RADIOLOGIC HEALTH BRANCH
CDPH RADIOLOGICAL ASSESSMENT UNIT

Date: May 30, 2013

To: Roger Lupo

From: Ted Ward

Re: Review of Documents for SSFL Area IV Building 4009

As requested I have reviewed the Radiological Surveys, Memos, and Reports (see footnotes) for Building 4009 in Area IV of the Santa Susana Field Laboratory (SSFL).

My review included: (1) Decommissioning radiological surveys from Boeing (1988)[1] and (1990)[2]. (2) Release criteria for radiological facilities at SSFL from USNRC[3], and Boeing[4]. (3) Historical documentation of Building 4009 Sapere Consulting, Inc.[5,6]. (4) Final status report from Boeing[7]. (5) Memos and letter from DTSC[8] and DHS[9].

Upon completion of my review of the above documents I have reached the following conclusions:

- Historical data provided by Boeing[2,7] and Sapere Consulting, Inc[6] was informative in the use and possible radiological issues of Building 4009.
- The Radiological survey techniques used by Boeing[1,2] were extensive in both the reactor areas and support room. Random grid points within the building were selected and surveyed. Specific areas of concern (bench tops, cabinets, etc.) were also selected and surveyed for removable contamination. Surveys were performed in the building, on the roof, and the surrounding area. Radiological surveys included concrete[8], soil[2], sludge samples from drains[1], direct and removable contamination surveys (Alpha and Beta)[1,2] and gamma dose rates[2] at 1 meter above the surface. Release surveys were also performed by DHS[6,9] in 1998 for the entire building.
- The final results of the radiological surveys were well within the limits established by the NRC[4] and Boeing[5]. No survey points were above the limits at the time of the initial survey and gamma exposure rates were at or near background levels.
- Recommend no further radiological surveys for Building 4009 based on:
    - The final direct and removable contamination survey results[1,2] are well below the established limits[4,5].
    - Soil[2] and cement core sample results[8] from the reactor pit of the OMR showed only naturally occurring radionuclides.
    - The gamma dose rate surveys[2] are at or near background levels for the Santa Susana Field Laboratory area.
    - Radiological material has been removed from the building and shipped as radiological waste as stated in Boeing's final report[7].
    - Any further material will be disposed of in a class 1 disposal site as stated in Boeing's final report[7].

Ted Ward
CDPH-RHB-RAU

[1] "Radiological Survey of Building T009", Survey Number GEN-ZR-0014, Boeing, 1988
[2] "Final Decontamination and Radiological Survey of Portions of Building T009", Survey N704SRR990032, Boeing, 1990.
[3] USNRC Regulatory Guide 1.86, "Termination of Operating Licenses for Nuclear Reactors" June 1974
[4] Boeing Document, N001SSR140131, "Approved Sitewide Release Criteria for Remediation of Radiological Facilities at the SSFL", December, 1998.
[5] Historical Site Assessment of Area IV, Santa Susana Field Laboratory, Ventura County, California, Volume I, Sapere Consulting, Inc., May, 2005
[6] Historical Site Assessment of Area IV, Santa Susana Field Laboratory, Ventura County, California, Volume II, Group CC, Sapere Consulting, Inc., May, 2005
[7] 4009 Regulatory Release and Decommissioned Material Disposal, March 5, 2013
[8] E-mail from Paul Baldenweg to Steve Hsu dated March 9, 1998. In RHB "G" drive under Projects/SSFL Boeing, Rocketdyne, SSFL area IV/T009/e mail.
[9] Letter from David Wesley (DHS) to James Barnes (Boeing). Untitled. License Amendment 102. Release of Building 4009 for Unrestricted Use. January 20, 1999