

Appendix Q. Comments on EPA's Hazard Risk Scoring (HRS) for SSFL

The following letter contains comments on EPA's HRS for ETEC. The HRS evaluation is generally done when a site is being considered for Superfund status. The letter was written by Dr. Yoram Cohen to John Beach of EPA Region 9.

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MEMORANDUM

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To: John Beach
Environmental Scientist
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75 Hawthorne St.
San Francisco, CA 94105

From: Dr. Yoram Cohen
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Re: SSFL – EPA HRS Report

We have reviewed EPA's Site Inspection Report by ETEC and the HRS Score Sheets. We have some concerns regarding the basis on which certain conclusions were made as detailed below.

1. The HRS report is based exclusively on radionuclides. We believe it is inappropriate to assess an HRS ranking of this site without simultaneous consideration of all contamination. Radionuclide and chemical contamination should be evaluated regardless of whose jurisdiction the chemical contamination is under.
2. It appears that some waste characteristics (e.g., decay products) and bioaccumulation potential) may have not been used in this assessment as mandated under SARA, 1986, Section 105 (C) (1).
3. Groundwater beneath the site has historically been used for livestock. Due to the bio-accumulative nature of compounds detected north of ETEC we believe that not all pathways to human exposure were considered. In fact, the EPA's HRS protocol stipulates that effects through the food chain (livestock watering and food crop irrigation) be given adequate consideration (SARA, 1986, Section 105 (C) (1)).

4. The second conclusion was that no offsite contamination of air, soil and water was identified. This conclusion appears to have been based on three reports used in the assessment. However, there are two concerns with this statement:
 - a. The accuracy and thoroughness of the monitoring on which these conclusions were based is in question. It is well known that the lack of data or uncertainty in inputs tends to skew HRS results towards lower values (Hanes and Warwick, 1991).
 - b. No air monitoring was conducted, nor was potential air contamination considered. There is mention of continuous air monitoring for radioactivity along the perimeter of Area IV, however, no data were shown or discussed.
 - c. Potential emissions of subsurface organic solvents were not assessed.
5. The quantitative basis for the decision (the HRS scores for individual pathways) was not presented in the report that we received. Therefore, it is inappropriate to accept the conclusions of the report at face value.
6. It was concluded that cesium-137 and strontium-90 were detected at concentrations “significantly above background”. These samples were taken from the former Rocketdyne Employee shooting range and the orange groves at Santa Monica Mountains Conservancy. Potential existed for employee-transport of contamination (as suggested by detection at the shooting range) and for indirect human exposure through the food chain (orange grove). It is also noted that sampling was limited (only four sites were sampled). Given the above, the HRS report should have addressed such information. Considering that the re-sampling effort was not conducted until 2 years later and that at that time the only radionuclide monitored for was tritium, there are also concerns regarding the potential for continued exposure due to insufficient follow-up.
7. The 1998 Bell Canyon surface water study is deficient since it relied on backgrounds near potential air dispersion points between SSFL and Bell Canyon. If the object was to detect mobility of contaminants from SSFL to Bell Canyon, backgrounds should not have been taken between these areas.
8. The 1992 BBI surface water sampling study was also deficient due to lack of water sampling downstream from the SRE and RD-51 watershed (McClaren-Hart, '93). Indeed, radiation was found north of these areas (significantly above background) in '92 soil samples from (McClaren-Hart, '93).
 - a. Cs-137: 0.23 and 0.34 pCi/g at BB-19 north of SRE watershed;
 - b. Plu-138: 0.22 pCi/g at BB-15 north of RD-51 watershed.

The above monitoring study is also subject to criticism for the lack of surface water samples north of NPDES outfalls 005-007 (BB-18) and the area of Meier Creek downstream of these areas.

9. It is customary to consider future threats associated with contamination sites. However, the future use of the SFFL site was not considered.
10. Monitoring protocols used in the studies on which the HRS assessment relied were found to be deficient. EPA, Las Vegas identified problems with the sampling techniques used in

the Area IV characterization survey. Specific problems were related to survey instrument calibration procedure, use of large grid spacing, and filtration of water samples, all of which could have resulted in under-reporting and inaccuracies in detection of contamination.

The above comments reflect our concern that the EPA HRS analysis, as reflected in the report that we reviewed, is incomplete. A more complete HRS analysis is needed with considerations for re-sampling areas using standard EPA protocols and methods. Other radionuclides should be included in grid-sampled soil and water monitoring. Moreover, chemical contamination needs to be considered as well potential future site use.