FINAL STATEMENT OF REASONS
22 CALIFORNIA CODE OF REGULATIONS

Section 12705: Specific Regulatory Levels Posing No Significant Risk

The Safe Drinking Water and Toxic Enforcement Act of 1986 (hereinafter the Act) prohibits a person in the course of doing business from knowingly and intentionally exposing any individual to a chemical that has been listed as known to the State to cause cancer or reproductive toxicity without first giving clear and reasonable warning to such individual (Health and Safety Code Section 25249.6). The Act also prohibits a business from knowingly discharging a listed chemical into water or onto or into land where such chemical passes or probably will pass into a source of drinking water (Health and Safety Code Section 25249.5).

For chemicals known to the state to cause cancer, an exemption is provided by the Act for exposures which the person can show to pose no significant risk (Health and Safety Code Sections 25249.10). A determination that a level of exposure poses no significant risk can be made utilizing existing regulations (Section 12701 to 12721, Title 22, California Code of Regulations). (Unless otherwise indicated, all section references are to Title 22, California Code of Regulations.)

Section 12701 describes alternative methods for making such a determination. One such method is through the application of the specific regulatory level established for the chemical in question in Section 12705. Section 12705 supersedes Section 12709 (Exposure to Trace Elements), Section 12711 (Levels Based on State or Federal Standards), and Section 12713 (Exposure to Food, Drugs, Cosmetics and Medical Devices).

Procedural Background

On May 29, 1992, the Office of Environmental Health Hazard Assessment (OEHHA) issued a notice of proposed rulemaking advising that the agency intends to establish, in Section 12705, "no significant risk levels" based on State or federal risk assessments and based on an "expedited" risk assessment method consistent with the procedures specified in Section 12703. This proposal would adopt, in Section 12705, the no significant risk levels which currently exist in subsection (a)(2) of Section 12711 (Levels Based on State or Federal Standards), and no significant risk levels for 140 chemicals derived using expedited risk assessments. The proposal includes provisions which would allow any interested party to request the lead agency to reconsider a level established based on a state or federal risk assessment or based on default risk assessments.

This proposal would also conform Section 12711 by deleting subsection (a)(2) and renumbering the remainder of the section.

Pursuant to such notice, on July 17, 1992, a public hearing was held to receive public comments on the proposed regulation. Seventeen pieces of correspondence and one oral comment were received.

By notice dated July 29, 1992, OEHHA made changes to the proposed regulation, added new documents to the rulemaking file, and provided a 15-day comment period

during which interested persons could comment on the changes. Four post-hearing comments were received.

Purpose of Final Statement of Reasons

This final statement of reasons sets forth the reasons for the final regulation adopted by OEHHA for Section 12705 and 12711, and responds to the objections and recommendations submitted regarding the regulation. Government Code Section 11346.7, subsection (b)(3) requires that the final statement of reasons submitted with an amended or adopted regulation contain a summary of each objection or recommendation made regarding the adoption or amendment, together with an explanation of how the proposed action has been changed to accommodate each objection or recommendation, or the reasons for making no change. It specifically provides that this requirement applies only to objections or recommendations specifically directed at the proposed action or to the procedures followed in proposing or adopting the action.

Some parties included in their written or oral comments remarks and observations about the regulation which do not constitute an objection or recommendation directed at the proposed action or the procedures followed. Accordingly, OEHHA is not obligated under Government Code Section 11346.7 to respond to such remarks in this final statement of reasons. Since OEHHA is constrained by limitations upon its time and resources, and is not obligated by law to respond to such remarks, OEHHA has not responded to these remarks in this final statement of reasons. The absence of a response in this final statement of reasons to such remarks should not be construed to mean that OEHHA agrees with them.

Specific Findings

Throughout the adoption process of this regulation, OEHHA has considered the alternatives available to determine which would be more effective in carrying out the purpose for which the regulation was proposed, or would be as effective and less burdensome to affected private persons than the proposed regulation. OEHHA has determined that no alternative considered would be more effective than, or as effective and less burdensome to affected persons than, the adopted regulation.

OEHHA has determined that the regulation imposes no mandate on local agencies or school districts.

This regulation has no fiscal impact on small businesses. Businesses with fewer than ten employees are not subject to the Act. Further, the adoption of a regulatory level for a listed chemical benefits the regulated community by providing more specific guidance and greater certainty in determining compliance with the Act, and does not result in any costs to businesses beyond those which already exist as a result of the statute. The regulatory levels are intended to provide "safe harbors" that enable affected businesses to make use of the exemptions provided by the statute. The levels do not preclude a business from relying on an alternative level that it can demonstrate as being scientifically valid in making a determination that an exposure or discharge is exempt from the Act. Establishment of these levels is not a prerequisite for the provisions of the Act to go into effect. In the absence of a safe harbor level for a listed chemical, however, affected businesses must perform their own risk assessment to

calculate the cancer potency of the chemical, quantify the level of exposure for which they are responsible, and demonstrate that that level poses no significant risk of cancer in order to determine whether an exposure or discharge is exempt.

Rulemaking File

The rulemaking file submitted with the final regulation and this final statement of reasons is the complete rulemaking file for this amendment to Section 12705 and 12711.

Necessity for Adoption of Regulations

For chemicals known to the State to cause cancer, the Act exempts discharges, releases and exposures which, making certain assumptions, pose no significant risk. The Act specifies that any claim of exemption under Health and Safety Code Section 25249.10, subsection (c), must be based upon evidence and standards of comparable scientific validity to the evidence and standards which form the scientific basis for the listing of the chemical. However, the Act does not further clarify when a chemical risk is not significant, nor specify levels of chemical exposures posing no significant risk. Existing regulations describe methods for calculating levels which pose no significant risk, and provide specific levels.

The purpose of this regulation is to provide "safe harbor" no significant risk levels for an additional 140 chemicals, below which the Act does not apply. These levels will allow persons to determine whether a discharge, release or exposure involving these chemicals is exempt from the provisions of the Act.

Although existing regulations describe principles and assumptions for conducting risk assessments to calculate the no significant risk levels, most businesses subject to the Act do not have the resources to perform these assessments. Yet each business with ten or more employees needs the ability to determine whether its activities or products are subject to the prohibitions of the Act. In the absence of a regulatory level, some businesses subject to the Act -- as well as persons seeking to enforce violations of the Act -- may not have a way of determining compliance, without investing their own resources to conduct a risk assessment.

The adoption of regulatory levels facilitates compliance with the Act by providing the regulated community with defined boundaries of what would be considered exempt. In the absence of regulatory levels, businesses without the resources to conduct dose-response calculations of cancer potency are often unable to avail themselves of the statutory exemptions from the warning requirement or the discharge prohibition. Enforcers of the Act, such as the Attorney General and certain district attorneys, have stated that adoption of a specific regulatory level enables them to identify potential violations and initiate action to prosecute such violations.

In addition, the regulation would adopt in Section 12705 levels that were previously established in Section 12711. As a result of the adoption of these levels in Section 12705, as well as the new levels calculated using the expedited methodology, the interim standard provided by Section 12713 for exposures to these chemicals in foods, drugs, cosmetics and medical devices would no longer apply. A significant number of foods, drugs, cosmetics and

medical devices are not subject to specific numeric standards for their constituents under existing State and federal laws. The adoption of levels in Section 12705, therefore, will provide additional certainty for those products.

Section 12705

A chemical-specific level in Section 12705 represents the daily intake level which is calculated to result in a cancer risk not exceeding one excess case of cancer in 100,000 individuals exposed over a 70-year lifetime (i.e., less than a 10^{-5} cancer risk). This level is referred to as the "no significant risk" level. A no significant risk level established in Section 12705 provides a "safe harbor" for businesses subject to the Act. The adoption of such a level does not preclude a business from using an alternative level that it can demonstrate as being scientifically valid.

This regulation creates two new subsections under Section 12705: subsection (c), in which the lead agency may establish no significant risk levels based on existing state or federal risk assessments; and subsection (d), in which the lead agency may establish no significant risk levels based on an expedited method consistent with the procedures specified in Section 12703. Levels for 140 chemicals calculated using an expedited procedure are adopted in subsection (d). Levels that had previously been adopted in Section 12711 based on existing State or federal risk assessments are adopted in subsection (c) Levels that had previously been established by the lead agency based on *de novo* risk assessments or based on State or federal risk assessments determined to be consistent with the guidelines in Section 12703 remain in subsection (b) of Section 12705.

A hierarchy is created, wherein the adoption of a level in subsection (b) would supersede a level in either subsection (c) and (d); subsection (c) would supersede subsection (d). As a matter of practice (and in order to avoid confusion), OEHHA will delete a chemical from a lower tier of the hierarchy upon adoption of a level for the same chemical in a higher tier.

Specific regulatory levels established for carcinogens in Section 12705 supersede the following regulations: (1) Section 12709 (Exposure to Trace Elements), which sets forth no significant risk levels for trace elements; (2) Section 12711 (Levels Based on State or Federal Standards), which allows the use of State or federal regulatory levels that are consistent with the definition of "no significant risk"; and (3) Section 12713 (Exposure to Food, Drugs, Cosmetics and Medical Devices), which provides that exposures to carcinogens in foods, drugs, cosmetics and medical devices pose no significant risk if the product can be shown to be in full compliance with all applicable standards.

One commentor (C-15) expressed concern that neither the criteria utilized when OEHHA conducts risk assessments nor the expedited risk assessment procedure affords a complete or adequate scientific review of the toxicity of individual chemicals based on scientifically sound studies and risk assessment.

OEHHA disagrees with this commentor's view. Conventional risk assessments conducted or reviewed by OEHHA involve a thorough review of the available scientific data on a chemical, including data on mechanisms of carcinogenicity and on pharmacokinetics and metabolism. The calculation of a cancer potency value follows the guidelines in Section 12703, which are consistent with generally accepted scientific principles for cancer potency estimation, as well

as approaches utilized by other state and federal regulatory agencies. The "expedited" procedure differs from conventional procedures in that it relies on data from a published carcinogenic potency database only and foregoes a review of mechanistic and pharmacokinetic data, utilizing instead the default procedures described in Section 12703.

The Proposition 65 Scientific Advisory Panel is provided an opportunity to review and comment on no significant risk levels calculated from conventional risk assessments. In the past, the panel has never had any serious concerns over the scientific aspects of a risk assessment that has been brought before it. In addition, risk assessments reviewed by OEHHA often have already been reviewed by scientific panels that advise the regulatory agency for which the risk assessment was developed (e.g., risk assessment documents on toxic air contaminants are reviewed by the California Air Resources Board's Scientific Review Panel). While the expedited risk assessments are not subject to the same degree of individual scrutiny, their adherence to the default procedures in existing regulation and the opportunity for public review -- and for revisitation as described in the regulation itself -- serve to ensure their scientific validity. An earlier proposed "expedited" procedure has also been reviewed by the Scientific Advisory Panel, and the panel strongly endorsed its use in establishing regulatory levels. The expedited procedure used in this rulemaking is a refinement of the earlier proposal.

Subsection (b)

OEHHA may establish no significant risk levels in subsection (b) based on: (1) *de novo* risk assessments prepared by OEHHA pursuant to Section 12703; or (2) existing state or federal risk assessments which have been reviewed by OEHHA and determined to be consistent with the risk assessment guidelines specified in Section 12703. Chemical-specific levels are established in paragraph (1) of subsection (b).

Paragraph (2) of subsection (b) retains the requirement that the Scientific Advisory Panel be provided an opportunity to review and comment on no significant risk levels proposed for adoption under this subsection. Thus, the levels established in subsection (b) have undergone the highest level of scrutiny, having been developed or evaluated by OEHHA, and reviewed by the Scientific Advisory Panel.

While no additional levels were proposed as part of this rulemaking action, OEHHA has, under separate rulemaking, recently adopted no significant risk levels for nine chemicals: arsenic, butylated hydroxyanisole, cadmium, chromium (hexavalent compounds), dichloromethane (methylene chloride), hexachlorodibenzodioxin, 2,3,7,8-tetrachlorodibenzo-p-dioxin, trichloroethylene, and vinyl chloride (Regulatory Action Nos. 92-0805-02S, 92-0805-03S, and 92-0818-03S).

Subsection (c)

Under subsection (c), OEHHA may adopt no significant risk levels derived using existing state or federal risk assessments. This rulemaking adopts, in Section 12705(c), the levels which were previously established in Section 12711(a)(2) for 39 chemicals based on cancer potency estimates calculated in state or federal risk assessments, with a few exceptions.

OEHHA's past experience with the adoption of levels based on a *de novo* risk assessment or a thorough review of an existing risk assessment has indicated that such levels have consistently been similar to those levels that they had superseded which were based on a State or federal risk assessment. To date, there have been 25 chemicals for which levels were established in Section 12705 to supersede levels in Section 12711. Ten of the 25 levels adopted in Section 12705 were lower than the level that had existed for the chemical in Section 12711; five of the Section 12705 levels were higher; the same level was adopted for the remaining ten chemicals. Of the levels that had changed, none differed by more than an order of magnitude from the previous level in Section 12711. (For one of the chemicals, ethylene dibromide, separate levels for oral and inhalation exposures were adopted in Section 12705 to supersede a single level in Section 12711; the inhalation level was the same as the level that was in Section 12711 (3 micrograms/day (μg/day). The level for oral exposures was 0.2 μg/day.)

Under separate rulemaking, OEHHA recently adopted no significant risk levels in Section 12711 for benzyl chloride and bromodichloromethane (Regulatory Action No. 92-0805-04S). The levels for these two chemicals are adopted in subsection (c) of Section 12705 in the present rulemaking.

The levels in subsection (c) often do not undergo the same level of scrutiny as do the levels in subsection (b). OEHHA recognizes that there may be cases wherein a more detailed evaluation of the basis for the cancer potency which was used to derive the no significant risk level in this subsection is warranted, in light of scientific considerations which were not sufficiently accounted for in the state or federal risk assessment. In some cases, more recently developed data may not have been included in the state or federal assessment. Therefore, the proposal explicitly provides a mechanism through which any interested party can request a reevaluation of the level in subsection (c). Upon completion of its own risk assessment or a review of the state or federal risk assessment used to establish the level in subsection (c), OEHHA may establish the level it deems appropriate in subsection (b). Such a level would supersede the level for the chemical in subsection (c).

Ten commentors (C-1, C-2, C-3, C-4, C-7, C-8, C-9, C-10, C-12 and C-13) recommended that the no significant risk level of 90 μg/day for acetaldehyde be limited only to inhalation exposures, three of them (C-1, C-2 and C-9) arguing that it is scientifically inappropriate to apply a level derived from inhalation studies to all routes of exposure, particularly ingestion. A number of the commentors (C-2, C-3, C-8 and C-12) stated that because acetaldehyde is a naturally occurring substance in food, the adoption of the no significant risk level would result in inappropriate, scientifically unsubstantiated, or confusing warnings being issued for numerous foods. Commentor C-1 pointed out that, based on the chemical and biological similarities between acetaldehyde and formaldehyde, it is reasonable to expect that no carcinogenic response would be found following chronic oral exposure to acetaldehyde. Further, it is not likely that acetaldehyde will be available to potential target tissues following inhalation because of its tendency to react with other food constituents or endogenous extracellular substances immediately following ingestion, and its rapid metabolysis in the mammalian liver.

OEHHA agrees that it is scientifically appropriate to limit the applicability of the no significant risk level to inhalation exposures, and the original proposal was amended to reflect this change. In response to a 15-day comment period on the revised proposed regulation, two post-hearing comments were received (PH-1 and PH-2) supporting the change.

With regard to the presence of acetaldehyde in foods as a naturally occurring constituent, the commentors should note that Section 12501 provides that human consumption of a naturally occurring chemical in food is not considered an exposure for purposes of Proposition 65. When a chemical is present in part as a naturally occurring constituent in food and in part from other sources, exposure for purposes of the Act occurs only to the portion derived from other sources.

OEHHA does not agree that the arguments made regarding the non-carcinogenicity of acetaldehyde by the oral route of exposure are valid. The commentors should note that, in 1989, the chairman of the Scientific Advisory Panel had suggested that acetaldehyde may play a role in the carcinogenicity of alcoholic beverages.

Two comments (C-6 and C-16) addressed the adoption of a no significant risk level for chloroform in Section 12705. The initial rulemaking proposal would have simply transferred the level (9 μg/day) that had previously been adopted for chloroform based on a U.S. Environmental Protection Agency (US EPA) risk assessment. OEHHA subsequently adopted no significant risk levels of 20 μg/day for ingestion and 40 μg/day for inhalation of chloroform, based on a document prepared by the California Department of Health Services ("Health Effects of Chloroform," 1990), as post-hearing changes.

Commentor C-16 objected to the adoption of the 9 μg/day level in Section 12705, stating that the level is based on an outdated US EPA risk assessment which has since been superseded by an assessment published in 1987. The more recent risk assessment calculated a cancer potency factor of 6.1×10^{-3} $(mg/kg\text{-}day)^{-1}$. (The previous cancer potency factor was 8.1×10^{-2} $(mg/kg\text{-}day)^{-1}$.) The commentor further pointed out that the California Department of Health Services (CDHS) chloroform risk assessment indicated inhalation and ingestion levels which are higher than 9 μg/day. The commentor urged OEHHA to delay the adoption of a no significant risk level for chloroform until the CDHS risk assessment is discussed by the Proposition 65 Scientific Advisory Panel in October, 1992.

Although the original proposal did not rely upon the 1990 CDHS risk assessment on chloroform, the other commentor (C-6) presented comments on scientific issues relating to the CDHS risk assessment. The commentor disagreed with the animal studies included by CDHS in calculating cancer potency, and CDHS' use of surface area scaling for extrapolation from animal to humans. The commentor also suggested that the physiologically-based pharmacokinetic model used be re-examined, and questioned the appropriateness of the linearized multistage model in light of mechanistic data on the carcinogenicity of chloroform.

The CDHS risk assessment on chloroform is more recent than the USEPA risk assessment which was the basis for the no significant risk level which had previously been adopted in Section 12711 and was initially proposed to be transferred to subsection (c) of Section 12705. Thus, OEHHA decided that it would be more appropriate to rely upon the CDHS document as the basis for a no significant risk level in Section 12705(c).

In response to the notice announcing the post-hearing changes, one commentor (PH-4) contended that the no significant risk level for oral exposures to chloroform should be 230 μg/day. The commentor argued that the level should be based solely on a drinking water study in rats (instead of the four different studies used by CDHS), and that either body weight alone or body weight raised to the 3/4 power should be used for interspecies scaling (instead of a surface area scaling factor). These concerns were similar to those raised by Commentor C-6.

In its risk assessment, CDHS used the linearized multistage model to calculate animal cancer potencies, which were then adjusted to human cancer potency values using surface area scaling factors (animal cancer potency is multiplied by the cube root of the ratio of a reference human body weight (70 kg) to animal body weight). The best estimate of cancer potency was the arithmetic mean of three cancer potency values, derived as follows: (1) from data on renal tumors in male rats from a drinking water study; (2) from data on renal tumors in male rats from a gavage study using corn oil as the vehicle; and (3) from the geometric mean of eleven potencies from data on renal tumors in male mice in a gavage study using toothpaste base or arachis oil as the vehicle, and on cholangiocarcinoma in male and female rats from another drinking water study.

CDHS concluded that the drinking water study preferred by the commentor was well-conducted and well controlled, and the mode of administration may be more relevant to human exposure and is not likely to be a major factor in addressing potency as is the case with corn oil administration. Data from the study yielded the lowest estimate of cancer potency. However, CDHS staff determined that a best estimate of potency for chloroform lies between the high and low end of the range of potencies they calculated. While the gavage study in mice and the drinking water study in male and female rats had their limitations, potencies derived from these studies nonetheless fell in the range of risks presented and the latter study included data in female rats which were not included in the well-designed drinking water study. The mean of eleven potencies calculated from the two studies were geometrically averaged in order to take into account the large number of studies indicating positive tumor response, while at the same time deemphasizing the importance to the overall best estimate (since each individual study was not as well-designed as either the drinking water study in male rats or the gavage study in male rats). Relying solely on the drinking water study in male rats would have underestimated the risk from chloroform exposure.

With respect to CDHS' use of a surface area instead of a body weight scaling factor, such an approach is consistent with CDHS' risk assessment guidelines as well as the provisions of Section 12703. CDHS determined that, while there is very little information supporting one scaling assumption over the other, evidence for scaling on a surface area basis has been reported for alkylating agents such as chloroform, and the U.S. EPA concluded that dose scaling on a surface area basis is warranted for chloroform based on metabolic rates reported in studies in rodents, primates and humans, which indicated that the amount of chloroform metabolized is closely related to surface area.

The commentor should note that the adoption of a no significant risk level for chloroform based on the CDHS risk assessment does not preclude businesses subject to the Act from relying on a different level, provided that the user is

able to demonstrate the scientific validity of the alternative level. Further, reconsideration of a level established based on an existing State or federal risk assessment may be requested by any interested party based on scientific considerations that suggest the need for OEHHA to conduct its own risk assessment for Proposition 65 purposes.

One commentor (E-1) presented comments during the public hearing regarding the proposed adoption of a no significant risk level of 15 μg/day for formaldehyde. This commentor pointed out that a State risk assessment on formaldehyde indicates a no significant risk level considerably higher than the 15 μg/day level proposed for adoption in Section 12705. The commentor urged the adoption of a uniform level for formaldehyde under different State programs.

In response to this comment, OEHHA proposed the adoption of a no significant risk level of 40 μg/day in subsection (b), and added to the rulemaking file the State risk assessment that the commentor referred to (California Department of Health Services, "Health Effects of Formaldehyde," 1992). No objections or recommendations were received regarding this change.

One commentor (C-15) submitted comments regarding the no significant risk level for vinyl chloride to illustrate the "incompleteness of the scientific review engaged in by the state". The commentor submitted a copy of comments that had been submitted in response to a proposal by another state to adopt an ambient air standard for vinyl chloride. The submittal argues that the best current unit risk factor is that which was calculated by the U.S. Environmental Protection Agency in 1985, 2.7×10^{-6} per $\mu g/m^3$. The commentor recommended that OEHHA not adopt a "permanent" level for vinyl chloride of 3 μg/day "until it has an opportunity to revisit the relevant data" as presented in the ambient air standard comments.

The adoption of a new no significant risk level for vinyl chloride is not the subject of this rulemaking. In a separate rulemaking (Regulatory Action No. 92-0818-03S) that was initiated -- but not completed -- before this rulemaking was proposed, OEHHA adopted a no significant risk level of 3 μg/day for vinyl chloride based on risk assessments reviewed by OEHHA's Reproductive and Cancer Hazard Assessment Section. The document included by the commentor regarding another state's proposal to adopt an ambient air standard for vinyl chloride addressed U.S. EPA unit risk factors and did not directly relate to the basis for the 3 μg/day level for vinyl chloride. The U.S. EPA unit risk value which was described by the commentor as the best current value was below the range of risks calculated by CDHS. EPA used animal data that have since been updated, and decided against the use of a metabolic model. The CDHS risk assessments which provide the basis for the level adopted by OEHHA were consistent with the guidelines in Section 12703, and included adjustments for uptake and metabolism.

This commentor's concerns regarding the scientific validity of the assessments relied upon by OEHHA as the basis for no significant risk levels adopted in the regulation are addressed in the discussion under "Section 12705".

One commentor (C-17) suggested that OEHHA withdraw its proposed amendment to Section 12705 concerning polychlorinated biphenyls (PCBs), propound a new standard distinguishing among PCB mixtures and clarify that only PCBs with greater than 60% chlorination are known to the State to cause cancer. The commentor asserts that, when the Proposition 65 Scientific Advisory Panel

considered the listing of PCBs in 1987, the panel limited its listing recommendation to PCB mixtures that contained 60 or more percent chlorine by molecular weight. The commentor further contends that the subsequent listing in 1989 of PCBs without such limitation is an anomaly, and that the proposed amendment to set a no significant risk level for all PCBs in Section 12705 will compound the confusion, is inconsistent with the panel's findings, and violates Section 12703(a), "which requires that a risk assessment be based on standards and evidence comparable to the scientific standards and evidence used in making the initial listing decision".

Although the commentor is correct in stating that the panel specifically concluded that PCBs with 60% or more chlorine by molecular weight be listed, the listing of PCBs is not the subject of this rulemaking. All PCBs were added to the list of chemicals known to the State to cause cancer as a result of the court decision in AFL-CIO, et al. v Deukmejian, et al., (1989) 212 Cal. App. 3d 425. In this rulemaking, the no significant risk level for PCB is simply transferred from Section 12711 to Section 12705(c). The level is based on a risk assessment conducted by U.S. EPA, and was derived using data from a feeding study in rats involving PCB with 60% chlorination. In the same document, EPA also concluded that, while a correlation was observed between the degree of chlorination and tumor inducing potential in mice, with the most highly chlorinated preparations being most potent, it was also noted that a PCB mixture with 54% chlorination was more potent in rats than one with 60% chlorination. EPA applies their cancer potency value to all PCBs, and OEHHA agrees that it is scientifically defensible to do so. Section 12703 require the use of the most sensitive study deemed to be of sufficient quality as the basis for the no significant risk level. As was mentioned earlier, the no significant risk level is intended to provide a safe harbor, and the commentor is not precluded from relying on his or her own risk assessment to demonstrate that an alternative level is scientifically appropriate, or that PCBs with less than 60% chlorination are not carcinogenic. The language in Section 12703 alluded to by this commentor does not necessarily require that the same data used as the basis for listing be used in a risk assessment. Instead, that provision requires that only data from scientifically valid studies of sufficient quality to be considered as the basis for listing be utilized in a risk assessment.

One commentor (C-11) recommended that the current methodology in Section 12705 not be altered, as it provides for levels that represent a broad consensus of views and that are widely viewed as "the safest of safe harbors," removing any concern on the part of their users about the possibility of enforcement action. The adoption of no significant risk levels in subsection (c) would permit the addition of levels which have not been established via the due process type procedure followed in establishing levels in subsection (b), and which are adopted in an expedited fashion contrary to the careful and thoughtful procedure in the current section. The commentor suggests that this would be inconsistent with the letter and spirit of current Section 12705, and that nothing is gained from the adoption of levels that already exist elsewhere in regulation. The commentor also states that the correctness of these levels is in question, since sixty percent of the chemicals for which no significant risk levels have been established in Section 12705 to supersede levels in Section 12711 have had new no significant risk levels that were "significantly different" from the previous level.

The levels which are established in subsection (c) were initially established in Section 12711, following the requirements of the Administrative Procedure Act. While these levels were not required to be reviewed by the Scientific Advisory Panel, any interested party -- including members of the panel -- had an opportunity to submit objections to their adoption during the public comment period. Additionally, the present rulemaking provided an opportunity for further public comment. Several parties took advantage of this opportunity to make specific recommendations on the no significant risk levels for specific chemicals (e.g., acetaldehyde, chloroform and formaldehyde). Contrary to the commentor's assertion that nothing is gained by adoption of these levels in Section 12705, these levels now supersede the interim standard for foods, drugs, cosmetics and medical devices provided by Section 12713. The commentor also incorrectly states that sixty percent of the new levels for chemicals adopted in past rulemaking actions in Section 12705 are "significantly different" from the levels in Section 12711 which they replaced. As stated earlier, none of the levels that had changed differed by more than one order of magnitude (also, levels for 10 of the 25 chemicals were unchanged; see page 5). Due to inherent uncertainties involved in a risk assessment, levels that differ by less than an order of magnitude are considered to be scientifically concordant.

The no significant risk levels established in subsection (c) -- as well as in subsection (d) -- are intended to have the same value as "safe harbor" levels as those in subsection (b).

Subsection (d)

Subsection (d) allows OEHHA to adopt no significant risk levels that were calculated using an expedited method consistent with the procedures specified in Section 12703.

State or federal risk assessments are not presently available for many of the listed carcinogens. The development of conventional, elaborate *de novo* risk assessments on chemicals for which no state or federal risk assessments are available is extremely time-consuming and resource-intensive. Some of the listed chemicals have very limited uses or otherwise cause exposures to a very small number of individuals, and do not warrant the expenditure of significant resources in a conventional risk assessment. The Scientific Advisory Panel, at its April 26, 1991 meeting, strongly supported the notion of conducting risk assessments on an expedited basis. The benefits derived from the adoption of regulatory levels have already been discussed under the section, "Necessity for the Adoption of the Regulation".

OEHHA has developed an "expedited" methodology for the derivation of cancer potency values using data in a published carcinogenic potency database, and applying the default procedures specified in Section 12703. This methodology is described in the document entitled, "Expedited Cancer Potency Values and Proposed Regulatory Levels for Certain Proposition 65 Carcinogens," April 1992, Reproductive and Cancer Hazard Assessment Section, Office of Environmental Health Hazard Assessment. This document also describes the basis for the cancer potencies and the no significant risk levels for 140 chemicals. These levels are proposed for adoption in paragraph (3) of this subsection.

When the "expedited" methodology was used to calculate the potencies for 78 chemicals for which conventional risk assessments have been conducted, ninety

percent of the expedited potencies were found to be within a factor of ten (i.e., within an order of magnitude) of the conventional estimates. For the remaining seven of the 78 chemicals for which the expedited potencies deviated by more than an order of magnitude, the deviations can be explained by the non-default assumptions used in the conventional risk assessment (i.e., pharmacokinetic adjustments), the data set selected (i.e., the data used in the conventional risk assessment were not available in the published database, or the most sensitive study was deemed to be inappropriate in the conventional risk assessment), and known differences between humans and experimental animals.

The regulation explicitly allows interested parties to request a reconsideration of the level in subsection (d) based on either of the following: (a) a state or federal risk assessment on the chemical in question; or (b) scientific considerations which indicate that a conventional risk assessment is warranted.

A state or federal risk assessment would generally utilize conventional risk assessment procedures, including an extensive search of the scientific literature for all data on the carcinogenicity and dose response characteristics of the chemical, followed by an evaluation of the pharmacokinetic and mechanistic data and a dose-response evaluation of all adequate bioassays. The same is true for *de novo* risk assessments conducted by OEHHA. OEHHA recognizes the likelihood that a level in subsection (d) may subsequently require revision, in light of scientific considerations such as the availability of more appropriate data on the pharmacokinetic characteristics of the chemical.

If a state or federal risk assessment is identified for a chemical for which a level has been established in subsection (d), an interested party may request OEHHA to establish a level based on that risk assessment. If OEHHA deems it necessary, it may establish the level based on the state or federal risk assessment in subsection (c). The level for the chemical in subsection (d) would be repealed.

Alternatively, an interested party may request OEHHA to conduct its own risk assessment on a chemical in light of scientific considerations. Such a risk assessment would be used as the basis for a level in subsection (b). Upon adoption of a level in subsection (b), the level for the chemical in subsection (d) would be repealed.

One commentor (C-5) objected to OEHHA's use of the published carcinogenic potency database as its source of data for calculating cancer potency values, contending that the database was not intended for regulatory purposes, that it includes many studies of poor quality, excludes important studies, and lacks information on "hidden" factors. The commentor recommended that more rigorous, weight of evidence criteria be applied to selection of datasets, including the following considerations: appropriateness of the route of administration; a clear dose-response relationship; sufficient number of animals used in the study; low spontaneous incidence in control groups of neoplasms induced in treated groups; the absence of significant target site of systemic toxicity; the relevance of the target organ in animal study to humans; and a determination that more than only benign tumors are produced. The commentor further urged that expedited levels be reviewed and approved by the Scientific Advisory Panel, and that the regulation explicitly require that the lead agency respond in writing to requests for reconsideration of levels.

OEHHA did review the methods followed by the authors in compiling the data published in the carcinogenic potency database. Although the commentor is correct in stating that the database was not intended to be used for regulatory purposes, OEHHA has determined that quality assurance, literature review and control procedures used in compiling the data are sufficient for use in calculating cancer potency values. Further, the dose calculations followed by the authors are similar to those used by regulatory agencies. In selecting data for cancer potency estimation, OEHHA did follow certain criteria that addressed the concerns identified by the commentor: (1) the quality of the data sets was screened based on the number of dose groups, the number of animals per dose group, the dose levels used, the length of the study, and the survival of the animals, and preference was given to studies of higher quality; (2) only data sets with statistically significant increases in cancer incidence with dose are used, except in certain cases, such as rare tumors which may not be statistically significant compared to controls, but which provide a clear evidence of carcinogenicity; (3) data sets are not selected if the endpoint is specified as "all tumor-bearing animals" or results are from a combination of unrelated tissues and tumors; (4) potency is derived from data sets that tabulate malignant tumors, combined malignant and benign tumors, or tumors that would have likely progressed to malignancy. OEHHA does not agree with the commentor's views that the route of administration or target site in animals should necessarily be directly relevant to humans. Animal studies of sufficient quality are deemed appropriate for human cancer potency estimation unless strong scientific evidence exists to discount their relevance.

Since expedited risk assessments are fairly straightforward in terms of data selection and procedures utilized, it would not be necessary to present them to the Scientific Advisory Panel. It is helpful for OEHHA to receive comments from the panel on conventional risk assessments because of possible differences in scientific opinion on the procedures followed or models selected, in light of mechanistic and pharmacokinetic data. The commentor should note that the panel did review a draft document describing an earlier proposed expedited methodology (use of the "tumorigenic dose rate 50" or TD_{50} to approximate cancer potency), and did not raise any objections to its use in establishing no significant risk levels. The expedited method used to calculate the levels adopted in this rulemaking represents a refinement over the earlier proposed method and is more similar to conventional methodology.

OEHHA does not believe that an explicit requirement for OEHHA to respond to a request for reconsideration is necessary. OEHHA intends to respond to any such request, if the requestor provides sufficient scientific basis for such a review. Section 12306, which sets forth a procedure by which interested parties may submit objections to the proposed listing of chemicals via the "authoritative bodies" mechanism, does not contain an explicit requirement for the lead agency for Proposition 65 implementation to respond in writing to such objections. Nevertheless, OEHHA (as well as its predecessor lead agency, the Health and Welfare Agency) has, as a matter of practice, always responded in writing, discussing the reasons for rejecting or accepting the objection. The commentor should be assured that OEHHA has every intention to respond to requests for reconsideration of no significant risk levels in the same manner. Further, Government Code Section 11347.1 already provides a mechanism under which any interested party can petition a State agency to adopt, amend or repeal a regulation, and sets forth specific requirements for the receiving agency to

notify the petitioner in writing regarding its decision. OEHHA is bound by such a requirement.

One commentor (C-11) argued that expediency should not be permitted to allow the summary adoption of no significant risk levels via an acknowledged inadequate expedited methodology. The commentor referenced a court decision which struck down OSHA regulations limiting worker exposures to over 400 toxic substances because OSHA did not make a separate, adequate scientific case for gauging the health risks of each chemical. The commentor disagrees with OEHHA's conclusions regarding the fiscal effect of the proposal. The commentor believes significant expense will result from the regulated community's efforts to correctly establish another safe harbor level as an alternative to being forced to utilize levels which in good faith are believed to be incorrect.

The benefits of, as well as the scientific justification for, using an expedited procedure have already been discussed earlier (see page 11). Since expedited no significant risk levels are scientifically derived on an individual chemical basis, OEHHA does not see how the court order cited by this commentor is relevant. The costs described by the commentor would be incurred by a business that chooses to conduct its own risk assessment to determine an alternative no significant risk level. OEHHA has no control over such decisions by the regulated community. A business should be assured, however, that levels in subsection (d) have the same value as "safe harbors" as levels in subsection (b) or (c). A business that has scientific information indicating that an "expedited" value not appropriate is encouraged to submit such information to OEHHA and request a reconsideration of the existing no significant risk level. In the meantime (or as an alternative), the business can utilize its own risk assessment instead of the regulatory safe harbor.

One commentor (C-14) recommended that the proposed rulemaking be withdrawn and that OEHHA develop a long range plan to systematically carry out complete risk assessments on listed chemicals. The commentor objected to the adoption of no significant risk levels "based on default assumptions and a partial review of related studies," claiming that the default assumptions are overly conservative, ignore new scientific advances, and contribute to costly and unwarranted regulation and control measures.

The agreement between the cancer potencies for 78 chemicals calculated using conventional risk assessments and levels calculated using expedited risk assessments illustrates that the expedited methodology is a reasonably reliable tool for calculating cancer potency values (see page 11). OEHHA has confidence in relying upon a default approach in the expedited procedure, as this approach will result in levels which will be more protective of public health and the environment, as well as provide more certainty for the regulated community. At the same time, however, OEHHA realizes that sufficient scientifically valid data may exist for certain chemicals, warranting a deviation from default assumptions. The regulation's provisions which allow an interested party to request a reconsideration of a no significant risk level based on an expedited risk assessments in light of a conventional State or federal risk assessment or in light of available scientific data would ensure that, when justified, expedited levels are superseded by more scientifically appropriate levels. Such would be the case whether an expedited risk assessment was "overly conservative" or not protective enough, given additional data.

Another commentor (C-15) expressed concern over the adoption of no significant risk levels derived using the expedited procedure, stating that levels that are lower than federal standards will -- contrary to OEHHA's conclusion that the regulation will not have a significant adverse economic impact on small businesses -- impose unreasonable additional environmental and hazard communication burdens without adequate scientific justification. The commentor contended that the provision of additional warnings to workers beyond those required by federal and state workplace requirements may saturate workers with information, causing them to disregard important health and safety information based on OSHA permissible exposure limits and threshold limit values. Unduly severe levels are less fair and more burdensome than having no state endorsed levels at all or, where applicable, relying on the food and drug "safe harbor" provided in Section 12713. The commentor claims that adequate justification has not been provided for the "great departure" from the current regulatory scheme under which Section 12705 is reserved for levels derived from *de novo* risk assessments or assessments reviewed. The commentor felt that the rationale that development of conventional, elaborate *de novo* risk assessments would be extremely time-consuming and resource-intensive suggests that the state is engaging in a form of cost-benefit analysis not countenanced by Proposition 65. Moreover, concerns about the soundness of the criteria used to develop the proposed no significant risk levels are heightened by the lack of balance on the recently reconstituted Scientific Advisory Panel of state government officials, which has responsibility for advising OEHHA on the propriety of proposed no significant risk levels based on *de novo* risk assessments or reviewed risk assessments; a panel with a cross-section of experts from government, industry and other private sectors is a key component of a fair procedure for establishing levels. The commentor pointed out that OEHHA has demonstrated that it is sensitive to the need for balanced representation on advisory bodies through its participation in recent litigation seeking to invalidate certain recommendations of the Food and Drug Administration Advisory Committee (Public Citizen et al. v Department of Health and Human Services).

It appears that this commentor may not fully understand the purpose of regulatory no significant risk levels and how they are applied. The Act does not mandate the State to establish no significant risk levels. The lead agency has chosen to develop and adopt no significant risk levels to provide guidance and greater certainty to businesses in claiming an exemption from the warning requirement. A business that is able to justify the use of a no significant risk level that is different from the safe harbor level is not prohibited from doing so, but the burden of proving the scientific validity of the alternative level rests with its user. The requirements of the Act (for warning or for not discharging to a drinking water source) become effective after specified grace periods, regardless of whether or not a regulatory level has been established. The absence of a regulatory level for a chemical does not mean that the Act's requirements are not applicable to that chemical. In the absence of a regulatory level, the business must make a determination of no significant risk on its own in order to utilize the statutory exemptions; otherwise, the requirements of the Act are triggered by any detectable amount of a listed chemical. In cases where the no significant risk level corresponds to a concentration in the exposure medium which is below the current limits of detection for the methods referred to in existing regulation (Section 12901), the requirements of the Act are not triggered until the chemical is detectable.

This commentor's concerns regarding levels lower than federal standards are difficult to understand. An exposure must be shown to present "no significant risk," as defined, to be exempt from the Act. Exemptions from the Act's requirements are not dependent upon federal or State standards (except as provided by Section 12713 or where specifically preempted (see Health and Safety Code Section 25249.10(b)). Reliance on federal standards, including OSHA levels, are appropriate to demonstrate no significant risk only if those levels are calculated to result in not more than a 10^{-5} cancer risk. Oftentimes, these levels are established not solely on the basis of health considerations, but also based on technical, economic, or other factors which are not relevant in the determination of "no significant risk".

While the commentor expressed concern over the soundness of the criteria used to develop no significant risk levels, no specifics are presented to identify which criteria are deficient.

The composition of the Scientific Advisory Panel is not the subject of this rulemaking. Nevertheless, it may be helpful for the commentor to know that only routine conventional risk assessments will be presented to the panel of State scientists. Controversial assessments will be presented to a separate panel of independent scientists for review.

Section 12711: Levels Based on State or Federal Standards

Section 12711 is amended to conform with the changes in this proposal. Paragraph (2) of subsection (a) would be deleted, and paragraph (3) renumbered.

Section 12711 continues to allow the use of a state or federal regulatory level which is calculated to result in a lifetime excess cancer risk of not more than one in 100,000. The regulation also continues to allow, for exposures to drinking water, the use of maximum contaminant levels and action levels established by the Department of Health Services, or allowable discharge levels established by the Regional Water Quality Control Boards.