995, document entitled, "Risk-Based Corrective Action Process, the Environmental Restoration Programs at Los Alamos and Sandia National Laboratories" (copy attached). EPA comments on this document are attached for your review and approval. EPA recommends that these comments be issued jointly to Los Alamos and Sandia and that a written response be requested from each laboratory.

If you should have any questions or require additional information, please contact Ms. Nancy Morlock at (214) 665-6650 or Ms. Barbara Driscoll at (214) 665-7441.

Sincerely yours,

WR Morlock

for David Neleigh, Chief
New Mexico - Federal Facilities

Enclosure

MSWA LANL C/M/S/196

RE

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**EPA Comments on Risk-Based Corrective Action Document
submitted by Los Alamos and Sandia National Laboratories**

Los Alamos National Laboratory:

- 1) Page 2: The framework for ER program decisions is only appropriate when evaluating sites from a risk to human standpoint. Prior to proposing no further action (NFA) at a site, environmental risks must also be assessed.
- 2) Page 3; Number 1: NMED should be added to the sentence under which additional criteria for proposing NFA are agreed upon. The first two criteria presented must occur concurrently prior to proposing NFA.
- 3) Page 4; Screening Assumptions: If dose is used to screen out radioactive constituents from chemicals of concern, carcinogenic risk presented by the screening dose should be calculated.
- 4) Page 5: An action level for PCBs of 1 ppm was not agreed to. This value represents an industrial scenario and is not consistent with all other SALS which are based on a residential exposure scenario.
- 5) Page 5: Two different target dose levels for radionuclide action levels are proposed (i.e. 10 mrem/yr at LANL, and 15 mrem/yr at SNL). The target dose for both facilities should be the same and justification for the dose selected should be provided.
- 6) Page 6: Cancer risk due to radionuclide concentrations should be calculated along with dose. Additivity of risk should be considered across the carcinogenic and radionuclide categories. Additivity of multiple chemicals and use of the detection limit in screening action level comparisons should be corrected to reflect changes presented in the LANL memo "Follow-up on issues from joint risk assessment workshop".
- 7) Page 7: The following points should be added under "Accelerated Clean Up (EC/VCA/VCM): 1) extent of contamination is known; 2) fate and transport properties of the chemicals of concern have been considered, and 3) a contingency plan is in place denoting conditions under which EC/VCA/VCM will be terminated.
- 8) Page 8: Ecological risk screening should not consider only the presence of threatened or endangered species and sensitive habitats. Assessment and measurement endpoints should be approved by NMED and EPA prior to conducting the ecological risk screening.

- 9) Page 9: A proposed methodology for defining ecological exposure units can be found in "A Synoptic Approach to Cumulative Impact Assessment" (EPA/600/R-92/167) may be of aid in defining ecozones.
- 10) Page 10: Any contaminant transport model used will need to be submitted along with model inputs, assumptions, uncertainties and other any information necessary to evaluate the model.
- 11) Page A-1: SWMU boundaries based on human health risk and risk to the environment should be developed separately. In boxes 3 and 4 the ecological screening assessment and human health risk assessment will need to be addressed for separate SWMU's which may overlap. Accelerated cleanup based on human health concerns should take ecological damage into account prior to conducting remediation activities.
- 12) Page A-2 and B-1: The method for determining eco-SALs must be approved if they are to be used to screen chemicals of potential concern.
- 13) Page A-8; Comment 5: The action to be taken when the data indicate the remedy is not going to work should be described. Who will be notified and where does an out put you back into the corrective action process?
- 14) Page A-10; Comment 1: Chemical fate and transport properties should also be considered in this step. Comment 2: A time frame should be generated as part of an EC plan.
- 15) Page C-1: In Table C-1 some of the default exposure parameters are presented for both child and adult (e.g. body weight, soil ingestion) while others are not (e.g. water ingestion, skin surface area). All default parameters used to calculate exposure risks should be provided.
- 16) Tables C-1 and C-2: References have been cited in these tables, however, no reference section has been included in this document.
- 17) Page C-4: Please define what is meant by "r" for inhalation rate and exposure duration. Also, I did not note any value in this table for exposure frequency.

Sandia National Laboratories:

- 18) See comment #1 above.
- 19) See comment #2 above.

- 20) SNL/NM is in the process of finalizing a facility-wide background study. This effort should be mentioned in the document.
- 21) Page 5: Subsurface soil action levels should incorporate the analysis of potential impacts to ground water.
- 22) Page 5: The use of probabilistic risk assessment to establish action levels for radionuclides is not recommended by EPA. Please clarify intent of statement.
- 23) See comment #3 above.
- 24) See comment #5 above.
- 25) See comment #6 above.
- 26) Page 5: It should be noted that it is EPA's RCRA program policy that constituent's of concern are identified based on the highest measured value. The use of composite samples or sample averages can only be relied on after the completion of a full characterization of site contamination and for establishing point exposure concentrations in the baseline risk assessment.
- 27) Page 6: Please clarify the intent of the mixture rule concept present in the SNL/NM block at the bottom of the page.
- 28) Page 8: Ecological risk assessment activities should be based on all available guidance. The ecological risk screening process generally incorporates a more extensive effort than is involved in an environmental assessment. It is EPA's understanding that SNL/NM is fully evaluating this issue. EPA looks forward to discussing and generating a mutually-agreeable approach to address potential ecological risk.
- 29) Page 10: It is EPA's policy to require the quantitation of risk utilizing the Reasonable Maximum Exposure (RME) approach in conjunction with the proposed probabilistic risk assessment approach. Additionally, all references utilized to determine the exposure parameters in the probabilistic risk assessment should be submitted for EPA's review and concurrence, as per the verbal agreement between EPA and SNL/NM.
- 30) Page 12: Preliminary remediation goals should be based on an excess cancer risk level of 10^{-6} and a

noncarcinogenic hazard index value of 1 (with individual noncarcinogens at a Hazard Quotient of 0.1 to account for the presence of multiple of noncarcinogens). Preliminary remediation goals at the full range of 10^{-4} to 10^{-6} can be presented so as long as the risk level of 10^{-5} is represented.

31) Page A-12: See comment #29.