

this analysis, the value of 0.3 represents a hypothetical exposure that is well above what we would expect actual exposures to be. This is because chlorine is converted to HCl in the presence of sunlight within a few minutes. In addition, the hazard quotient of 0.3, which results from this exposure scenario is well below the safe value of 1. Thus, we have concluded that, even assuming that some chronic exposure to chlorine may occur, that none of the major sources included in this subcategory will have emissions of chlorine or HCl that exceed a level of exposure which is adequate to protect public health and the environment with an ample margin of safety.

Comment: Two commenters did not support EPA's use of the AEGL2 for use as a short-term exposure limit for chlorine and HCl. One commenter stated that the AEGL2 values would not sufficiently protect public health because they would allow emissions at levels that cause "discomfort," and according to the commenter, discomfort is an adverse health effect. The commenter also complained that EPA did not explain why it chose to use AEGL2 rather than AEGL1 or AEGL3. The commenter explained that although emissions from chlorine plants did not exceed AEGL2 values, the emissions may exceed AEGL1 values, and if they did, the proposed action would not meet the statutory requirements. Another commenter stated that AEGL limits are not appropriate for assessing daily human exposure scenarios because they were developed for emergency planning. The commenter recommended that EPA use the American Conference of Governmental Industrial Hygienists (ACGIH), which has a 1-hour Short Term Exposure Limit (STEL) similar to the AEGL1 value of 1 part per million (ppm) for chlorine and is used to protect against eye and mucous membrane irritation. The commenter stressed that EPA must use conservative benchmarks before concluding that an ample margin of safety exists.

Response: The AEGL values represent short-term threshold or ceiling exposure values intended for the protection of the general public, including susceptible or sensitive individuals, but not hypersusceptible or hypersensitive individuals. The AEGL values represent biological reference values for this defined human population and consist of three biological endpoints for each of four different exposure periods of 30 minutes, 1 hour, 4 hours, and 8 hrs.

As utilized in the proposed action, the AEGL2 1-hour concentrations for

chlorine and HCl are 5,800 $\mu\text{g}/\text{m}^3$ and 33,000 $\mu\text{g}/\text{m}^3$, respectively.

The 1-hour AEGL1 concentration for chlorine is 2,900 $\mu\text{g}/\text{m}^3$ and the corresponding value for HCl is 2,700 $\mu\text{g}/\text{m}^3$. The ACGIH short term exposure limit (STEL) for chlorine, which is 1 ppm is approximately equal to the AEGL1 value of 2,900 $\mu\text{g}/\text{m}^3$.

Although we stand by our original analysis, which used the AEGL2 level, we have incorporated the commenter's suggested use of the AEGL1 values (possibly with a safety factor) for determining whether an ample margin of safety has been obtained. Therefore, we simply compared the short term (1-hour average) modeling results from the original acute risk assessment to the AEGL1 values. These results were obtained by modeling the maximum allowable hourly emissions reported in the section 114 responses for each of the sources. For plants that did not report fugitive emissions, fugitive emissions were estimated using worst-case emission factors.

The maximum modeled 1-hour chlorine concentration for two of the three plants with the mercury cell chlor-alkali process is less than 5 percent of the AEGL1 (and ACGIH) value for chlorine. Further, the highest modeled concentration for any plant, 155 $\mu\text{g}/\text{m}^3$, is less than 6 percent of the AEGL1 values. The highest modeled 1-hour HCl concentration for any plant, 32 $\mu\text{g}/\text{m}^3$, is less than 2 percent of the AEGL1 value for HCl. Furthermore, all of the mercury cell chlor-alkali facilities also produce chlorine using a non-mercury chlorine production process (*i.e.*, diaphragm cells). The modeled emissions represent chlorine and HCl emissions from both processes. Therefore, the chlorine and HCl emissions from the mercury cell chlor-alkali process would be even lower.

Based on this comparison, we conclude that the chlorine and HCl emissions from mercury cell chlor-alkali production plants do not represent an unsafe level of acute exposure. We further maintain that, along with the chlorine exposure assessment, this proves that an ample margin of safety is provided with no additional control.

Comment: Two commenters supported EPA's method of selecting a risk assessment approach to meet the unique needs of the chlorine production industry. The commenters agreed that the risk assessment methodology should not be interpreted as a standardized approach that would set a precedent for how EPA will apply CAA section 112(d)(4) in future cases. Furthermore, the commenters stated that the degree of conservatism built into all aspects of the

risk assessment conducted for the chlorine production source category could vary greatly in future risk assessments for other source categories. The commenters stressed that the conservative assumptions made in the health effects assessment, emissions estimates, and exposure assessment were appropriate for the proposed action.

In contrast, one commenter stated that the risk assessment fell short of the Agency's prior practice. According to the commenter, whenever EPA has made determinations to regulate a specific pollutant based on health considerations (*e.g.*, national ambient air quality standards (NAAQS) for ozone and PM), the Agency evaluated health effects and exposure in great detail. The commenter contended that in this case, EPA appears to be content with "the bare and unsupported assumptions about what health levels are safe." The commenter argued that it was not appropriate for EPA to use a rigorous approach when setting standards and a more cursory approach when making a decision not to regulate.

Response: We disagree with the one commenter's characterization of the assessment that forms the basis for this decision, and we strongly dispute the characterization of the assessment as "bare and unsupported." As discussed elsewhere in this preamble, we maintain that the RfC and AEGL values used as benchmarks for this assessment are scientifically sound and appropriate. The emissions data and other inputs used for this analysis, which were provided by the industry and checked by our staff, are representative of the industry.

In this assessment, the predicted health effects estimated, using very conservative inputs and assumptions, were well below the recognized health thresholds. While our approach in this particular action may not be the same as an approach for a NAAQS, we believe that it has been certainly more than "cursory." We have looked at emissions and exposure data for each of the major sources in the subcategory. We have established hazard indices for chlorine and HCl for each major source in the subcategory. We performed a qualitative ecological assessment. Moreover, in response to comment received, we have revised our analyses and taken into account comments that we have received when performing these reassessments. We will base each risk assessment for this and future regulatory action on sound scientific principles.

Comment: In the proposed action, the risk assessment modeling was conducted by placing receptors at the