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1. Introduction

What is HARP?

The Hotspots Analysis and Reporting Program (HARP) is a tool that assists with the programmatic requirements of the Air Toxics “Hot Spots” Program. HARP is a computer software package that combines the tools of emission inventory database, facility prioritization, air dispersion modeling, and risk assessment analysis. All of these tools are tied to a single database allowing information to be shared and utilized.

Users of the HARP software should have a working knowledge of air dispersion modeling, the Air Resources Boards (ARB’s) Emission Inventory Criteria and Guidelines, and the risk assessment methods and procedures outlined in the Office of Environmental Health Hazard Assessment’s document *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA, 2003). This document is referred to throughout this manual as the “OEHHA Guidance Manual”.

HARP can be used by Air Pollution Control and Air Quality Management Districts (districts), facility operators, and other parties to manage and evaluate emissions inventory data and the potential health impacts associated these emissions. The use of HARP promotes statewide consistency, increases the efficiency of evaluating potential health impacts, and provides a cost-effective tool for developing facility health risk assessments.

The HARP software may be used to assess the potential health impacts from a single facility or multiple facilities in (close) proximity to each other, where a single meteorological data set is appropriate for all the included facilities. However, other applications may be appropriate depending on the user’s expertise and presence of adequate data.

Although designed to meet the programmatic requirements of the Hot Spots Program, the HARP software may be used for preparing risk assessments for other air related programs (e.g., air toxic control measure development, facility permitting applications). Therefore, each user of the HARP software should know the requirements of the regulation or program they are addressing before using the HARP software and reporting results.

1.2 What is the Air Toxics “Hot Spots” Program?

The Air Toxics “Hot Spots” Information and Assessment Act (AB 2588, 1987) was enacted in September 1987. Under this Act, stationary source facilities are required to report the types and quantities of certain substances their facilities routinely release into the air. Emissions of interest are those that result from the routine operation of a facility or that are predictable, including but not limited to continuous and intermittent releases and process upsets.

The goals of the Air Toxics “Hot Spots” Act are to collect emissions data, to identify facilities having localized impacts, to ascertain health risks, and to notify nearby residents of significant risks. In September 1992, the “Hot Spots” Act was amended by Senate Bill

(SB) 1731 to address the reduction of significant risks. The bill requires that owners of significant-risk facilities reduce their risks below the level of significance.

The Act requires that toxic air emissions from stationary source facilities be quantified and compiled into an inventory according to criteria and guidelines developed by the Air Resources Board (ARB), that each facility be prioritized to determine whether a risk assessment must be conducted, that the risk assessments be conducted according to methods developed by the Office of Environmental Health Hazard Assessment (OEHHA), that the public be notified of significant risks posed by nearby facilities, and that emissions which result in a significant risk be reduced. Since the amendment of the statute in 1992 by enactment of SB 1731, facilities that pose potentially significant health risks to the public are required to reduce their risks, thereby reducing the near-source exposure of Californians to toxic air pollutants. Owners of facilities found to pose significant risks by a district must prepare and implement risk reduction audits and plans within 6 months of the determination.

For more information on the Air Toxics “Hot Spots” Program, please visit ARB’s website at <http://www.arb.ca.gov/ab2588/ab2588.htm>.

1.3 What can HARP do?

HARP is an integrated software package that will:

- Create and manage facility emission inventory databases. These databases can be transmitted to the local air districts and the ARB;
- Calculate facility prioritization scores;
- Perform atmospheric dispersion analyses using screening or representative meteorology on one or multiple facilities using the U.S. Environmental Protection Agency’s atmospheric modeling software ISCST3 and BPIP;
- Calculate cancer and noncancer (acute and chronic) health impacts using the new risk assessment guidelines *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (August 2003)* developed by OEHHA;
- Use point estimates or data distributions of exposures to calculate inhalation and multipathway risks;
- Perform stochastic health risk analyses;
- Calculate potential health effects for individual receptors;
- Calculate population exposures;
- Calculate cumulative impacts for one or multiple facilities and one or multiple pollutants;
- Calculate potential health effects using a ground level concentration;
- Present the results as tabular reports and onscreen maps with contours. The results can be printed, added to word processing documents, or off-ramped to a Geographic Information Systems (GIS) program.

1.4 Tips on learning HARP

- How To Guides: The user manual contains walkthrough guides providing the basic steps for performing specific tasks, such as conducting a risk assessment. A set of these guides is available in Appendix A.
- Getting help in HARP: HARP contains a help file, which is essentially an electronic version of the user manual. The help file may be accessed through the *Help* menu option of HARP. Information may be looked up using the integrated table of contents, index, or search engine of the Help Viewer.
- Contacting ARB: If you need to contact the ARB for technical support, please send an email to help@arb.ca.gov or call the Stationary Source Division, Emission Assessment Branch at (916) 323-4327 and tell the receptionist you need assistance with HARP or by. You can also visit the ARB website at <http://www.arb.ca.gov/toxics/toxics.htm> for more information on HARP and the regulatory guidelines that it is based on.

1.5 How is the user manual organized?

This manual was designed as a step-by-step instructional guide for users of HARP. The manual consists of the following parts:

- Chapters 1 through 3 provide a basic understanding of HARP;
- Chapter 4 provides a tutorial of how to use HARP; and
- Chapters 5 through 11 provide detailed discussions on the functions available in HARP.