APPENDIX F

CRITERIA FOR INPUTS

FOR RISK ASSESSMENT

USING SCREENING AIR DISPERSION MODELING

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Criteria For Inputs for Risk Assessment Using Screening Air Dispersion Modeling

(A) The emissions must represent all listed substances emitted from the facility. Emission estimates must be health-protective and approved by the district, and the assessment must take into account both the highest actual emissions and the facility's potential to emit, including use of the highest levels enforceable under the facility's permit(s), if the process(es) are subject to permits.

(B) Source characterization for the facility for air dispersion modeling (including but not limited to stack parameters, choice of volume or area source configurations, building downwash, raincaps, position of release point(s) within the facility) must be health protective. The most health-protective characterization which applies to the actual conditions at the facility must be chosen for the modeling analysis.

(C) Air dispersion modeling must use worst-case meteorological conditions and the most health-protective parameters applicable to the facility. Generic, default meteorological data, not site-specific data, should be used. A matrix representing all possible combinations of wind speed and stability classes should be used. The combination which results in the worst-case concentration should be selected. Ambient air temperature and mixing height must represent worst-case conditions. The rural or urban dispersion coefficients should represent the worst case which is applicable to the actual facility site. Some acceptable meteorological conditions are the "full meteorology" option in the U.S. Environmental Protection Agency (U.S. EPA) SCREEN3 (96043) model, February 1996, which is incorporated by reference herein.

(D) The most appropriate computer models must be used, including the most recent version, with all the correct switches (including but not limited to switches for downwash, rural vs. urban, and complex vs. flat terrain). The district must approve switches used in the model and ensure that the most health-conservative estimates of dose are obtained. Some acceptable models are the U.S. EPA SCREEN3 (96043) model, February 1996, ~~and~~ the U.S. EPA ISC3 (95250) model, September 1995, and AERMOD, November 2005, both of which are incorporated by reference herein.

(E) Other procedures must use methods in HARP or available guidelines as follows:

(1) The potential health impact must be calculated for the point of maximum impact (PMI) or maximum off-site concentration.

(2) The potential non-cancer acute inhalation total hazard index (H.I.) must be calculated for all substances for each toxicological endpoint.

(3) The potential non-cancer chronic inhalation hazard index (H.I.) must be calculated for all substances for each toxicological endpoint.

(4) The potential non-cancer chronic non-inhalation (ingestion and dermal exposure) hazard index (H.I.) must be calculated for all applicable substances for each toxicological endpoint.

(5) The non-cancer chronic inhalation and non-inhalation hazard indices (H.I.s) must be added for each toxicological endpoint to determine the total hazard index (total H.I.) for each endpoint.

(6) The total potential carcinogenic impact from inhalation exposure and non-inhalation exposure pathways (where applicable for the substance) must be calculated. At a minimum, multipathway exposure must include the inhalation, soil ingestion, and dermal exposure, and mother's milk pathways; exposure through food ingestion including vegetables/fruits, meat, milk, and fish, and exposure through consumption of contaminated surface water should be included if those pathways exist at a specific site.

(7) Health effects values used for cancer and non-cancer health effects are subject to the approval by the Office of Environmental Health Hazard Assessment (OEHHA). Health effects values used for cancer risk assessment are those available in the California Environmental Protection Agency (Cal/EPA), Standards and Criteria Working Group document entitled "California Cancer Factors: Update", 1994, available through the Office of Environmental Health Hazard Assessment, and incorporated by reference herein. Some health effects values for assessing non-cancer health impacts are available in the ~~CAPCOA~~ OEHHA "Air Toxics 'Hot Spots' ~~Program Revised 1992~~ Risk Assessment Guidelines, ~~October~~ October ~~1993~~ 2003,", including the use of health values from the Consolidated Table of OEHHA / ARB approved risk assessment health values (April 2005), which ~~is~~ are incorporated by reference herein. ~~Other health effects values for non-cancer risk assessment are available on the United States Environmental Protection Agency, Integrated Risk Information System (IRIS) database (Software Version 1.0, 1992), 1996. The CAPCOA Risk Assessment Guidelines will be superseded by OEHHA Air Toxics Hot Spots Risk Assessment.~~

(8) Screening health risk assessment tables that are consistent with OEHHA Risk Assessment methodologies may be used at district discretion. Some examples are provided here: http://www.arb.ca.gov/ab2588/ab2588.htm. In order to use the tables, the configuration of the diesel engine(s) must reflect what was used in the modeling analysis, including the requirement that the diesel engine have a vertical stack with no restrictions such as a rain cap.

~~(8)~~ (9) Any other assumptions, if needed, must be consistent with the procedures approved by OEHHA for preparing health risk assessments. ~~Some acceptable procedures are included in the California Air Pollution Control Officers Association (CAPCOA) "Air Toxics 'Hot Spots' Program Revised 1992 Risk Assessment Guidelines, October 1993", which in incorporated by reference herein.~~

(F) Stochastic modeling exercises are not acceptable as screening level risk assessments.