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Environmental Protection

PESTICIDE REGISTRATION AND EVALUATION COMMITTEE (PREC) Meeting Minutes – July 17, 2026

Committee Members/Alternates in Attendance:

Elizabeth Marder – California Department of Public Health (CDPH)
Fabiola Estrada – U.S. Environmental Protection Agency (U.S. EPA), Region 9
Fatemeh Ganjisaffar – California Department of Food and Agriculture (CDFA)
Kevi Mace (Alternate) – CDFA
Garrett Keating, Ph.D. – Department of Industrial Relations (DIR)
Katie Sutherland-Ashley – Office of Environmental Health Hazard Assessment (OEHHA)
Mai Ngo – Department of Toxic Substances Control (DTSC)
Matt Hengel – University of California (UC), Davis, IR-4 Program and Environmental Toxicology
Kari Arnold (Alternate) – UCD IR-4 Program and Environmental Toxicology
Nan Singhasemanon (PREC Chair) – Department of Pesticide Regulation (DPR)
Ryan Bourbour – Department of Fish and Wildlife (DFW)
Stan Armstrong – Air Resources Board (CARB)
Stephen Scheer – California Agricultural Commissioners and Sealers Association (CACASA)
Tom Ineichen – Structural Pest Control Board (SPCB)
Kathleen Boyle (Alternate) – SPCB
Wendy Linck, PG, PMP – State Water Resources Control Board (SWRCB)
Jonathan Williams (Alternate) – SWRCB

Visitors in Attendance:

Note: Only attendees who identified themselves or could be identified by DPR are listed.

Abby Taylor-Silva, Kahn, Soares, and Conway (KSC) Lawyers
Ann Sanchez, Gowen
Anne Katten, California Rural Legal Assistance Foundation (CRLAF)
Amanda Voropaeff
Bruce Houtman
Byanka Santoyo, Center on Race, Poverty, and the Environment (CRPE)
Connie Clarke, Pet IQ
Daniel Kim, State Workforce Agency (SWA) Consulting
Doug Belle, Cardinal Pro Product
Emily Marquez, Pesticide Action Network (PAN)
Emily Saad, Exponent
Frankie Bell, Degesch America
Gerald Holmes, California Council on Science and Technology (CCST)
Ione Yuen, San Mateo County Department of Agriculture
James Nakashima, OEHHA
Jennifer Thomasen, Bayer

Jenny Broome, CCST
Jessica Rader, SWRCB
Jing Tao, OEHHA
Kathleen Kilpatrick, Safe Ag / Safe Schools (SASS)
Karen Silva, Corteva
Kimberly Parra, CCST
Melissa Cregan, Fresno County Department of Agriculture
Michael Rust, CCST
Yoshira, UCLA
Nayely Cazares
Ope Oyewole, CCST
Rhianna Hohbein, CCST
Robert Rager, Lanxess
Ruthann Rudel, Silent Spring
Sarah Aird, Californians for Pesticide Reform (CPR)
Steve Honjio, DIR
Tammy Qualls
Taylor Triffo, KSC Lawyers

DPR Staff in Attendance:

Ajay Kumar – Pesticide Registration Branch
Andrew Turcotte – Pesticide Registration Branch
Andy Viet Nguyen – Pesticide Registration Branch
Brandon Brown – Human Health Assessment Branch
David Bonner – Human Health Assessment Branch
Elana Varner – Pesticide Registration Branch
Eric Kwok – Human Health Assessment Branch
Gayatri Sankaran – Human Health Assessment Branch
Jacki Coburn – Human Health Assessment Branch
Jeff Nagle – Worker Health and Safety Branch
Lauren Timmons – Pesticide Registration Branch
Laurie Brajkovich – Registration and Evaluation Division
Megan Bertrand – Pesticide Registration Branch
Nan Singhasemanon – Sustainable Pest Management Division
Nan-Hung Hsieh – Human Health Assessment Branch
Niladri Bhowmik – Human Health Assessment Branch
Puttappa Dodmane – Human Health Assessment Branch
Peter Lohstroh – Human Health Assessment Branch
Rachel Olmstead – Sustainable Pest Management Division
Robert Sheffer – Pesticide Registration Branch
Sapna Thottathil – Sustainable Pest Management Division - Deputy Director
Samantha Jones – Human Health Assessment Branch
Svetlana Koshlulkova, Human Health Assessment Branch
Taylor Whitehill – Pesticide Registration Branch

Vikrant Singh – Human Health Assessment Branch
Xiyuan Cheng – Human Health Assessment Branch

1. Introductions and Committee Business – Nan Singhasemanon, Chair, DPR

- a. DPR recently posted a report to the California Legislature that outlined actions to improve the efficiency of the Department's internal reevaluation process. This is in compliance with one of the requirements of Assembly Bill (AB) 2113. Key improvements identified and discussed in the report includes:
 - Increased staffing and capacity,
 - Greater transparency and accountability,
 - Active progress on historic work,
 - Choosing the right scope of work,
 - Establishing the Scientific Prioritization and Review Committee (SPARC),
 - Continuous process improvements
- b. Regulations updating DPR's Groundwater Protection List went into effect on July 1st. These updates are related to DPR's shift from the use of specific numerical values to a multivariate method in determining active ingredients that have the potential to pollute groundwater. DPR staff shared the methodology behind these updated regulations with the PREC several years back during the development phase.
- c. Worker safety regulations also went into effect on July 1st to clarify chemical-resistant suit requirements and to clean-up language around heat illness prevention requirements, which are now aligned with DIR/Cal-OSHA requirements.
- d. DPR has completed its review of almost 3,000 individual public comments received on SprayDays California, the state's pesticide application notification system. These comments are posted and publicly available on DPR's [SmartComment webpage](#). Many of the comments centered around:
 - Map usability & the level of detail displayed
 - Notification content & timing
 - Requests for additional health & application information
 - Plain-language clarity about what notifications mean
 - Education & outreach
- e. The Sustainable Pest Management Advisory Committee (SPM AC) kickoff virtual meeting took place on June 15th and the inaugural meeting for the Scientific Prioritization and Review Committee (SPARC) will be held in a hybrid format (in-person, Zoom, and webcast) on August 7th.

Note that the PREC meeting presentations were summarized using artificial intelligence and have been reviewed for accuracy.

2. Presentation: Assessment of Available Alternatives for Structural and Post-Harvest Commodity Fumigants – California Council on Science and Technology (CCST)

Nan Singhasemanon noted a minor shift from the posted agenda: CCST's final report, focused on non-1,3-D and non-chloropicrin pre-plant fumigants, is not yet publicly available. Once released, DPR will issue a press announcement with the report link. Today's presentation will be limited to structural and post-harvest commodity fumigants and alternatives.

CCST staff and project collaborators (Gerald Holmes, Jenny Broome, Michael Rust, Kim Parra, Rhianna Hohbein, and Ope Oyewole) presented updates from DPR's ongoing Fumigant Alternatives Study and focused on findings from two completed deliverables: the Structural Fumigation Report and the Post-Harvest Commodity Fumigation Roundtable Proceedings. CCST began by outlining its study methods, which mirror National Academy of Sciences standards; and rely on balanced expert teams, conflict-of-interest screening, peer review, and steering committee consensus. The overall study scope includes describing fumigant use in California, identifying currently available alternatives, evaluating adoption barriers, and highlighting research needs.

Structural Fumigation Report (Sulfuryl Fluoride Use)

Michael Rust summarized major findings from CCST's structural fumigation analysis. Structural fumigation in California is overwhelmingly driven by the need to control Western drywood termite infestations, which have increased significantly over the past century. Approximately 90,000 structures were fumigated in 2022, largely in coastal counties. Sulfuryl fluoride has been the primary fumigant since replacing older chemicals including methyl bromide.

The report identifies potential strategies to reduce sulfuryl fluoride emissions, such as improved monitoring during fumigation and exploring the use of CO₂ to reduce required fumigant levels. Emerging research suggests that scrubbing sulfuryl fluoride from post-fumigation exhaust streams may be feasible. CCST highlighted major data gaps regarding the frequency, effectiveness, and adoption of structural fumigation alternatives and recommended renewed efforts to evaluate alternative treatment methods, improve termite detection tools, and expand research into new technologies, including pheromones, attractants, and improved inspection devices.

Human Health Considerations

Kimberly Parra presented CCST's assessment of human health risks associated with sulfuryl fluoride exposure. Inhalation is the primary exposure pathway. Both epidemiological and toxicological evidence shows that sulfuryl fluoride can affect the brain and lungs, consistent with 275 documented acute injury or illness cases in California from 1992–2022. A key data gap is the lack of research on long-term occupational exposure among pest management professionals.

CCST found that workers are most at risk during application and aeration phases, while occupants may be exposed during reentry and post-clearance if fumigation clearance devices fail. CCST highlighted concerns with certain widely available clearance devices that demonstrated

high false-negative rates in U.S. EPA testing. Recommendations include independent reevaluation of clearance devices and additional research on chronic exposure in fumigation workers.

Post-Harvest Commodity Fumigation Roundtable

Rhianna Hohbein summarized key takeaways from CCST's November roundtable on post-harvest fumigants (sulfuryl fluoride, methyl bromide, propylene oxide, and phosphine). Eleven experts from industry, academia, and government participated. Discussions focused on drivers of fumigant use, emission mitigation, community concerns, available alternatives, adoption barriers, and research gaps.

Participants cited trade requirements, long-term storage needs, pest-spread prevention, and consumer expectations as major drivers of fumigation use. They agreed that each fumigant plays a distinct and complementary role. Community concerns regarding emissions persist, and participants differed on whether regulatory changes or stronger enforcement would be more effective. All indicated that additional data would support regulatory clarity.

Roundtable participants identified several priority alternatives—including irradiation, controlled atmospheres, integrated or multi-method approaches, pheromone-based strategies, cold or freezing treatments, and ethyl formate—but noted significant barriers such as knowledge gaps, limited awareness, economic feasibility, and potential risks to brand reputation if alternatives are less effective.

Committee Comments

Garrett Keating (DIR): For the lack of toxicity data on sulfuryl fluoride and other fumigants, is reregistration with U.S. EPA the time when agencies like DPR can request additional health-effects data? And regarding the two clearance devices that aren't working very well, do we know how frequently they are used? Were they part of field inspections, and what instruments were used?

Nan Singhasemanon (DPR): Federal reevaluation and reregistration reviews provide opportunities for DPR and others to submit input to U.S. EPA, although these comment windows occur at specific times rather than continuously. DPR does provide information during those periods, and the public can also comment on draft federal documents.

Kimberly Parra (CCST): The two clearance devices were originally identified in a 2016 report by U.S. EPA's Office of Inspector General, and they were reevaluated last year. We did not find any data on how frequently these devices are tested or used, including in California, which was the focus of our report. This raises questions about whether the devices currently being used are adequately protective for workers and the public.

Nan Singhasemanon (DPR): U.S. EPA recently requested input from California regarding sulfuryl fluoride, and there has been extensive work over the last four to five years on this topic.

Sapna Thottathil (DPR): DPR's Continuous Evaluation and Mitigation Table lists all active ingredients and products currently under reevaluation or being considered for mitigation. Sulfuryl fluoride is on that table. DPR is conducting an observational study to examine human health impacts and mitigation opportunities. The table is available on DPR's [website](#).

Elizabeth Marder (CDPH): Thank you again for the presentation. I had a follow-up question for CCST. Do we know how many of the problematic clearance devices are used in California? And regarding the bystander issue, your report suggests residents near fumigated structures may experience exposures for up to a week post-clearance. Could you speak more about that? Also, can DPR comment on any active studies addressing those concerns?

Kimberly Parra (CCST): We did not find data on how many of these devices are used in California, and DPR may have more information. Regarding sulfuryl fluoride injuries among bystanders, we reviewed California's Pesticide Illness Surveillance Program, which is a passive surveillance system and may involve underreporting. Even so, most non-occupational exposures reported by residents or office workers occurred during reentry or post-clearance phases. In the absence of biomarker studies, this surveillance system is the best available dataset, and some of these cases may relate to faulty clearance devices.

Elizabeth Marder (CDPH): And regarding exposures to neighbors of fumigated structures?

Kimberly Parra (CCST): The surveillance system makes it difficult to determine whether sites were properly retested or certified for reentry. We relied on narrative descriptions when available. Because it is a passive system, more rigorous epidemiological studies would be needed to answer proximity-related questions with certainty.

Tom Ineichen (SPCB): My questions are also about the clearance devices. First, what is the minimum detection level each device can measure? Are there devices that can detect lower levels, such as below one part per million? Second, regarding failure rates—when false negatives occurred, were the actual readings in the 2–10 ppm range or much higher? I would like to understand how severe these failures were and where that data can be found.

Kimberly Parra (CCST): The 2016 Office of Inspector General report and our updated report provide details on failure rates and testing conditions. Two of the four devices identified had significant reliability issues. Some devices are capable of detecting below one ppm, and U.S. EPA has since reviewed an additional device, which is posted online. For detailed failure-rate data, the OIG reports are the best source.

Tom Ineichen (SPCB): Thank you. I recall false negative rates of 50–70 percent—is that correct?

Kimberly Parra (CCST): Yes, that is my recollection, though I will double-check.

Rhianna Hohbein (CCST): To add context, the 80–100 percent false negative rates applied at the one-part-per-million threshold. In more recent U.S. EPA testing, false negatives improved at three parts per million. Devices were more successful in detecting higher levels.

CCST follow-up response after the meeting: The U.S. EPA study tested clearance device performance at 1, 3, 5, and 10 ppm. Within this range no false negatives occurred at 5 or 10 ppm for any device. At 3 ppm, false negatives were limited to one device (GF-1900). The FN issue was primarily concentrated at testing 1 ppm concentrations (see link to table below).

For clearance device testing results with specific device readings for 1 ppm, 3 ppm, 5 ppm, and 10 ppm, see [*Laboratory Testing of Portable Clearance Devices with Sulfuryl Fluoride Standard - All Devices Final Report Docket \(EPA-HQ-OPP-2009-0136-0104\)*](#)

For clearance device at the target 1 ppm (table below), see [*Sulfuryl Fluoride Clearance Devices*](#)

Tom Ineichen (SPCB): Thank you. Has U.S. EPA changed the worker-safety and bystander thresholds? My understanding was that five ppm applied to bystanders and one ppm to workers. Are those still the general standards?

Nan Singhasemanon (DPR): We may need to follow up after the meeting to provide accurate details, but DPR staff can help locate that information.

Tom Ineichen (SPCB): Thank you. If anyone has that data, please send it to me.

CCST follow-up response after the meeting: The U.S. EPA has modified the threshold clearance concentration, and as of now, structures must measure at or below 1 ppm for them to be reoccupied ([U.S. EPA OIG Report](#), 2016). As for U.S. EPA historical regulatory threshold from OIG report, “Since the 1980s, the U.S. EPA has modified the threshold clearance twice, from 10 ppm to 5 ppm, and then to 1 ppm.”

DPR follow-up response after the meeting: DPR’s Worker Health and Safety Branch confirmed that under both U.S. EPA and DPR, the re-entry requirement is the same at 1 ppm and there is no separate clearance value for workers vs. bystanders although workers are required to wear SCBA prior to entering the treated structure for aeration and clearance.”

Public Comments

Jeff Nagle (CDPR): For Kimberly—did the roundtable discuss resident exposure post-fumigation? Sulfuryl fluoride can become trapped in void spaces, waterbeds, totem boxes, air bladders, etc., and there have been reports of multiple people experiencing exposures afterward.

Kimberly Parra (CCST): Yes. Sulfuryl fluoride can become trapped in certain items, including water mattresses, and can later off-gas. Some of the residential bystander exposure incidents reported in California are documented in our report. Structural fumigation requires extensive preparation, and this is why we emphasize preventing failures in engineering and administrative controls to minimize exposures to both bystanders and community members.

Kathleen Kilpatrick (SASS): I found this presentation shocking. I live in an area with extensive agricultural fumigation, and the lack of information on health effects and reliance on alternatives was surprising. I've seen reports of fumigants escaping into urban communities. How is CARB involved? These are air pollutants detected at measurable levels near both structural and post-harvest fumigation sites. This seems like an environmental justice issue, as post-harvest work often occurs in lower-income communities. Sulfuryl fluoride is also a potent greenhouse gas, which is another health and environmental concern. Is DPR collaborating with CARB, and is there a plan to provide prevention guidance and information to the public?

Nan Singhasemanon (DPR): Thank you for your comments and questions about CARB. CARB is involved in work related to post-harvest commodity fumigation, often in partnership with local air districts, DPR, OEHHA, and other agencies. Monitoring activities are occurring in certain communities. Much of this work falls under AB 617, the Community Air Protection Program, which specifically focuses on environmental justice communities.

Stan Armstrong (CARB): Yes, CARB's AB 617 efforts include work related to pesticides, and your description of the community impacts is correct.

Lauren Timmons (DPR): There are no email questions in the inbox at this time.

Nan Singhasemanon (DPR): Thank you. We will move on to the next presentation. Please send any remaining questions to the PREC email address for follow-up after the meeting, and thank you again to our CCST colleagues for joining us.

3. Presentation: Pesticide-Laden Dust and Implications for Reentry Worker Exposure to Cyfluthrin and Associated Health Risk – Dr. Eric Kwok, Senior Toxicologist, Human Health Assessment Branch, DPR

Dr. Eric Kwok presented DPR's human exposure assessment for agricultural reentry workers exposed to cyfluthrin and beta-cyfluthrin, focusing on new inhalation-based methods developed to better understand respiratory illnesses reported in 1997 among orange harvesters. Before his presentation, Dr. Samantha Jones provided background on DPR's long-standing reevaluation of cyfluthrin, which began after investigations showed significant respiratory irritation among workers days after application. She explained that DPR has spent years gathering data, requesting focused studies, incorporating advances in toxicology and exposure science, and aligning state work with federal U.S. EPA reviews. She emphasized that cyfluthrin is DPR's oldest reevaluation and that the current assessment reflects extensive technical analysis and external peer review.

Dr. Kwok explained that cyfluthrin and beta-cyfluthrin are Type II pyrethroids, distinguished by their effect on voltage-sensitive sodium channels leading to prolonged depolarization of nerve cells. He reviewed the 1997 Tulare County incident involving an emulsifiable concentrate formulation of cyfluthrin applied at 0.1 lb/acre, where workers experienced rhinitis, coughing, eye irritation, and skin irritation 3, 10, and 11 days after application. The delayed onset suggested that direct contact at the time of spraying was not the cause, prompting DPR to examine multiple exposure pathways.

He described why inhalation of vapor was ruled out: cyfluthrin has extremely low vapor pressure, strongly associates with particles rather than existing in the vapor phase, and field monitoring showed extremely low airborne vapor concentrations in treated orange groves. Dermal exposure was also evaluated and dismissed as a primary cause because dermal absorption is only about 2.3% and modeled absorbed doses across typical orange-grove activities produced margins of exposure above DPR's level of concern.

The pivotal shift came from revisiting earlier scientific suggestions that foliage disturbance during harvesting can generate dust containing pesticide residues. Dr. Kwok explained that the symptoms reported—particularly nasal and upper-airway irritation—aligned with inhalation of larger “inhalable” dust particles that deposit in the extrathoracic region. Because direct measurement of pesticide content on dust particles is not available, DPR used dislodgeable foliage residue (DFR) as a surrogate for the maximum amount of pesticide available for dust transfer.

He summarized DPR's earlier field study measuring cyfluthrin residues across eight orange groves treated the same way as during the incident. Residues were modeled over time, with DPR selecting the fields showing the slowest dissipation and using the 95% upper prediction limit to generate conservative residue estimates for days 3, 10, and 11. To estimate how much foliage dust becomes airborne when disturbed, DPR relied on UC Berkeley measurements comparing leaf-punch (total dust) and vacuum sampling (loosely bound dust). These datasets showed a

strong correlation, and further statistical analysis indicated that roughly 16% of dust present on foliage can become airborne.

Using this information, DPR converted residue levels into estimated airborne concentrations within a five-foot breathing zone—corresponding to where inhalable dust deposits in the upper respiratory tract. When compared against inhalation toxicological reference points, the resulting margins of exposure remained below DPR’s target protective value across all relevant days. In contrast, dermal margins of exposure stayed well above their protective threshold. This clearly indicated that inhalation of pesticide-laden dust was the primary contributor to the acute symptoms reported in 1997.

Dr. Kwok also noted that formulation type influences the behavior of residues and dust. Emulsifiable concentrates leave very small particles that adhere to dust but do not change dust behavior significantly, while wettable powders leave larger particles that may alter dust characteristics and inhalation potential. DPR concluded that inhalation of dust disturbed during harvesting—rather than vapor exposure or dermal absorption—best explains the 1997 illnesses, and that formulation considerations may also play a role in acute risk potential. The new methodology offers a more accurate foundation for assessing inhalation risk and will support DPR’s development of appropriate mitigation measures as the cyfluthrin reevaluation progresses.

Committee Comments

Garrett Keating (DIR): Since EC formulations produce finer particles that distribute more effectively on leaves, does that create more contact with dust compared to wettable powders? And is that something for future research?

Eric Kwok (DPR): Smaller particles have greater surface area, which means more potential contact. These fine particles can attach to dust without changing dust behavior. With wettable powders, particles are larger and cannot easily enter airways. As more formulation data become available, we will examine this further.

Public Comments

Kathleen Kilpatrick (SASS): Very impressive data analysis, but it took 28 years and raises questions about cumulative exposures. How many times were workers exposed in those 28 years? What PPE were they using? How did work pace and weather affect breathing rates? What other pesticides were they exposed to? And how much of that dust did they carry home?

Eric Kwok (DPR): Scientific discovery takes time, and developing the methodology shown today required substantial effort. All the data presented came from the same formulation,

and the goal was to create a quantitative method to characterize risk. For regulatory agencies, it is essential not just to identify an observation but to quantify it so that mitigation can be developed.

Jennifer Thomasen (Bayer): What are the implications for other pesticides and this route of exposure post-application?

Eric Kwok (DPR): This is the first time I'm aware of a method that allows us to assess exposure to pesticide-laden dust. It establishes a foundation for future development of work-exposure assessments. More work is needed, particularly for wettable powder formulations. Because formulation type affects airborne dust potential, we still need to investigate how to characterize airborne dust from wettable powders. This methodology provides a path forward for quantitative evaluation and future mitigation development to protect workers.

Samantha Jones (DPR): I'd like to add that we are working off of years of risk assessment methodologies and things that advance over the years, and like Eric said we follow that and looking for scientific advancement and want to continue to evolve ourselves so when we are looking at massive amounts of data and really trying to understand what's going on and how to highlight concerns. Anytime you're in depth in data like that you're also seeing processes and procedures that need development, and this is a great example of how being able to work through this assessment and build off of some more recent advancement around some of these calculations and able to apply it in this particular scenario and build off of that. Just like these considerations around the formulations, the considerations around what we're really seeing in terms of the exposure and how we quantitatively characterize that. So yes, we are hoping to utilize this experience and what we've learned here specifically for cyfluthrin and for the future.

Emily Marquez (PAN): Will there be other studies using this methodology applied for EC formulations that have caused illness? Or maybe more accurately, an AI that was in an EC formulation that was associated with illness?

Eric Kwok (DPR): That will be part of our next steps. We plan to evaluate whether this methodology is applicable to other active ingredients, though I have not yet looked into additional AIs. This is an area we intend to explore moving forward.

Sarah Aird (CPR) My takeaway is that it is extremely problematic that reevaluations can take 30 years. There are over 1,000 active ingredients in use, and registrations far outpace reevaluation completions. Communities have faced exposures without answers for decades. I request that the PREC place an item on the next meeting agenda for a presentation on DPR's progress — or lack of progress — on reevaluations, including comparisons with new registrations. We need more explanation and accountability.

Nan Singhasemanon (DPR): Thank you for the comment and the request. A similar request was sent via email, and DPR intends to have these prioritization conversations at the Scientific Prioritization and Review Committee (SPARC) meetings, which includes public participation. We already have several items planned for the next PREC meeting agenda, so this topic may not fit immediately, but SPARC is the appropriate venue to begin this discussion. We will follow up on the written request separately.

Anne Katten (CRLAF): Thank you for the presentation. When looking at different formulations, it's important to consider whether wettable powder particles could suspend separately from dust and therefore not reduce exposure. Also, how was the margin of exposure (MOE) of 30 determined for inhalation? And I share the concerns raised by Sarah.

Eric Kwok (DPR): For wettable powders, the key question is whether particles are small enough to deposit in the nasal region. Preliminary calculations show wettable powder particles are much less capable of becoming airborne and depositing in nasal passages. For dermal exposure, dermal absorption of cyfluthrin is only 2.3%, so dermal pathways are less significant. I'll defer the MOE question to our toxicology team.

David Bonner (DPR): The target inhalation MOE of 30 reflects the uncertainty factors used in the assessment, which were based on U.S. EPA's approach. The MOE includes a three-fold factor for interspecies extrapolation and a ten-fold factor for intraspecies variability. The interspecies factor of three accounts for dosimetric adjustments that convert the rat point of departure into a human equivalent concentration.

Byanka Santoyo (CRPE): Thank you for the presentation. These findings align with what community members have experienced for years. Pesticide exposures affect respiratory health daily in rural communities, yet agencies often deflect responsibility. This study confirms that pesticides affect air quality and should be treated as an air-quality concern. We need stronger action and cooperation from state agencies to mitigate exposures in communities that have been burdened for decades.

Nan Singhasemanon (DPR): Thank you for the comment and observation.

5. Agenda Items for Next Meeting

None suggested from the committee.

The next PREC meeting is scheduled for September 18, 2026, at 10:00 am. This meeting will be held virtually on the Zoom platform and broadcast live on the [CalEPA webcast page](https://video.calepa.ca.gov/) <video.calepa.ca.gov/>

6. Adjourn