

MEETING
STATE OF CALIFORNIA
ENVIRONMENTAL PROTECTION AGENCY
AIR RESOURCES BOARD
SCIENTIFIC REVIEW PANEL
ON TOXIC AIR CONTAMINANTS

ZOOM PLATFORM
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
SIERRA HEARING ROOM
1001 I STREET
SACRAMENTO, CALIFORNIA

THURSDAY, MAY 12, 2022

9:31 A.M.

JAMES F. PETERS, CSR
CERTIFIED SHORTHAND REPORTER
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APPEARANCES

PANEL MEMBERS:

Cort Anastasio, PhD, Chairperson

Ahmad Besaratinia, PhD

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Michael T. Kleinman, PhD

Joseph R. Landolph, Jr., PhD

Karen Messer, PhD

Beate R. Ritz, MD, PhD, MPH

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REPRESENTING THE OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT:

John Budroe, PhD, Chief, Air Toxicology and Risk Assessment Section, Air and Site Assessment and Climate Indicators Branch, Division of Scientific Programs

Vince Cogliano, PhD, Deputy Director, Division of Scientific Programs

APPEARANCES CONTINUED

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Kannan Krishnan, PhD, Air and Site Assessment and Climate Indicators Branch, Division of Scientific Programs

REPRESENTING THE DEPARTMENT OF PESTICIDE REGULATION:

Minh Pham, PhD, Branch Chief, Environmental Monitoring Branch, Pesticide Program Division

ALSO PRESENT:

Sarah Aird, Californians for Pesticide Reform

Caroline Cox, Californians for Pesticide Reform

Laura Rosenberger Haider

Jane Sellen, Californians for Pesticide Reform

Raymond Tompkins, PhD

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1. Welcome and Introductions 1

2. Review of 1-Bromopropane (1-BP) Reference Exposure Levels (RELs) - Technical Support Document for the Derivation of Noncancer Reference Exposure Levels - Appendix D1.

Office of Environmental Health Hazard Assessment (OEHHA) staff will present a draft document summarizing the development of non-cancer acute, 8-hour, and chronic inhalation RELs for 1-BP.

RELs are airborne concentrations of a chemical that are not anticipated to result in adverse non-cancer health effects for specified exposure durations in the general population, including sensitive subpopulations.

OEHHA is required to develop guidelines for conducting health risk assessments under the Air Toxics Hot Spots Program (Health and Safety Code Section 44360 (b)(2)). In response to this statutory requirement, OEHHA develops RELs for many air pollutants. More information regarding the Document can be found at OEHHA website.

Note: a workshop and comment period for the document was offered in January through February 2022, but written comments regarding the Draft Document can be submitted to the Panel for the SRP meeting. 4

3. Informational Item regarding a proposed process for Hot Spots chemical reviews.

The Office of Environmental Health Hazard Assessment (OEHHA) currently follows a process to meet the statutory requirement of developing health guidance values under the Air Toxics Hot Spots program. In addition, OEHHA develops No Significant Risk Levels (NSRLs) for carcinogens listed under Proposition 65. In an effort to utilize resources more effectively, these processes can be matched to produce deliverables that satisfy the requirements of both programs.

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OEHHA staff will provide the Panel with a description of a proposed process for chemical reviews under the Hot Spots program that coordinates with the Proposition 65 process, as a potential model for future work. As a way to illustrate this concept, OEHHA staff will present a proposed format for an upcoming chemical that will be heard before the SRP at an upcoming meeting. OEHHA will discuss the proposed process and example format with the Panel and solicit comments.

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4. Informational Update from the Department of Pesticide Regulation on 1,3-Dichloropropene (1,3-D) Emissions Monitoring Study and AB 617 Community of Shafter.

The Department of Pesticide Regulation (DPR) staff will provide the Panel with the final update on DPR's monitoring study of alternative 1,3-D application methods designed to reduce 1,3-D emissions. Part of this study was conducted around fields near the AB 617 community of Shafter. The field portion of the study began in October 2020 and concluded in October 2021.

DPR's mission is to protect human health and the environment by regulating pesticide sales and use, and by fostering reduced-risk pest management.

The panel invites public comments and accepts and encourages early submission of written comments on all agenda items (as authorized by Health & Saf. Code, §§ 39660, subd.(c)(3), 39661 subd.(b)). For Item 4 and 5 only, the panel will accept both oral and written public comments. Those interested in submitting oral or written comments related to Item 4 and/or 5 during the meeting please register in advance of the meeting via the registration link.

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5. Informational Update on the Community Air Protection Program.

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The California Air Resources Board (CARB) staff from the Office of Community Protection (OCAP) will update the Panel on current activities, focusing on the update process for the Statewide Strategy, and latest round of community selection.

In response to Assembly Bill (AB) 617 (C. Garcia, Chapter 136, Statutes of 2017), CARB established the Community Air Protection Program (CAPP or Program). The Program's focus is to reduce exposure in communities most impacted by air pollution. Communities around the State are working together to develop and implement new strategies to measure air pollution and reduce health impacts. The Panel is one of several groups being consulted about the implementation of the program. For more information on the Community Air Protection Program, please refer to their website.

The panel invites public comments and accepts and encourages early submission of written comments on all agenda items (as authorized by Health & Saf. Code, §§ 39660, subd.(c)(3), 39661 subd.(b)). For Item 4 and 5 only, the panel will accept both oral and written public comments. Those interested in submitting oral or written comments related to Item 4 and/or 5 during the meeting please register in advance of the meeting via the registration link. 119

6. Consideration of administrative matters.

The Panel may discuss various administrative matters and scheduling of future meetings. 150

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1 PANEL MEMBER BESARATINIA: I'm Ahmad Besaratinia.
2 I'm a professor of preventive medicine at USC Keck School
3 of Medicine.

4 PANEL MEMBER LANDOLPH: Morning. Joe Landolph.
5 I'm associate professor of molecular microbiology and
6 immunology and a member of the cancer center. My
7 expertise is in molecular carcinogenesis and genetic
8 toxicology.

9 PANEL MEMBER RITZ: Good morning. I'm Dr. Beate
10 Ritz from the Department of Epidemiology and Environmental
11 Health Sciences, as well as neurology at UCLA, School --
12 Fielding School of Public Health and my specialty is
13 reproductive outcomes, neurodevelopment, and
14 neurodegeneration.

15 CHAIRPERSON ANASTASIO: Great. Thank you all.
16 We also have, at some point joining us, Paul Blanc. Norm,
17 maybe you could try to connect with Paul to remind him and
18 send him the link again for the Zoom.

19 And then Kathy Hammond, who was planning to be in
20 person but will be joining us remotely in just a few
21 minutes.

22 All right. So a few administrative items for the
23 skeleton crew we have in the room. Restrooms, drinking
24 fountains, out the door to your left. If there's a fire
25 alarm, exit down the stairs, proceed out the building.

1 Masks are recommended, but not required. It's nice to see
2 all these masks. Masks and sanitizers are near the door
3 in case you need anything.

4 Today's agenda, we're going to have one major
5 item and three informational items. Arash, can you give
6 us the agenda slide.

7 --o0o--

8 CHAIRPERSON ANASTASIO: Excellent. Thank you.

9 So the major item is the 1-bromopropane reference
10 exposure level document from OEHHA. And then we'll have
11 three informational items, one from OEHHA about -- on a
12 proposed process for hot spots chemical reviews, one from
13 DPR on their emissions monitoring study of
14 1,3-dichloropropene, 1,3-D in the AB 617 community of
15 Shafter. And then the last informational item will be an
16 update by the Air Resources Board's Office of Community
17 Air Protection program, OCAP.

18 Next slide, please, Arash.

19 --o0o--

20 CHAIRPERSON ANASTASIO: Oh, is this the one
21 that's supposed to have times? Okay. So every Panel
22 member should have an agenda with times on it. I
23 appreciate you keeping us on time. So let's try to
24 keep -- do our best keeping to the time allotted for each
25 item. Of course, if we have to spill over for important

1 issues, that's fine. But otherwise, let's try to be
2 efficient in our use of time.

3 Speaking of which, let's move right to our first
4 item. The 1-bromopropane reference exposure level
5 document.

6 --o0o--

7 CHAIRPERSON ANASTASIO: So this document is from
8 the Office of Environmental Health Hazard Assessment. And
9 was available for public review and comment from January
10 7th through February 22nd, 2022. The document was sent to
11 the Scientific Review Panel for review on April 12th,
12 2022. And today, we're going to hear a presentation from
13 OEHHA staff on the development of non-cancer acute,
14 8-hour, and chronic inhalation RELs for 1-BP followed by a
15 Panel discussion and feedback to the OEHHA staff.

16 So I'd like to now introduce Dr. John Budroe of
17 OEHHA's Air Toxicology and Risk Assessment Section.

18 John.

19 DR. JOHN BUDROE: Good morning. And I'd like to
20 in turn introduce Dr. Daryn Dodge, one of my staff, and
21 he's the lead author on the 1-bromopropane REL document.
22 And he'll be making the presentation to you this morning
23 on the document.

24 Dr. Dodge.

25 DR. DARYN DODGE: Well, thank you, Dr. Budroe.

1 endorsed by the Panel. It's undergoing some revisions and
2 is currently in our group being looked at at upper
3 management. The uses of 1-bromopropane, the main use is
4 as a solvent vehicle for adhesives in laminates and foam
5 products. And it's used a degreasing cleaning agent for
6 metals, plastics, optics, and electronics.

7 It is authorized for use as an alternate solvent
8 for modified perchloroethylene dry cleaning machines in
9 California. Although I believe it's use is very limited
10 for this.

11 Next slide.

12 --o0o--

13 DR. DARYN DODGE: We don't have much information
14 on emissions in California. This is because it wasn't
15 reportable under the Hot Spots Program. We did have a
16 statewide survey that was sponsored by the Air Resources
17 Board in 2011, where a total of 160.7 tons of 1-BP
18 emissions occurred in the year 2008, primarily due -- or
19 exclusively due to solvent cleaning operations.

20 However, as of March 21st of this year, it is
21 now -- it is now reportable under the Hot Spots Program.
22 Also, February 4th of this year, the U.S. EPA amended
23 their hazardous air pollutant list to add 1-BP. And this
24 hasn't happened in many years, that is adding a chemical
25 to this particular HAP list.

1 Next slide.

2 --o0o--

3 DR. DARYN DODGE: Metabolism of inhaled 1-BP in
4 rodents is primarily through oxidative metabolism via P450
5 enzymes, conjugation with glutathione or debromination --
6 and/or debromination. In rats, the majority of the -- of
7 absorbed 1-BP may be excreted unchanged or as carbon
8 dioxide in exhaled air within four hours of end of
9 exposure. Radiolabeled 1-BP is recovered in urine in the
10 range of 17 to 23 percent. The main urinary metabolite
11 excrete is N-acetyl-S-propylcysteine. And that
12 constitutes about 37 percent of the total urinary
13 metabolites. This metabolite is found in urine of 1-BP
14 workers and it's been found in national biomonitoring
15 studies of pregnant women and children.

16 Next slide.

17 --o0o--

18 DR. DARYN DODGE: NIOSH, which stands for the
19 National Institute of Occupational Safety and Health
20 observed a strong association between time-weighted
21 average inhalation exposure to 1-BP in workers and the
22 urinary Metabolite N-acetyle-S-propylcysteine. So they
23 considered this metabolite an effective biomarker in 1-BP
24 workers.

25 Now, we have some national population studies as

1 hours or less. We'd like to base the acute REL on a
2 1-hour exposure, but often we have to extrapolate from 68
3 hours of exposure in the animal studies.

4 What we -- again, what we do find is that
5 multi-day exposure -- exposure, the protocols used by
6 researchers they look at -- they want to do exposures
7 several days to several weeks to achieve measurable
8 neurotoxic effects. It's difficult to get these in a --
9 with a single exposure of a day or less. So in rats, I'm
10 going to just give a sum -- brief summary here of the
11 effects in rats. In rats, you do see ataxia at
12 concentrations of 1,800 to 2,000 parts per million with a
13 few daily exposures less than a week. But this could be
14 due to just general CNS depressant effects that you see
15 with a lot of organic chemicals.

16 However, at concentrations of 800 parts per
17 million or more for a week has resulted in axonal myelin
18 sheath swelling of the gracile nucleus and the posterior
19 tibial nerve. Now the gracile nucleus is a nerve bundle
20 that carries information about fine touch and vibrations
21 from the lower part of the body to the brain stem.

22 So we're talking about the peripheral nervous
23 system. At concentrations of 200 parts per million or
24 greater for three weeks, this resulted in decreased muscle
25 strength of the rats.

1 Next slide.

2 --o0o--

3 DR. DARYN DODGE: We also have some information
4 about acute toxicity, subacute toxicity in mice. We have
5 a little bit different story going on here. So with the
6 8-hour -- 800 parts per million or greater in mice for 6
7 hours, results in decreased sperm motility in males is
8 part of the reason the Proposition 65 program notes that
9 there's a reproductive effect in males and females at
10 concentrations of 500 parts per million or greater.

11 This results in liver damage in the mice. Higher
12 concentrations at around 1,000 parts per million or so can
13 result in death by the end of day two of exposure. Also,
14 in mice, you see respiratory airway lesions of the
15 epithelium. This is observed at concentrations as low as
16 125 parts per million after a two-week exposure.

17 Next slide.

18 --o0o--

19 DR. DARYN DODGE: We also have some developmental
20 studies -- primarily one developmental study.
21 Developmental abnormalities or anomalies in newborn
22 rodents resulted from 1-BP exposure during gestation.
23 This is considered an acute effect and this is because
24 during gestation, there could be a sensitive point in
25 development where just a 1-hour exposure could result in

1 Next slide.

2 --o0o--

3 DR. DARYN DODGE: So we took the data from this
4 study and modeled it in a benchmark dose program by U.S.
5 EPA. We used the nested dichotomous analysis, so this --
6 we -- you know, we include the individual data here from
7 each fetus, but the term nested means it also takes into
8 account the effect or the incidence rate in each litter.

9 So our nested dichotomous model here applies a
10 line to the data. We have dose on the X axis and response
11 on the Y axis. And as dose increased, you get an increase
12 in response for the reduced skull ossification.

13 Now, there's a -- there's a vertical orangish,
14 reddish line there near 200 parts per million there. That
15 is the -- at the benchmark response rate of five percent
16 for this endpoint. And the benchmark dose falls there
17 around 200 parts per million or a little under. And the
18 purple-ish vertical line to the left is what's called the
19 BMDL. This is the 95 percent lower confidence limit on
20 the -- for the BMD.

21 That falls down at around 130, 131 parts per
22 million. Next slide.

23 --o0o--

24 DR. DARYN DODGE: So again, our benchmark dose
25 response is five percent and that's equivalent to a

1 benchmark dose of 187 parts per million. The 95 percent
2 lower confidence limit, or BMDL, is 131 parts per million.
3 131 parts per million is what we chose as our point of
4 departure for the acute REL. We did not apply a time
5 adjustment for exposure during gestation, even though the
6 exposures were 6 hours per day. And this is again because
7 of the possibility that there's a very sensitive period
8 during development where exposure for 1 hour could result
9 in this particular response or anomaly.

10 We applied human the equivalent concentration and
11 RGDR, which stands for regional gas dose ration of 1. And
12 this is what we generally use for systemic effects.

13 Next slide.

14 --o0o--

15 DR. DARYN DODGE: To our point of departure, we
16 applied uncertainty factors. For the interspecies
17 uncertainty factor, the toxicokinetic portion was 2, and
18 this is for residual toxicokinetic differences not
19 addressed by the RGDR. Our toxicodynamic portion is the
20 square root of 10, or root 10. And this is for lack of
21 toxicodynamic data.

22 Next slide.

23 --o0o--

24 DR. DARYN DODGE: For our intraspecies
25 uncertainty for, the toxicokinetic portion was given a 10.

1 organs.

2 The neurological effects include numbness of the
3 lower limbs, decreased pallesthesia, which is a decreased
4 sense of vibration, unstable gait, and difficult walking.

5 We have several occupational studies that
6 performed nerve conduction tests. The most common finding
7 was reduced conduction velocity and increased distal
8 latency in the peripheral motor and sensory nerves of the
9 lower limbs.

10 Next slide.

11 --o0o--

12 DR. DARYN DODGE: So in a case report by Sclar,
13 1999, there was a patient hospitalized following two
14 months of exposure to nearly pure 1-BP. We don't know
15 what the exposure concentration was, but it could have
16 been in the hundreds of parts per million. This was one
17 of the first nerve conduction exams of a patient poisoned
18 or exposed to 1-BP resulting in the symptoms that I
19 described on the previous slide.

20 So the sural and peroneal sensory nerves were
21 measured and there was a decrease in conduction velocity
22 sural, 29 to 36 meters per second, which is well below the
23 range of normality, which is 40 to 41 meters per second.
24 Motor dis -- nerve distal latencies were also measured.
25 And those were in the area of -- in the range of 8 to 9.6

1 milliseconds. And this is well above the normal range for
2 these nerves of 6.1 to 6.5 milliseconds.

3 Next slide.

4 --o0o--

5 DR. DARYN DODGE: Now, there was a series of
6 studies from China by Li et al. And we used this as the
7 key study for the chronic and 8-hour RELs. In this study,
8 they looked at 71 female workers from four Chinese 1-BP
9 manufacturing plants. This is one of the largest cohort
10 of 1-BP workers studies. They compared it to a control --
11 control group of 71 female workers from the same region,
12 but in industries in which they were not exposed to 1-BP.

13 Geometric mean concentration that the workers
14 were exposed to was 14.13 milligrams per cubic meter or
15 about 2.81 parts per million, mean duration was 38.8
16 months.

17 Next slide.

18 --o0o--

19 DR. DARYN DODGE: These are the results for nerve
20 conduction and distal latency tests conducted by Li et al.
21 So for tibial nerve distal latency, there was a
22 statistically significant increase in the distal latency
23 of 1-BP exposed workers compared to controls.

24 For the tibial motor nerve and the sural sensory
25 nerve conduction velocity, there was a statistically

1 significant decrease in conduction velocity in the 1-BP
2 exposed workers compared to controls. Now, for conduction
3 velocity, this was when -- within the cutoff of normality
4 for both groups the 1-BP exposed and controls. They were
5 still within the range of normal -- what's considered
6 normal for humans. However, if you notice that the distal
7 latency is increased both for control and 1-BP above the
8 range of normality. And this could be really due to
9 testing differences, or methodology differences, or
10 environmental differences that result in both groups being
11 above the cutoff.

12 For example, if the workers and controls were
13 measured when their skin was colder, this would slow
14 the -- or this would slow the -- this would slow the -- or
15 cause the increase in distal latency.

16 Next slide.

17 --o0o--

18 DR. DARYN DODGE: There should be a slide before
19 this -- should be another table. Okay. So these are the
20 results for pallesthesia. So compared to controls the
21 1-BP workers, there was an in -- statistically significant
22 increase in the vibration threshold measured in decibels
23 in the left foot, but apparently not the right foot. It
24 wasn't explained why there was a difference here.

25 For a vibration delay, measured in seconds, there

1 was an increase in the delay of 1-BP workers compared to
2 controls. For controls, it was about three seconds and
3 for 1-BP workers it was about six seconds, so about three
4 seconds longer. Now, the way they measure this is the
5 examiner or physician takes a tuning fork -- vibrating
6 tuning fork and applies it against a specific part of the
7 ankle or foot of the worker, and that the worker tells
8 them when they can't feel the vibration any more and the
9 examiner quickly moves it to his or her foot in the same
10 spot to see how much longer the examiner can feel the
11 vibration. So it was three seconds longer in controls and
12 six longer in 1-BP workers.

13 Next slide.

14 --o0o--

15 DR. DARYN DODGE: So as I mentioned several
16 slides before, we used the Li et al. study from 2010 as --
17 for the point of departure. It was a critical study. The
18 point of departure being 14.13 milligrams per cubic meter.
19 To this number, we applied a time adjustment of 10 cubic
20 meters over 20 cubic meters. And this is because 8-hour
21 working exposures are thought to result in half the air
22 breathed by a person during a 24-hour period.

23 So for a 24-hour period, you breathe 20 cubic
24 meters of air. For a working active 8-hour period, you
25 breathe half of that, or 10 cubic meters. We also have a

1 time adjustment of five days over seven days. The workers
2 were working up to five days. And in our guidelines, we
3 use seven days for the chronic REL derivation. This
4 resulted in 5.5 -- 5.05 milligrams per cubic meter.

5 Now, we apply the uncertainty factors. We have a
6 LOAEL uncertainty factor -- that's lowest observable
7 adverse effect level. We apply an uncertainty factor of
8 square root of 10. This is for subclinical findings in
9 the 1-BP exposed workers. In other words, they didn't
10 realize they were at a reduction in conduction velocity of
11 their nerves. They didn't realize that their vibration
12 sense was reduced, so we -- this is what the researchers
13 called it, subclinical results.

14 So with apply a subchronic uncertainty factor of
15 10. And this is because the exposures -- the average
16 exposure was 38.8 months. And this is less than eight
17 percent of estimated lifetime. So in this case our
18 guidelines say to apply a un -- subchronic uncertainty
19 factor of 10.

20 Next slide.

21 --o0o--

22 DR. DARYN DODGE: Total interspecies uncertainty
23 factor is 1. Because this is a human study, we have no
24 extrapolation from animal to human.

25 The intraspecies uncertainty factors though,

1 which looks at the range in variability within a human
2 population, the toxicokinetic portion we gave a full 10.
3 This is to protect infants and children. And the
4 intraspecies toxicodynamic portion is also 10. This is
5 because we consider neurotoxicity a critical effect.

6 Cumulative uncertainty factor was 3,000, which is
7 at about the limit that we would consider using an
8 uncertainty factor of this size. The chronic REL is 5.05
9 milligrams per cubic meter, divided into 3,000 resulted in
10 a chronic or proposed chronic REL of 1.7 micrograms per
11 cubic meter or 0.3 part per billion.

12 Next slide.

13 --o0o--

14 DR. DARYN DODGE: Our 8-hour REL is based on the
15 same occupational study that we use for the chronic REL
16 derivation. So the same point of departure of 14.13
17 milligrams per cubic meter. Where the difference comes is
18 in the time adjustment. So we don't have a 10 cubic meter
19 over 20 cubic meter adjustment in there, thus our 8-hour
20 REL is basically double the chronic REL value. All
21 other -- all other uncertainty factors are the same. So
22 our proposed 8-hour REL is 3.4 micrograms per cubic meter
23 or 0.7 part per million.

24 Next slide.

25 --o0o--

1 DR. DARYN DODGE: In summary, these are our
2 proposed 1-BP RELs. The acute is 3,300 micrograms per
3 cubic meter, the chronic and 8-hour are 1.7 and 3.4
4 micrograms per cubic meter respectively.

5 Next slide.

6 --o0o--

7 DR. DARYN DODGE: We had a workshop where we
8 presented this to the public several months ago. The 1-BP
9 REL document was released for a 45-day public comment
10 period on January 8th, 2022. And during this time, we had
11 a public present -- presentation that was held on January
12 26th, 2022. It was held virtually. We had no public
13 comments received on the document.

14 So normally, at this point, I would be going over
15 the public comments, but since we don't have any, that
16 concludes the presentation.

17 CHAIRPERSON ANASTASIO: Great. Thank you very
18 much Daryn.

19 So our leads for this were Mike Kleinman and
20 Kathy Hammond. So I'd like to start with that and let's
21 see if we can't get Kathy remotely first. We'll start
22 with Kathy. Kathy, can you say hi to us?

23 Kathy, we can't hear you. I can see that you're
24 not muted.

25 Victor is trying to work on it.

1 Oh, Kathy, it looks like you might be muted. Can
2 you unmute yourself?

3 We're still not getting anything, Kathy.

4 The only other remote panelist was going to be
5 Paul, but he's not on.

6 PANEL MEMBER HAMMOND: Can you -- can you hear me
7 now?

8 CHAIRPERSON ANASTASIO: Oh, there we go. All
9 right. Perfect

10 PANEL MEMBER HAMMOND: You can hear me?

11 CHAIRPERSON ANASTASIO: Yes.

12 PANEL MEMBER HAMMOND: Okay. Sorry. Technical
13 difficulties. Sorry. Sorry.

14 CHAIRPERSON ANASTASIO: Okay. Good. It's good
15 to have you with us. Kathy, go ahead.

16 PANEL MEMBER HAMMOND: Yes. Great. Okay. First
17 of all, I want to commend you all for tracking down these
18 articles in Chinese and getting those translated. It
19 added tremendously to the database with which you worked.
20 And I think we need to be doing more of that. And I've
21 been trying to do that like with my IARC meetings. And
22 I'm just really happy to see that. I just think that's
23 excellent. And I know that that's a lot of work, so thank
24 you for doing that.

25 And my -- all my other comments are really quite

1 minor. I think it's a good report. I would suggest that
2 wherever you're talking about air concentrations, you make
3 it clear it's air. Most places it is, but there are
4 places that aren't a few. And also that when you give
5 concentrations, you report either ppb or ppm, as well as
6 the micrograms per cubic meter metric. But I think
7 particularly for these materials ppm or ppb is a more
8 common thing, so those should be included in doing that.

9 Let's see. So I was interested in Table 12 that
10 it appeared that the lowest observed adverse effect --
11 adverse effect level was between 1 and 3 ppm on page 48.
12 Many of the outcomes were less than 7 ppm, but the chronic
13 REL comes in at just -- at a tenth of that 0.7 ppm. So
14 it's actually on the order of just even only half of where
15 there's a LOAEL, no even a NOAEL. I was curious about
16 that. I don't know if you have any comments there.

17 DR. DARYN DODGE: I'm sorry. Kathy, could -- is
18 this --

19 PANEL MEMBER HAMMOND: Say that again.

20 DR. DARYN DODGE: Oh, could you repeat comment.
21 I was --

22 PANEL MEMBER HAMMOND: Sure. On Table 12, for
23 instance, on page 48 -- let me pull mine up.

24 DR. DARYN DODGE: Okay. Yeah, I've got it here
25 now.

1 PANEL MEMBER HAMMOND: Okay. I'm noticing that
2 the LOAEL, lowest observed adverse effect level, for
3 instance, I'm just looking in general here --

4 DR. DODGE: Oh.

5 PANEL MEMBER HAMMOND: -- is like 1 -- this is
6 the effects in humans.

7 DR. DARYN DODGE: Okay. You -- I'm sorry. I see
8 what you're looking at now. Yeah, that's a typo. It
9 should be 2.81. Not 1.28.

10 PANEL MEMBER HAMMOND: 2.81. Okay.

11 DR. DARYN DODGE: Wait. Oh, this is for Li et
12 al. 2010a. I'm sorry. This was -- okay. This was
13 another study by Li et al. looking at many of the same
14 workers, but I decided not to choose that study, even
15 though there was a LOAEL. This is because they divided
16 the -- the workers into three groups based on --

17 PANEL MEMBER HAMMOND: Um-hmm.

18 DR. DARYN DODGE: -- based on their level of
19 Exposure.

20 PANEL MEMBER HAMMOND: Right.

21 DR. DARYN DODGE: Their level of exposure was
22 determined over one or two days of personal measurements.
23 And then they go on to say that at least -- I can't recall
24 if it was in this paper or one of the other Li et al.
25 papers, but they go on to say that the workers are often

1 rotated on among the various jobs. So --

2 PANEL MEMBER HAMMOND: Yeah, I saw that.

3 DR. DARYN DODGE: So what I gathered from that is
4 that over time their exposures are all going to be very
5 similar, because they're being rotated among jobs where
6 some exposures are less than others and others have -- are
7 more or a little higher in 1-BP. That's why I chose Li et
8 al. 2010b, which grouped all the female workers together,
9 because I think over time their exposures are all about
10 the same. Does that make sense?

11 PANEL MEMBER HAMMOND: Well, again, let's list as
12 the -- well, what's listed for that then, for 2010b, the
13 LOAEL is still 2.81, right, ppb -- ppm.

14 DR. DARYN DODGE: Right. Right, that -- right.

15 PANEL MEMBER HAMMOND: Right. And I guess what
16 I'm trying to say is if you go on to the next page,
17 there's a NOAEL of 1.2 a LOAEL of 4. My concern is that
18 there's not much safety margin here between a LOAEL and
19 the actual value that you chose of 0.7.

20 DR. DARYN DODGE: You think the uncertainty
21 factor that we had in there was not high enough? It's --

22 PANEL MEMBER HAMMOND: Well, I mean, when you
23 have -- I didn't go -- I didn't take it from that
24 perspective.

25 DR. DARYN DODGE: Okay.

1 PANEL MEMBER HAMMOND: I just looked at the LOAEL
2 and I don't normally think we set a reference standard at,
3 you know, half of the LOAEL or in this case a quarter of
4 the LOAEL.

5 CHAIRPERSON ANASTASIO: Kathy, can you -- Kathy,
6 this is Cort. Can you be a little clear where you're
7 getting this 0.7? 0.7 ppm or is it the 0.7 ppb?

8 PANEL MEMBER HAMMOND: Isn't a 0.7 ppm is the REL
9 for -- isn't that right?

10 DR. DARYN DODGE: Oh, no, it's in parts per
11 billion.

12 PANEL MEMBER HAMMOND: Oh, I'm looking at the
13 acute REL. Sorry. The acute REL is 0.7 ppm.

14 DR. DARYN DODGE: Oh, okay. Right. Right.

15 PANEL MEMBER HAMMOND: And this is the chronic.
16 But --

17 DR. DARYN DODGE: Right. The acute REL --
18 proposed REL is 700 parts per billion and the -- well, the
19 8-hour chronic REL is 0.7 parts per billion. So it's a
20 thousand fold less there.

21 PANEL MEMBER HAMMOND: Yeah. Yeah. Yes. Yes.
22 It was the chronic -- the chronic first. I was
23 misremembering. Sorry. Anyhow. Overall -- oh, I just
24 want to say I was -- I was very pleased with the
25 addition -- the really good literature review that was

1 had. And thank you.

2 DR. DARYN DODGE: Thank you.

3 CHAIRPERSON ANASTASIO: All right. Thank you
4 very much Kathy.

5 We'll turn now to Mike Kleinman.

6 PANEL MEMBER KLEINMAN: Thank you.

7 First, I want to reiterate what Kathy said. It's
8 a very nice job and I thought that putting literature
9 together the way you did was extremely good. It sends --

10 CHAIRPERSON ANASTASIO: Sorry, Mike. Can you
11 talk into the mic.

12 PANEL MEMBER KLEINMAN: Let me take the mask off.

13 CHAIRPERSON ANASTASIO: Thank you.

14 PANEL MEMBER KLEINMAN: The -- I wanted to say
15 that the way the tables were put together made it very
16 easy to follow the logic of what was going on. I think a
17 couple of minor things -- I have a bunch of minor typos
18 and things, but I can send those separately.

19 But the -- I think the justification for using
20 the developmental endpoint for the acute study, I think
21 could use a little bit more shoring up in terms of
22 explaining it. It was hard to get my head around the idea
23 that they're doing a three-week exposure over the entire
24 gestation period and, you know, saying that just -- you
25 know, there might be one day that was the sensitive time

1 point. You know, if there was a, you know, a little more
2 justification for that, I think that would be helpful.

3 But I think, on the other hand, there is
4 justification just looking at the widespread incidence of
5 the biomarker. The n-propylcysteine in children, you
6 know, in the NHANES study indicating that children are
7 being exposed, you know, all the way through. So it's
8 fair to take that as the target population. So I liked
9 that.

10 I thought where you mentioned the inhalation unit
11 risk factor - you know, up in the beginning, you mention
12 it - it would be good to just put the number in. It
13 wasn't referenced in the document. And I think just as a
14 point of comparison for people to just see it, I think
15 that would be helpful.

16 And the last thing I wanted to ask about is at
17 the end of the document, you mentioned that CARB is
18 anticipating identifying 1-BP as a toxic air contaminant.
19 It is that part of this process or is that something CARB
20 does separately?

21 DR. JOHN BUDROE: That's something that CARB does
22 separately, but it's essentially automatic under the
23 statute. I mean, they'll have to go through their
24 regulatory procedure to do it. But they are required when
25 U.S. EPA adds a chemical to the HAP list to designate it

1 as a toxic contaminant.

2 PANEL MEMBER KLEINMAN: Right. I didn't
3 understand that. That's good to know.

4 I think -- I have one more general note here.
5 There were -- there is evidence of persistent effects in
6 some of the high exposure studies. And did you factor
7 that into looking at the chronic -- chronic effects or
8 setting the chronic REL?

9 DR. DARYN DODGE: I believe it's incorporated
10 into the chronic REL at the level of the intraspecies
11 uncertainty factor. It's part of the reasoning for using
12 it tenfold for both toxicokinetic and toxicodynamic
13 portions.

14 PANEL MEMBER KLEINMAN: Okay. So there is a
15 margin of safety for these.

16 DR. DARYN DODGE: Right. That's -- that's pretty
17 much the maximum margin of safety. We -- that you can use
18 for that part of the -- for that portion of the
19 uncertainty factor.

20 DR. JOHN BUDROE: Okay. And there's also a
21 degree of protection in the subchronic uncertainty factor
22 of 10, which is less than 8 percent of lifetime. So
23 there's a certain degree of -- that's meant to account for
24 the uncertainty of what happens if you have a longer
25 exposure than the 38.8 months that you're talking about in

1 the key study.

2 PANEL MEMBER KLEINMAN: Great. Well, thank you.
3 That's good. Thanks.

4 CHAIRPERSON ANASTASIO: All right. Great. Thank
5 you very much, Mike.

6 So we'll just go around now and see if other
7 Panel members have comments. And Karen, since you're
8 right to my left, we'll start with you.

9 PANEL MEMBER MESSER: Thank you. I appreciated
10 the presentation very much. I thought it was very clear
11 and -- and very comprehensive.

12 I only had one minor technical question really,
13 which is on the slide of the graph that shows the
14 algorithm by which the lower confidence limit is
15 ascertained using the software on -- yes, on that -- that
16 graph. So this is an illustration. I'm assuming this
17 isn't actually the direct output of the program or -- or
18 is it?

19 DR. DARYN DODGE: This is the direct output from
20 the program, yes.

21 PANEL MEMBER MESSER: Okay. So that estimated
22 probable -- probability is the model -- the model output
23 from the program is what I would guess. Yeah. Okay.
24 That was --

25 DR. DARYN DODGE: Yes.

1 PANEL MEMBER MESSER: That was my question.
2 Thank you very much.

3 CHAIRPERSON ANASTASIO: All right. Great. Thank
4 you, Karen.

5 Ahmad.

6 PANEL MEMBER BESARATINIA: Well, I echo other
7 Panel members' comment, this is a really good piece of
8 work. The authors have done a good job reviewing the
9 literature, selecting pertinent papers, and summarizing
10 them, and providing the brief synopsis. The text is
11 really good and easy to follow and they have used very
12 well established modeling approaches to make their
13 derivation for REL.

14 The one concern that I have, although I
15 understand all the limitations of the published
16 literature, but my concern is regarding the choice of
17 these two key studies that were used for REL of these two
18 study. One is a non-published, non-peer reviewed study,
19 which is sponsored by a consortium, and the other one, the
20 Li et al. is a Chinese study, a foreign language study,
21 which was basically translated into English for OEHHA.
22 Both study, particularly the second one, has limitations.
23 And you rightfully indicated them in the text towards the
24 end. There are missing data. There are certain
25 parameters that are vaguely described. Exposure

1 assessment is not complete, and so on and so forth.

2 In academia, in the field that I work, these type
3 of studies are rarely referenced in a report, or a
4 publication, or a grant, let alone to be used for
5 benchmarking purposes. I would assume for regulatory
6 purposes, the standard should be much higher and stricter.

7 That is what I see going through this, but of
8 course, I understand how your hands are tied, given the
9 limitations of the availability of the published
10 literature, but I just wanted to bring this up to see how
11 the Panel or you feel about it.

12 DR. DARYN DODGE: Yeah. Those are valid points.
13 We -- we decided to go with the Chinese study for the
14 chronic REL, because it -- there was basically three
15 studies that looked at the -- about the same group of
16 people, quite a bit of information. But, you know, it
17 does have its -- it does have its limitations. But we
18 like to go with human studies, if at all possible, rather
19 than to resort with two animal studies. That's why we
20 have that table in the derivation section that looks at
21 other alternative RELs based on animal studies. And they
22 all fall -- the closest one was within threefold, but it
23 was higher than the value we got based on the Chinese
24 study.

25 So that's one -- that's one of the reasons we put

1 those alternatives -- alternatives there. You know, in
2 case we decide that the Chinese study was not strong
3 enough, we can resort to these or at least we can point to
4 these to show that we are being protective, because the
5 Chinese study the resulting acute -- or chronic REL is
6 lower than any of the other endpoints that were used in --
7 you know, that were from animal studies.

8 PANEL MEMBER BESARATINIA: Thank you.

9 CHAIRPERSON ANASTASIO: Thank you, Ahmad.

10 Joe, any comments?

11 PANEL MEMBER LANDOLPH: I agree with everything
12 the other Panel members have said so far. The document is
13 well and comprehensively researched from the literature.
14 It's very well written. It's been reviewed extensively
15 and they've answered the reviews. And it's interesting to
16 see how, as far as dry cleaning is concerned, we started
17 with PCE, we went to TCE, we went to TCA, and now we're at
18 is 1-bromopropane.

19 And so I think you're absolutely right to be as
20 health protective in this document as you can. And that
21 seems to be what we want. So I congratulate you also.

22 CHAIRPERSON ANASTASIO: Great. Thank you, Joe.
23 Beate.

24 PANEL MEMBER RITZ: Yeah. I completely agree,
25 well written. I enjoyed reading all the worker health

1 studies. Thank you for putting those in. They were
2 really well described as much as you could describe them.

3 And, I mean, I don't have much to add, except
4 that I'm very surprised to see how much workers were
5 harmed and then described as not employed anymore, but
6 still having severe effects years later. So that --
7 that's very unnerving for somebody within worker
8 protection.

9 The other thing that I was wondering was -- I
10 mean, these peripheral nervous system effects are
11 sometimes subtle, but sometimes not so subtle. And they
12 are describing effects on the central nervous system,
13 including depression and some cognitive outcomes. And
14 that's what kept my interest, because those are more
15 subtle. And when you are aging, you know, these effects
16 can compound quickly. And then seeing that the U.S.
17 population basically is exposed, 99 percent, that makes me
18 wonder about long-term chronic effects even at low doses,
19 so -- but, of course, there's nothing we have in terms of
20 information about any of this. And these workers were all
21 young, so I think you did the right thing going with the
22 females here.

23 Thank you.

24 CHAIRPERSON ANASTASIO: Great. Thank you, Beate.
25 I'm looking over at Victor and Arash, now any

1 connection from Paul? Has he joined us?

2 No. Okay. We won't -- we will skip Paul then.

3 I just had a few comments. One, line 1433 to 35,
4 the sentence is just confusing. Whenever you read it, I'm
5 sure you will be able to figure out what word might be
6 missing. So that's 1433 through 35.

7 Second to kind of mirror what Mike was saying
8 about including the IUR value, I think it's always helpful
9 to have the EPA values. So if there are EPA values, it's
10 nice to include those, so we can just compare what you've
11 re -- what you've come up with versus what EPA came up.

12 I'd like to also reiterate the point that I
13 thought the alternative REL derivation was very helpful to
14 just see what the animal endpoints was giving us versus
15 what you had for the human endpoint.

16 And then the -- my only other comment is in Table
17 2, which is the -- so like page 27. This is the
18 acute/subacute effects -- actually, sorry. It's page 26.
19 So you've got the Huntingdon Life Sciences Study here,
20 which is the study you used for the REL, but this isn't
21 the endpoint that you used for the acute REL, right?

22 DR. DARYN DODGE: Yeah, that's correct. These
23 are effects that were seen acutely, I believe, in the --
24 in the mothers.

25 CHAIRPERSON ANASTASIO: Right. And this was

1 skull ossification in the offspring.

2 DR. DARYN DODGE: Right.

3 CHAIRPERSON ANASTASIO: So are those in another
4 table?

5 DR. DARYN DODGE: Yeah, the developmental effects
6 were in a developmental table --

7 CHAIRPERSON ANASTASIO: Oh, okay.

8 DR. DARYN DODGE: -- later in the document.
9 Yeah.

10 CHAIRPERSON ANASTASIO: It just might be helpful
11 in the acute table, because that's where I was looking
12 for, you know, going back and forth between the REL and
13 the table to just make -- either repeat the skull
14 ossification endpoint, LOAEL and NOAEL there, or just make
15 a note in the table where that data is in the text.

16 DR. DARYN DODGE: Okay. I'll do that. Yeah.

17 CHAIRPERSON ANASTASIO: Yeah. And that was --
18 those were my only comments. Yeah, again, as every panel
19 member has said, very nice job. So thank you, OEHHA.

20 And any final comments?

21 So we are running way ahead of time, which is a
22 fantastic place to be. I appreciate that.

23 Dr. Krishnan, are you prepared?

24 DR. KANNAN KRISHNAN: Yes.

25 CHAIRPERSON ANASTASIO: Okay. Is there any

1 reason we should wait?

2 DR. KANNAN KRISHNAN: No.

3 CHAIRPERSON ANASTASIO: Okay. Then thank you
4 very much, John and Daryn. And let us push ahead with the
5 first informational item

6 DR. ARASH MOHEGH: Before we push ahead, there is
7 one Q&A comment but I believe we are not accepting public
8 comments.

9 CHAIRPERSON ANASTASIO: Yeah. So just to clarify
10 for the public, the -- by statute, the Scientific Review
11 Panel does not take public input on health guidance
12 values, so we will be following that procedure. Yeah.

13 DR. ARASH MOHEGH: Another point is that there
14 was a scheduled 10-minute break here.

15 CHAIRPERSON ANASTASIO: There was, but we're way
16 ahead time, so we're going to push forward and then we'll
17 take our break probably after the next presentation.
18 Yeah, but thank you, Arash.

19 Okay. So our next item is our first
20 informational item regarding a proposed process for hot
21 spots chemical reviews. And please welcome Dr. Kannan
22 Krishnan who's Chair of the Air and Site Assessment
23 Climate Indicators Branch at OEHHA, who will be making the
24 presentation.

25 (Thereupon a slide presentation.)

1 CHAIRPERSON ANASTASIO: Dr. Krishnan.

2 DR. KANNAN KRISHNAN: Thank for the kind
3 introduction.

4 And we with here today is Dr. John Budroe, Chief
5 of Air Toxicology and Risk Assessment Section. And
6 joining us online is Dr. Vince Cogliano, Deputy Director,
7 Division of Scientific Programs at OEHHA.

8 This informational presentation is on proposed
9 process for hot spots chemical reviews, specifically on
10 leveraging authoritative sources to develop OEHHA
11 documents. Now, let me invite Dr. Cogliano to make some
12 introductory remarks before I continue.

13 Vince.

14 DR. VINCE COGLIANO: Thank you very much, Kannan
15 and good morning, everybody. I'm really pleased to be
16 bringing this informational item to the Panel today. In
17 my career at different public health agencies, I've found
18 the occasion to sometimes work on the same chemical at
19 more than one place. And there's good reasons for that
20 sometimes. You have newer studies since the previous
21 assessment was done by somebody else or another assessment
22 was of more limited scope, say perhaps only one exposure
23 route, or your agency has particularly guidelines for how
24 it conducts the evaluations of studies, or the public
25 comments and peer review periods and you have to follow

1 those procedures. So there are good reasons for multiple
2 agencies doing reviews of the same chemical.

3 But sometimes, we're doing part -- some work that
4 I wonder are we really adding value? For example, when
5 we're adding -- when we're writing dozens and dozens of
6 pages of descriptions of another study and another agency
7 has done that really well. I sometimes wonder is this the
8 best use of the taxpayers' money to have us redo the work
9 of other agencies? And so you think about why can't we do
10 this more like is done in the scientific community and
11 build on the work of other peer-reviewed science and site
12 work that's done that can be incorporated without
13 compromising the integrity of our own product.

14 So we started thinking about this in OEHHA about
15 how we might streamline the development of our
16 assessments. And we're pleased today to bring you some of
17 the ideas that we've had and to have a discussion with you
18 about this.

19 So I'd like to turn it back to Dr. Kannan
20 Krishnan who's the new chief of our Air and Site
21 Assessment and Climate Indicators Branch. And you may
22 know Dr. Krishnan's name from his many publications in the
23 field, particularly in pharmacokinetics. And also, he
24 comes to us from having a 25 or so year career at the
25 University of Montreal as a professor and then working at

1 one of Canada's largest public health agency for worker
2 safety.

3 So with that, I'd like to -- it gives me great
4 pleasure to introduce Kannan Krishnan again and turn the
5 presentation over to him.

6 DR. KANNAN KRISHNAN: Thank you, Dr. Cogliano.
7 Can I have the next slide, please.

8 --o0o--

9 DR. KANNAN KRISHNAN: So today's presentation
10 essentially focuses on the first step of the continuum
11 leading to the production of the document -- the final
12 document on reference exposure levels, RELs, for
13 non-cancer health effects, and cancer inhalation unit risk
14 values, referred to as IURs.

15 So you see here the four boxes capturing the key
16 steps, starting with the OEHHA internal consisting of a
17 literature review, evaluation, and draft document
18 development. Then public input by way of written comments
19 and in workshops. Then SRP review and divisions leading
20 to the final document.

21 The focus of this presentation and discussion is
22 no the first box here right on the top.

23 Next slide, please.

24 --o0o--

25 DR. KANNAN KRISHNAN: To develop hot spots

1 assessments, OEHHA conducts comprehensive search and
2 evaluation of the scientific literature in each case. And
3 the OEHHA documents contain detailed study-by-study
4 descriptions on the text on the development of dose
5 response analysis to develop the health guidance values,
6 as you have seen.

7 And the draft documents are submitted for public
8 and SRP reviews at the rate of about one to three
9 chemicals per year.

10 Next slide, please.

11 --o0o--

12 DR. KANNAN KRISHNAN: In a draft document such as
13 the one reviewed earlier today, typically we find
14 descriptions of use and occurrence with a focus on
15 California-specific data, full descriptions of
16 toxicokinetics, key mechanistic data on health effects
17 studies, as well as dose response analysis performed,
18 preferably using inhalation exposure studies.

19 Despite the usefulness, the detailed
20 study-by-study descriptions in some cases can be time
21 consuming, can end up repeating the descriptions found
22 elsewhere that is in other authoritative sources, and may
23 not add value to the overall assessment.

24 Next slide, please.

25 --o0o--

1 DR. KANNAN KRISHNAN: Considering the many
2 chemicals without cancer and non-cancer health effects
3 values and the need for such values. Now, in this
4 context, we can refer to updates to Emissions Inventory
5 Criteria and Guidelines Regulation chemical lists, and
6 SNAPS, Study of Neighborhood Air Near Pollution Sources
7 chemicals as examples. More rapid document development
8 essentially can then support these efforts in a timely
9 manner.

10 Thus, our internal thinking continues to focus on
11 ways to expedite, ways to improve, and make it more
12 efficient.

13 Next slide, please.

14 --o0o--

15 DR. KANNAN KRISHNAN: In this regard, what we are
16 proposing as an internal improvement is to leverage work
17 from other health agencies and OEHHA programs when
18 appropriate and feasible. Of course, when it's from
19 outside OEHHA, we will review the scope and methods used
20 in developing such a source document, I know, in view of
21 our own goals and requirements.

22 And leveraging work from other sources would then
23 call for streamlining the document contents. Basically,
24 considering what's already covered in the source document
25 used as a leverage and what additional data have become

1 available since then, it would be appropriate to produce a
2 high level synthesis rather than study-by-study
3 descriptions, which can be found in the source document.
4 So those are the situations essentially we're talking
5 about.

6 Do the proposed approach would potentially
7 improve efficiency to expedite the document development,
8 especially for chemicals for which there is a possibility
9 to leverage authoritative work done by other -- another
10 agency or program, instead of redoing the literature
11 research -- or literature review covering the same time
12 period and presenting again or developing the study
13 descriptions from scratch that has been done by another
14 agency recently.

15 Next slide, please.

16 --o0o--

17 DR. KANNAN KRISHNAN: And now there is an
18 opportunity and a need at this time to apply such an
19 expedited approach for ethylene oxide, designated a toxic
20 air contaminant by CARB in 1987.

21 U.S. EPA has come up with a recent risk
22 assessment based on human data that reports a cancer
23 inhalation unit risk, or an IUR, value that's much greater
24 than previously published based on animal data. And there
25 are efforts underway to collect data and emissions from

1 facilities handling ethylene oxide in the country. And
2 our own assessment was done in '87. And in consultation
3 with CARB, we're planning to update the IUR for ethylene
4 oxide. So here is a situation that would really benefit
5 from an expedited document development approach leveraging
6 other authoritative work done on this chemical.

7 Next slide, please.

8 --o0o--

9 DR. KANNAN KRISHNAN: So ethylene oxide is of
10 interest to the Hot Spots Program as well as the
11 Proposition 65 program at OEHHA. Ethylene oxide is to be
12 reviewed by both programs for updating, since both of
13 these programs developed estimates using animal data
14 during 1987-88, in the late eighties.

15 Now, new relevant studies have become available
16 since adoption of the Hot Spots and the Prop 65 values,
17 including new human cancer studies. So here is the
18 situation now with ethylene oxide in which you would be
19 beneficial to coordinate efforts internally, so that joint
20 development of the assessment can produce deliverables for
21 both programs at OEHHA. And updating the ethylene oxide
22 IUR can build upon the comprehensive and authoritative
23 reviews available from other health agencies.

24 Next slide, please.

25 --o0o--

1 DR. KANNAN KRISHNAN: So compared to the
2 conventional workflow then, what we propose is to start
3 out -- compared to the conventional workflow of starting
4 with the full literature review, we propose to use the
5 U.S. EPA 2016 assessment document as the base, not as the
6 starting point, as the source for full description of
7 studies published since 1987, that is since our last
8 assessment -- since the last assessment conducted by DHS,
9 Department of Health Services.

10 So OEHHA evaluation then will focus on literature
11 search since the 2016 assessment or since the 2016 EPA
12 document, and we would present an overall synthesis of the
13 relevant studies and develop our independent dose response
14 analysis, which will be described fully in the draft
15 document.

16 So the proposed approach then would result in the
17 use of the same studies on the same dose response models
18 across the two OEHHA programs, and will benefit from
19 concurrent public comment periods and reviews.

20 Next slide, please.

21 --o0o--

22 DR. KANNAN KRISHNAN: So adopting such an
23 approach, you know, in terms of leveraging other work,
24 other authoritative work, would result in streamlining of
25 the document content in a way, because we would present a

1 Thank you for your attention.

2 CHAIRPERSON ANASTASIO: Great. Thank you very
3 much, Dr. Krishnan.

4 So we open it up to the Panel for comments. All
5 right. I'll start. Oh, wait. Ahmad, no you're very
6 speedy on the hand.

7 Okay. So thinking about the background, if you
8 remember, ARB came to us -- was it two years ago now,
9 three years ago? I can't remember -- to update Appendix A
10 of the Hot Spots Program. And they have added hundreds of
11 new chemicals. And so there are -- I can't remember how
12 many hundreds of chemicals are on the list now with no
13 health guidance values. But clearly, at our pace of one
14 to three documents a year, we're never going to get
15 through them. So I am strongly in favor of any
16 scientifically justifiable way in which we can expedite
17 the process. It's a huge amount of work to develop these
18 health guidance values. And so if we can leverage work
19 that other agencies have done, that's a win for us, I
20 believe. So that's my overall comment.

21 Dr. Krishnan, I was wondering if you have --
22 might have a sense of how common this approach might be.
23 Are there lots of chemical species out there for which
24 we've already got a health guidance value document from
25 another agency?

1 DR. KANNAN KRISHNAN: I think for de novo
2 assessments and for which there hasn't been a recent
3 elsewhere or such work done, essentially that wouldn't
4 change anything. We would have to do what we have been
5 doing, and you would see exactly the same sort of
6 documents.

7 In cases where we'd be able to, you know, use
8 this as a starting point to see whether there has been a
9 recent authoritative review completed we'd be able to, you
10 know, take advantage of that and then -- and integrate it
11 in the workflow. And I wouldn't have a number to put on
12 the table. It would depend on the chemical and how
13 recently other agencies have looked at it and conducted
14 the literature review.

15 CHAIRPERSON ANASTASIO: Sure.

16 John, do you have any sense? Are there many
17 documents out there that we could leverage?

18 DR. JOHN BUDROE: If you're talking about cancer
19 documents, probably not a great deal. I mean, at least in
20 terms of documents that have come forward with a cancer
21 dose response assessment.

22 So, I mean, for example, IARC has a reasonable
23 number of chemicals out there where they've done hazard
24 identifications, but they don't do dose response.

25 So, you know, the question would be whether a

1 future cancer document would be for the bulk of the study
2 descriptions for, you know, cancer and genotox, for
3 example, that also usually goes into a cancer document
4 where it's just essentially instead of describing all the
5 genotox studies where we would just say -- put essentially
6 a summary of what's gone on and say for more detail see
7 the IARC monograph. So that would be, you know, a
8 potential avenue to go down.

9 But I think we went back when we originally did,
10 for example, the cancer potency factor of TSD and mined
11 way back when a lot of the U.S. EPA IRIS numbers that we
12 didn't have -- where we didn't have a corresponding
13 number. So we've already incorporated a lot of those.

14 And U.S. EPA doesn't come -- hasn't come up with
15 a lot of documents recently. You know, ethylene oxide is
16 one of the few that comes to mind. We've been kind of
17 actually running ahead of them on some things, because we
18 have cancer -- cancer inhalation unit risk now for cobalt,
19 and PCBTF, and 1-bromopropane that they don't have yet.

20 CHAIRPERSON ANASTASIO: So that's for cancer
21 endpoint. How about for non-cancer, do you feel -- is
22 there much out there that we could leverage?

23 DR. JOHN BUDROE: We'd have to go back and look.
24 I couldn't give you, you know, a one-to-one correlation
25 right now. You know, we have a -- they've got their RfCs

1 and they don't -- one thing I'll note is U.S. EPA does not
2 do the equivalent of an acute REL. They only do the
3 equivalent of chronic RELs, so -- and they have their
4 methodology and we have ours.

5 So even when ours -- ours tends to be more --
6 quite frankly more health protective, so we could take one
7 of their numbers potentially if they had a -- what they
8 call a RfC, a reference concentration, and we don't have a
9 corresponding chronic REL, but we would still have to make
10 sure that there weren't any -- any studies -- newer
11 studies that we needed to include, because a lot of the
12 U.S. EPA IRIS RfCs at this point are pretty old. You
13 know, so we would have to check the literature and we'd
14 want to check their point of departure for their key study
15 and go ahead and run it through our methodology to make
16 sure it worked.

17 CHAIRPERSON ANASTASIO: Okay. Thank you. So,
18 yeah, great approach.

19 DR. VINCE COGLIANO: If I might jump in for a
20 minute. Since I've come to California, I'm actually
21 pleased that OEHHA has been running ahead of the U.S. EPA
22 in generating numbers. But I think one of the real values
23 of this will be in the hazard area. So I think IARC has
24 been pretty active in identifying new possible and
25 probably carcinogens. And I think they do a very good

1 write-up. And I think those could be leveraged on the
2 cancer studies and on genotoxicity. And also ATSDR does
3 quite a few very large documents on important chemicals.
4 And I think again they -- the hazard part can be
5 leveraged.

6 I think we would intend to do our own dose
7 response analyses in most cases. So the fact that IARC
8 doesn't do dose response, I don't think should hold us
9 back, I do think that there's a lot of good writing they
10 do on the cancer studies and genotoxicity studies that we
11 could leverage.

12 CHAIRPERSON ANASTASIO: Thank you, Vince.

13 So I've just been handed a note. If someone has
14 a comment -- and so we're not actually in public comment
15 period yet, so public we're not ready for you, but if
16 anybody else has a comment, please don't put it in the
17 Q&A. We are not going to see the written comments at this
18 point. So Panel members and anyone else, including Vince,
19 please do what Vince did, which is speak up.

20 All right. So I'm going to go to Ahmad, and then
21 Kathy, and then Beate.

22 Ahmad.

23 PANEL MEMBER BESARATINIA: Yeah. Thanks, Cort.

24 I great it's great what you're proposing here.
25 And one of the goals that you are stating is to basically

1 save the taxpayer money by avoiding duplicate work and
2 doing the work that has already been done, which is a
3 commendable task.

4 I'm wondering have you given any thought to
5 publishing the reports -- the already existing reports or
6 the reports that are going to come in the coming years,
7 because these are tremendous body of works. Throughout
8 years, I've seen these reports. They're very informative.
9 They're of interest to a broad audience, including
10 scientists, researchers, and authoritative bodies.

11 It is very likely that -- it is very likely that
12 sometimes, the topics that you may want to consider
13 working on has already been done by some other bodies, but
14 the report is not in public domain, and that could happen
15 to the work of your scientists here.

16 I know there are certain scientific journals that
17 are interested in these type of reports. Although, these
18 are -- the tend to be lengthy and -- but, for example,
19 Lancet journals -- family of journals publishes these type
20 of reports from IARC, or Mutation Research, or Elsevier
21 publishers.

22 So I'm just thinking is it an option for you to
23 look into and see whether or not you can make these
24 available to a broader scientific community and other, you
25 know, stakeholders.

1 DR. KANNAN KRISHNAN: I mean, I agree with your
2 comment. And I -- and these are publicly available in the
3 sense that these are being posted in our website. So
4 certainly anyone doing like a gray literature review
5 would -- would see it.

6 But regarding the publications, what I have seen,
7 before coming to OEHHA, is that contents of several of the
8 reports have appeared in the peer-reviewed literature, but
9 I don't know about the specific program developing IURs
10 and RELs, but I have seen parts of reports being published
11 in the scientific peer-reviewed literature and -- and that
12 that significantly contributes to the knowledge base.

13 So thanks for that comment. And I'll -- I don't
14 know if anyone else wants to add to it?

15 DR. JOHN BUDROE: Just that, you know, one thing
16 with IARC and the Lancet mon -- when they publish in
17 Lancet is that I think they have a -- want to get their
18 information out really early, you know, so they publish it
19 in Lancet, you know, at least, you know, a summary of what
20 they did and then they come out with the full monograph
21 later.

22 Whereas, we have a -- essentially really have a
23 process that we have to follow that's outlined in statute.
24 So, you know, probably wouldn't want to hold up the
25 document -- a document necessarily to publish it in the

1 literature. It -- we could, I guess, think about doing
2 that down the road. But, you know, we just try to get the
3 health values out to the point where they're actually able
4 to be used in the hot spots program as soon as possible.

5 CHAIRPERSON ANASTASIO: Thank you. I mean,
6 Ahmad, I agree with the goal in terms of trying to make
7 all this work OEHHA does and other agencies more available
8 to everyone. But I feel like publishing is just another
9 step that's going to take more time. And so I wonder if
10 there's some way to somehow leverage indexing or
11 somehow -- I don't -- I don't know how one makes studies
12 more available, but I'm sensing from the hands that other
13 people do. So I'm going to go to Karen and then Beate.

14 PANEL MEMBER MESSER: Yeah. I think it's a
15 laudable point to make sure this literature is accessible,
16 but I do agree that publication takes a lot of time. And
17 that may not be in the direct Band-Aid of this process.
18 So I wonder if a review article just alerting the
19 scientific community to this resource might be a way to
20 go, you know, an overview article in Lancet pointing out
21 those resources available and directing interested parties
22 to the website.

23 CHAIRPERSON ANASTASIO: Thank you.
24 Beate.

25 PANEL MEMBER RITZ: So hearing this, I was

1 wondering why there isn't something similar to the
2 comparative toxicogenomics database or Tox21 where all
3 this data is actually available and very -- not just
4 available, but, you know, you can use it in different
5 ways. Researchers can use it and you can make comparisons
6 across studies from human studies to the tox literature,
7 which I, as an epidemiologist, normally wouldn't be able
8 to, but I can, you know, put in certain genes. I can put
9 in certain agents, and then the information is summarized
10 for me.

11 And in this day and age, I think we should go
12 towards, you know, that kind of standardization -- not
13 standardization, but making available the literature and
14 the work you're doing to the broader scientific community
15 in that way.

16 So if you're generating this information, it
17 could maybe be in a tabular form. And then with data
18 visualization tools, that people can pull this data out
19 and you never have to update it again. But you can of
20 course start with IARC and you can start with ATSDR, you
21 know, whoever has done work on that chemical, you can put
22 all the different pieces of information online in a
23 systematic manner. And that should be possible. And that
24 would live a very long life and could be very cumulative.

25 CHAIRPERSON ANASTASIO: Thank you for that

1 suggestion.

2 So I promised Kathy several minutes ago that I
3 would call on her, so I'm going to do that. Kathy, go
4 ahead.

5 PANEL MEMBER HAMMOND: Sure. Thank you.

6 First of all, I think this is a great idea at one
7 level, because as you say there are just so many chemicals
8 that need to be done, and having them redone, and redone,
9 and redoing work has limited value.

10 However, I do want to talk about where it does
11 have value. As we said earlier, most agencies are not
12 using extensive global literature. And I was very pleased
13 to see the extensive access and use of the Chinese
14 literature in this most latest document.

15 So I would encourage that as we -- you go further
16 and build upon the things that are there, and rely on
17 them, that you not only look at the literature that's been
18 published since the -- other material was done, but also
19 the literature that was omitted. But I think that that's
20 an important step.

21 And again, as has been mentioned, IARC does not
22 do a dose response, so that's an important step that would
23 also need to be done. So I think there still will be
24 plenty of work to do, but let's minimize the duplication
25 of the work for sure, so we can get more chemicals done.

1 So thank you for the ideas.

2 CHAIRPERSON ANASTASIO: Thank you, Kathy.

3 Mike, did you have a comment?

4 PANEL MEMBER KLEINMAN: Well, I was going to say
5 pretty much what Kathy said, but I do have another point,
6 and that is as you look at these compilations and pick
7 the -- you know, what they've chosen as the key references
8 and points of depart -- departure, I think you still need
9 to kind of do your due diligence and actually look at the
10 primary literature to make sure that the way they
11 interpret it is the way you would want to interpret it.

12 CHAIRPERSON ANASTASIO: Go ahead, Karen.

13 Thank you, Mike.

14 PANEL MEMBER MESSER: My comments I think will
15 echo these -- these last two comments. I think it's an
16 excellent idea, similar the way we all use Cochrane
17 Reviews when we do a literature search, but that there are
18 some caveats. And I -- the quality of the work is so high
19 here that I'm sure the natural tendency will be to do the
20 due diligence, but just to explicitly identify some of the
21 potential weaknesses in such an approach. There's a
22 question of how authoritative will be defined. In other
23 words, I think there needs to be some objective standard
24 when you say this is an authoritative reference work that
25 we're going to rely on. The need to be some standards for

1 that, so that there's no potential for eventual abuse, if
2 a less diligent team were in charge.

3 And I agree with the comment of my colleague that
4 the synthesis still needs to describe relevant details,
5 because the devil is in the details with these studies,
6 especially that the key studies need to be read and
7 described de novo. So I would think such a synthesis
8 would help to identify the key studies that are being
9 used, but that those key studies should be read from the
10 original source and still be described and also that any
11 details which may be lacking could be added. So you might
12 be referencing an authoritative document, but if there
13 were particular details needed for your process, you'd
14 still be at liberty to add them. So those -- those would
15 be the potential weaknesses that I would think should be
16 addressed in whatever workflow is set up. It's a
17 wonderful idea.

18 And then, Cort, getting back to your reference of
19 the hundreds of new chemicals, I know at that time we had
20 described -- we had discussed some sort of algorithm for
21 prioritizing them. And I just, as a separate point,
22 wanted to ask at some future time if there would be a
23 discussion of that issue.

24 CHAIRPERSON ANASTASIO: Yeah. Good point. My
25 understanding is that's not an SRP task, but that's more

1 an OEHHA task. Is that -- can you confirm or deny that,
2 John?

3 DR. JOHN BUDROE: That would be essentially
4 correct. I mean, if we could do -- we're doing tens or
5 hundreds of chemicals a year, then you might want to have
6 a prioritization scheme, but for the limited number that
7 we have the resources to actually put out, usually all the
8 slots in the pipeline get filled up between consultation
9 with CARB, or the air districts, or just seeing data sets
10 pop up out of say NTP.

11 You know, a brand new cancer data set, and lo and
12 behold, here's a VOC that's a carcinogen that we didn't
13 realize before it was a carcinogen. So those are the kind
14 of things that we put in there. And we also look where
15 the information is available for things like how much of
16 that chemical is used around the state, how many, so -- I
17 mean, you could wind up -- otherwise, you can wind up with
18 a chemical where you decide to work on it and it's a
19 carcinogen, but it's used by one facility in the state.
20 It's where do you want to put your resources.

21 CHAIRPERSON ANASTASIO: Right. Yeah. I would
22 say in regards to Karen's point, that the panel is
23 available if you want to consult with us about
24 prioritization and kind of big picture questions of
25 prioritization.

1 DR. JOHN BUDROE: Okay. We would appreciate
2 that.

3 CHAIRPERSON ANASTASIO: I think the other item I
4 would add is that I know John Faust gave us a presentation
5 some time ago about provisional health guidance values.
6 And I think that -- that offers the opportunity to try to
7 get through chemicals more quickly at least on a
8 provisional basis. And I don't know the status of that,
9 but I'd be very interested to hear at some point maybe
10 John Faust or someone else from OEHHA giving us an update
11 on where that stands.

12 DR. JOHN BUDROE: Okay.

13 DR. VINCE COGLIANO: I don't know if John can
14 speak right now, but I can say that we are -- we have
15 developed some provisional values in our -- for our SNAPS
16 Program. And we expect to be doing more, particularly as
17 we look at leveraging some of the new methods and read
18 across from structurally similar chemicals that we're
19 finding at these sites near petroleum sources. So at some
20 point, it would be good to come back and talk to you about
21 what we're -- what we're doing and what we're intending to
22 do in that area.

23 CHAIRPERSON ANASTASIO: Yeah, I think the
24 provisional health guidance values also offer an
25 opportunity for prioritization, right? You look at the

1 list. You see what you have for provisional values and
2 those that appear to be very toxic and that are used a lot
3 in the state, that would be obviously a key target for a
4 high priority full health guidance value.

5 DR. VINCE COGLIANO: That's right. I think
6 there's certainly the potential to find chemicals that are
7 present at these sources, and that we don't have health
8 guidance values for, and we might even need to look at a
9 structural analogue or try to use new methods to develop
10 tox values.

11 But it would -- it would give us some
12 chemicals -- a list of chemicals that there's a need for
13 tox values for, because people are being exposed.

14 CHAIRPERSON ANASTASIO: Thank you, Vince. Thank
15 you, John.

16 Any other -- yes, Joe, go ahead and then Beate.

17 PANEL MEMBER LANDOLPH: I agree with pretty much
18 everything that was said already. I certainly agree that
19 you should use any scientific resource that's credible,
20 you know, that's out there, assuming you trust, you know,
21 the people that did it and the credibility of the science.

22 And if you were put in a position of ignoring
23 something from an authoritative body because you think
24 it's wrong, or politics has corrupted it, or something
25 like that, then I think you should just state that we find

1 this to be not the best -- very best document and we're
2 going to depart from it at a certain position, because of
3 the following reasons, just state why, and go ahead and
4 make your own document.

5 Some situations you'll get, such as I can cite
6 the EPA with, you know, dealing with the ingestion of
7 hexavalent chromium. I mean, they fooled around with that
8 one for a long time. The document was just stuck and
9 other documents it then reviewed, and rereviewed, and
10 rereviewed. So if you think, you know, you should go
11 ahead, and if it's important enough public reason to do
12 so, just go ahead and do it and say why you're going to do
13 it, and don't -- don't hesitate to -- to go past them. I
14 think that's fine.

15 The other question is one of triage. And I think
16 that's -- you're going to have that forever. But on my
17 suggestion, there would be -- maybe you could lineup some
18 temporary IUR values or whatever you have from the
19 literature, multiply them by the number of people you
20 think are exposed in California and get a crude
21 calculation of what you think the total number of cancer
22 cases might result from exposure of that chemical and
23 triage those to the top.

24 And then you'd have the factor of both the
25 exposure and the IUR giving you a crude estimate of what

1 you think the cancer is coming down the line might be.
2 And that would probably let put some of up -- way up to
3 the top and some don't waste your time on, because you'll
4 never get to them.

5 CHAIRPERSON ANASTASIO: Thank you, Joe.
6 Beate.

7 PANEL MEMBER RITZ: I also find it very
8 interesting this tension between having a lot of data and
9 having very little data. And you having to make the
10 decision, which study to put forward for your, for your
11 assessments and then maybe ending up with one key study.
12 And that may seem to some outsiders as very qualitative,
13 and, you know, what are the criteria, and you explain them
14 to us and that's totally fine. But when you're starting
15 with a document that's already summarizing the literature,
16 you may not be able to make that discernment of what is
17 really the best study here to use, if you cannot summarize
18 the literature in some kind of meta-analytic away.

19 And then if there is a lot of data with a lot of
20 meta-analytic approaches taken, I'm -- I'm very familiar
21 with, you know, we have like one meta-analysis a month
22 coming out in certain topics right now. And I kind of
23 disagree with everyone when I read them, because I would
24 just take other values from the original literature, so
25 there's a lot I think that we don't know, so we have to be

1 kind of careful in just adopting.

2 So somebody needs to read the original
3 literature, I think, and come up with criteria of which of
4 the pieces of original literature should have gone into
5 this meta-analysis or should gone into -- or should have
6 been pulled out as the key study.

7 And I think that's a process we cannot
8 necessarily automate. But I do agree we have to -- we
9 have to, you know, encourage this being much faster than
10 it is right now. We basically need 10 panels like this to
11 make headway, but yeah.

12 CHAIRPERSON ANASTASIO: Thank you.

13 DR. KANNAN KRISHNAN: If I may add a couple of
14 comments based on what I heard about the -- about
15 leveraging work from other sources and agencies.

16 One is that I agree with the idea that there
17 needs to be an evaluation step. I think I indicated that
18 in slide 6. So it's not a -- it's not blindly relying on
19 one, but rather having an evaluation of a document for --
20 before we use it for our purposes and requirements. So
21 that is well taken. There are various criteria that one
22 can think of in doing that. That's one.

23 The other thing is this in a lot of the cases
24 here, we're talking about actually making use of the
25 literature research and the literature review that's been

1 done by another agency, and that we consider useful. I
2 think that's where it makes a difference. It's not --
3 it's not always thinking about adapting a value, but, you,
4 know leveraging the lit search and the descriptions that
5 have been developed.

6 If you remember the document you reviewed today,
7 every study is described. Those were study-by-study
8 descriptions. If that has already been done, and I don't
9 see any judgment in there, because each study is described
10 in a factual manner in all the treatment groups, and the
11 doses, and the observations, and so forth. And it would
12 be of value to be able to make use of it, and then, you
13 know, if we have something to lean on, and then build on
14 it. I mean, that's the proposal for ethylene oxide
15 essentially. So I just thought I would clarify that.

16 So it's not automatically adopting the entire,
17 but, you know -- so I just wanted to clarify.

18 PANEL MEMBER RITZ: Can I just intersect one
19 thing. Yes, you're absolutely correct, if it's just, you
20 know, this is the literature that's out there without
21 value judgments, that's totally fine. I just see in
22 epidemiology, and that's where my expertise is, that
23 oftentimes certain case control studies are excluded,
24 because, oh, that's a case control study, and I would
25 totally disagree with the value judgment that's put on

1 certain studies.

2 DR. KANNAN KRISHNAN: Yeah, that's why we would
3 look at the method used buy the -- you know, in the source
4 document, and essentially there's an exercise of scope and
5 problem formulation in it -- in our documents. You know,
6 that would really situate where we stand and how we use
7 the source document.

8 Thank you.

9 CHAIRPERSON ANASTASIO: Yes, Karen.

10 PANEL MEMBER MESSER: Yeah, I appreciate this
11 thoughtful discussion and the suggestion. Is it
12 appropriate for me -- I really appreciated the detail that
13 Dr. Dodge and the diligence that he put into the current
14 document. Would it be appropriate to ask Dr. Dodge for
15 his comments on how useful this might be, or benefits, or
16 cautions from that perspective?

17 DR. DARYN DODGE: Yeah. I think it would be very
18 useful, especially in the case of ethylene oxide as Kannan
19 pointed out. We've got a great background of literature,
20 and summaries, and reviews that U.S. EPA -- U.S. EPA did,
21 you know, up to 2016. So I -- if I had -- if I was going
22 to be doing ethylene oxide - I might pulled in at some
23 point to help out, but I won't be the lead on that - I
24 would really want to concentrate on everything that's been
25 going on, all the published literature since 2016.

1 Ethylene oxide, there's a lot of information out there,
2 you know, even compared to 1-bromopropane to review, even
3 since 2016, I believe. So, yeah, I -- I agree with this
4 process.

5 PANEL MEMBER MESSER: Okay. Thank you. I think
6 that's very helpful to hear from the people who are doing
7 the work. Thank you.

8 DR. VINCE COGLIANO: Yeah. If I could also
9 elaborate on that. I think that the tables and the
10 quantitative data that you found helpful in Dr. Dodge's
11 presentation, would be present in any dose response
12 analysis we do. So the key studies that are used for dose
13 response assessment, we would have very detailed
14 information in the document, also why we picked those
15 studies. So you will see that.

16 What you -- what we're proposing not to do is to
17 take -- you know, have those paragraph-by-paragraph study
18 descriptions of the studies that did not prove to be
19 critical. And so that should hopefully make a shorter
20 document and one that focuses really on the critical
21 information. But when dose response analysis, we do
22 intend to do our own Dose response analysis, and you
23 can -- all th details about the method we used, the
24 studies we chose, and the calculations.

25 CHAIRPERSON ANASTASIO: Thank you, Vince. Joe,

1 one last comment.

2 PANEL MEMBER LANDOLPH: Yeah. Sorry. Yeah.
3 Geez, it seems to me a lot of these chemicals must be of
4 concern to the EU. And, you know, there should be some
5 effort at a higher level to get more people more countries
6 involved that are in synch with us in terms of thinking of
7 protection of the public health, because it just seems
8 ridiculous that all these separate values keep being
9 generated. And it's a huge amount of work. You know, I
10 can see just from looking at the document you guys put
11 together already. So maybe through your agency leads,
12 maybe you could discuss whether there's a possibility to
13 ally with other scientific agencies and other countries on
14 a select group of say high priority really toxic chemicals
15 that all these countries deal with.

16 CHAIRPERSON ANASTASIO: I imagine every agency
17 has their own procedure in terms of how one develops the
18 health guidance value. But it may -- at least maybe that
19 would work for the literature review component of it, if
20 you could somehow divvy that up.

21 DR. JOHN BUDROE: To a point, I've tried to us
22 REACH for example, to get information on chemicals and
23 I've been vastly disappointed.

24 CHAIRPERSON ANASTASIO: Okay. Yeah.

25 DR. VINCE COGLIANO: Well, I think this is

1 something that we will continue to discuss. And I would
2 think that 10 or 20 years out there might be more
3 cooperation between agencies, but there are still
4 differences in procedures. So like we have the statute
5 here about having our documents reviewed by the SRP and
6 having two public workshops in California before the
7 adoption of these numbers.

8 So there has to be some way of taking something
9 common and still tailoring it to the specific statutes and
10 mandates that different agencies have, but I think there
11 is a core of science, like what is the literature base,
12 what's the literature search, what's a factual rendition
13 of the studies that perhaps we could all share more than
14 we -- we've been able to do in the past.

15 There's also scientific efforts that go on, like
16 at the World Health Organization, the toxicity equivalency
17 factors for dioxin. It was an international effort that
18 had a lot of people from government agencies and academic
19 institutions survey the literature and make expert
20 judgments that have stood the test of time and have been
21 able to be adopted by many agencies.

22 So perhaps in some very contentious issues, there
23 will be efforts -- more efforts like that as well.

24 CHAIRPERSON ANASTASIO: Great. Thank you, Vince.
25 So with that, I'd like to wrap up the discussion

1 of this. Thank you, Dr. Krishnan. I -- you know, as we
2 could hear from the Panel, we were all in favor of methods
3 that can expedite the process, while still bring all the
4 scientific rigor that we know OEHHA brings to bear on
5 these documents. So thank you for that and we look
6 forward to hearing about ethylene oxide.

7 So we are doing very well on time. And so what I
8 would like to do, but I want to clear it with Minh first
9 is we're going to have a DPR presentation. It was planned
10 for after lunch, but I'd like to move it up. We're going
11 to take a 10 minute break. And I'm hoping that Minh will
12 be able to speak with us, give us his presentation in 10
13 minutes. And I'm going to clear that with Norm and make
14 sure everybody is on board, but that will be the plan.
15 Please reassemble in 10 minutes. Hopefully to hear the
16 DPR presentation on 1,3-D. Thank you very much, everyone.

17 (Off record: 11:28 a.m.)

18 (Thereupon a recess was taken.)

19 (On record: 11:40 a.m.)

20 CHAIRPERSON ANASTASIO: All right. Good morning,
21 everyone. We're back. Our next item is our second
22 informational item. It's an update from the Department of
23 Pesticide Regulation on 1,3-dichloropropene, also called
24 1,3-D, an emissions monitoring study that DPR did in the
25 AB 617 community of Shafter.

1 We're going to first have a presentation from Dr.
2 Minh Pham, who's the Branch Chief of Environmental
3 Monitoring Branch, Pesticide Programs, Division of CDPR,
4 and then we're going to have Panel discussion, and then we
5 will have public comments. We will allow public comments.
6 So I'll talk about the process for public comments at the
7 end of the Panel discussion. So if there are members of
8 the public who would like to comment on this, you will
9 have a chance after we've done the first two components.

10 So with that, I'd like to give a warm SRP welcome
11 to Dr. Minh Pham.

12 (Thereupon a slide presentation.)

13 CHAIRPERSON ANASTASIO: That's how warm our
14 welcomes get, Minh, so --

15 (Applause.)

16 DR. MINH PHAM: That was -- that was -- that was
17 very warm. Thank you.

18 (Applause.)

19 CHAIRPERSON ANASTASIO: There we go. All right.

20 DR. MINH PHAM: Thank you. Thank you.

21 I don't know what I did to deserve that, Cort,
22 but thank you so much.

23 So again, my name is Minh Pham. I'm with the
24 Department of Pesticide Regulations here today to speak
25 about 1,3-dichloropropene, specifically with the

1 mitigation pilot. We've been in collaboration with Kern
2 Country and specifically the community of Shafter. So I'd
3 like to go through that with you here today.

4 If I can get the next slide, please.

5 --o0o--

6 DR. MINH PHAM: So just a quick agenda. I'm
7 going to touch bases with the background, kind of how the
8 pilot project developed in our collaboration with the
9 County and with the community itself; update on the actual
10 mitigation pilot, which we wrapped up earlier this year;
11 preliminary results and some comparisons; and also, some
12 key next steps for us as a Department.

13 Next step please -- next slide, please. Sorry.

14 --o0o--

15 DR. MINH PHAM: So just as a quick background,
16 1,3-dichloropropene, which I'll be calling 1,3-D
17 throughout this -- and if I do a bunch of acronyms and
18 you're lost, just let me know.

19 So this is a preplant fumigant, used to control
20 nematodes, insects, and various other diseases in soil.
21 It's major uses in California include fruit and nut trees,
22 strawberries, grapes, and carrots, specifically for this
23 area. We're looking at the fruit trees based on the --
24 and I'll get into a little bit more of the work, but we're
25 looking at the fruit trees and nut trees in the area.

1 It's currently registered and managed as a
2 restricted material, so it does have some extra key
3 requirements that it needs to go through prior to its use.

4 Specifically, for the -- for the community of
5 Shafter and the AB 617 group that we've been working on --
6 working with, I'm sorry, there was some concerns and
7 interest in 1,3-D emissions and how we go -- can go about
8 reducing that. So the key question that I went back to my
9 team with is how can we achieve this. I know we talked
10 before about TIF tarping, the plastic tarp -- the Total
11 Impermeable Film tarping that we typically see. That is a
12 good standard for effective emissions reductions, but we
13 know there issues with that. I mean, tarping is
14 expensive. Is it practical in certain regions? There's
15 an element of disposal that comes along with it that we
16 need to deal with.

17 So we went back to the drawing board and took a
18 look at what we've done in the past for various other
19 chemicals and looked at potential pathways that we can
20 mitigate this in a different way.

21 Next slide, please.

22 --o0o--

23 DR. MINH PHAM: So again the background, the
24 goals of the pilot. Again, we were trying to develop a
25 feasible mitigation option and really study 1,3-D

1 emissions and its cape -- it's capabilities for these new
2 mitigation options that we're putting in there. So we
3 wanted to not only maintain grower flexibility and
4 applicator flexibility, but again, there's a lot of
5 feasibility and California's regional specific needs that
6 we wanted to incorporate into our study.

7 And ultimately, we wanted this study to -- the
8 result of this study to effectively go into our ongoing
9 work by bystander exposures for 1,3-D and the rulemaking
10 process that we have set up for that as well.

11 Next slide.

12 --o0o--

13 DR. MINH PHAM: The partnership with Shafter,
14 we've -- we're not stranger to Shafter. We've been there
15 for the air monitoring network since 2017, but we've
16 actually been there since 2011 doing various other
17 studies. So we've been in the community working with
18 local schools and the county through all those years.

19 In this specific project, we were able to
20 collaborate with CARB and the AB 617 steering community.
21 And then, you know, providing them technical support for
22 their concerns and hearing what they wanted to come out of
23 this -- this collaboration. Obviously, we're there in
24 partnership with Kern County agricultural commissioners,
25 and, you know, this was again an opportunity for us to

1 interact directly with the locals specifically with the --
2 how the AB 617 structure is set up.

3 But furthermore, I think it was a good
4 opportunity. The region of Shafter allowed us to leverage
5 some unique geological and weather, you know, interest
6 that we had when we were doing this study. And I'll kind
7 of go into it more, but there's a rhyme and a reason to
8 when we selected the pilot studies for the area and also
9 what methods we -- we were also selecting for the -- for
10 the region.

11 Next slide, please.

12 --o0o--

13 DR. MINH PHAM: So as I mentioned, the mitigation
14 pilot project did complete at the beginning of this year.
15 We ran through about a year and a half doing the study.
16 We were able to get five field studies completed. In
17 comparison, we typically only do one field study a year.
18 So this was a huge endeavor by DPR's team, and, you know,
19 a lot of cooperation across the board.

20 We were able to do this in Kern County, Merced
21 County, Stanislaus County, and Sutter County. And here,
22 speaking about the field studies, these are some of the
23 mitigation measures that we were looking at. So
24 obviously, we know that we wanted to get comparable
25 emissions reductions to that, which TIF tarping gets, but

1 we also wanted to validate our computer modeling in
2 this -- in this whole endeavor and also build out the
3 library that we have for our soil data, our weather data,
4 and a couple other things that are used for modeling
5 inputs.

6 We looked at higher soil moisture. I think that
7 was one of the key factors that we noticed that would help
8 the suppression of emissions. We also looked at soil
9 compaction, which is a practice done with other fumigants.

10 Deeper injection. This is one of the things that
11 we were really curious about because this allows us to
12 essentially put the inject -- put the fumigant down deeper
13 into the ground allowing both the soil and the soil
14 moisture from the top to serve as a -- as a pseudo tarp,
15 if you will.

16 And then some of the other things that we just
17 kind of ballparked around was this idea of a 50/50 tarping
18 or a -- you know, like strategic tarping for the edges or
19 some combination of all these things. So the team was
20 kind of being open-minded about what we can and can't do.
21 But then when we went out to talk to the county
22 agricultural commissioners, to the applicators, to the
23 counties, we kind of had to incorporate what is actually
24 likely to be used on the field. So one of the things that
25 I typically tell everybody is my team does a great job

1 we'll actually get monitoring results at the time of the
2 application as well as times thereafter.

3 So as I mentioned, first four days every six
4 hours around the clock. It makes for a very fun time at
5 two, three in the morning when you're struggling to see
6 any kind of light out there in the field. And then
7 thereafter, we switched to a 12 after -- 12 hour sampling
8 duration for days five through nine. That's from our
9 understanding of the behavior of the fumigant and how it
10 disperses off of the soil.

11 Yes.

12 PANEL MEMBER MESSER: Just a clarifying question,
13 time zero is the time of application?

14 DR. MINH PHAM: Time zero is actually the day
15 before. So -- actually, no, you're right. Time zero --
16 time zero is at the time of application and then we have
17 between 11 and 24 hours before, and then nine days after.

18 PANEL MEMBER MESSER: Thank you.

19 DR. MINH PHAM: Some of the key elements that we
20 also were able to take advantage of is collection of
21 field characterization. So we did field samples for all
22 of our studies. We also had field moisture, which was a
23 big element for us as well. So WE developed a field
24 capacity experiment that we would so, we would know the
25 field capacity, and as I mentioned before the real-time

1 do sample analysis and a separate laboratory analysis. We
2 will -- we plan to take a look at their study and kind of
3 use it in collection with a lot of the other stuff that we
4 do, but we have yet to kind of go through the quality
5 analysis of that.

6 So as you can see there, the two highlighted for
7 Shafter and then the other three studies for the other
8 counties, along with the different mitigation options that
9 we had done there.

10 One of the reasons I -- I put this in here, so
11 the first study for Shafter was performed in November, so
12 in the fall of 2020. And that we did an 18-inch injection
13 with higher moisture. We think this would be a typical
14 practice that would -- the county would transition into,
15 because around this time you would anticipate natural
16 rain. So it would be an easy move for the county and the
17 most practical way to do it.

18 And then we did the 24-inch deeper injection with
19 a compaction level and that occurred in Shafter in May.
20 So that's more of a spring/summer application and we
21 believe that that's probably the most feasible, because
22 it's dif -- some -- in some areas, it's difficult to get
23 water. And I think this deeper injection with the
24 compaction -- will take in the compaction. Now, the
25 deeper injection is probably the most likely pathway that

1 18-inch you can have it further out. So whether it be
2 lucky or not, we were able to get it in the right places.

3 So next slide.

4 --o0o--

5 DR. MINH PHAM: So digging deep into our -- our
6 analysis here, I want to -- I apologize for this graph.
7 So calling to this graph, we actually wanted to take in --
8 take into comparison a couple of historical studies. So
9 the blue on the background there, that's our Knuteson
10 study, which is a historical just plain 18-inch injection
11 that's typically done. So we used that as almost like an
12 upper bound for emissions. And then we took a look at our
13 Lost Hills study, which incorporated TIF tarping. So we
14 kind of looked at that as our lower bound.

15 So if you look at there, Shafter is the red line.
16 So we are hitting essentially in the middle, which what we
17 were anticipating when we were initially modeling out the
18 work done here, so the monitoring data was able to
19 recognize that.

20 So next slide, please.

21 --o0o--

22 DR. MINH PHAM: A couple of numbers here for the
23 bar graph. So our results were very promising. So in
24 comparison just really quickly here, the black line here
25 is that 18-inch injection historical and the blue line is

1 --o0o--

2 DR. MINH PHAM: Digging more into the numbers
3 here, you're looking at upwards of 65 plus percent overall
4 are reductions from the -- from the traditional 18-inch.
5 And we're actually falling below the TIF -- the TIF peaks.
6 So again, we're digging more into validating that -- those
7 numbers. But if this holds to be true, then we think that
8 we have a very good method for An alternative here.

9 Next slide.

10 --o0o--

11 DR. MINH PHAM: So really briefly, I just wanted
12 to show across the Board what we're looking at for the
13 other studies. I think on the left -- sorry, on the
14 left-hand side there, you'll see the two historical
15 studies. So the first one is that 18-inch I mentioned it
16 and then the second is the TIF tarp historical.

17 So in comparison to all the studies that we did,
18 we are exactly where we thought that we were going to
19 model out to, so -- I'm sorry, monitor out to. So
20 we're -- we're well below traditional 18-inch injection
21 and we're floating in and around TIF tarping. So the --
22 getting the comparable emissions reductions that a TIF
23 tarping would give you without the addition -- the
24 addition of the plastic is very promising for us. And
25 that's, you know, what the team strived to set out to do.

1 And we're hopeful that the data followed through with what
2 we were thinking there.

3 And these are -- just to really quickly touch on
4 the different methods. It's not just going to be just for
5 the Shafter region, but I think statewide this offers
6 essentially a menu of different options that a grower can
7 use to meet their -- either setback distances or emissions
8 reductions. And I think overall, we anticipate a shift in
9 the market towards these anyways. So we'll -- I'll touch
10 on that as we get into the next few slides here.

11 Next slide.

12 --o0o--

13 DR. MINH PHAM: So next steps. Obviously, the
14 team is trying to build out, like I mentioned, a robust
15 library. So we have these fluxes. We have added
16 additional soil libraries and weather information. All
17 that will be fed into our modeling for fluxes across the
18 state, different scenarios, different inputs that we can
19 use.

20 Excuse me.

21 So, with that, we anticipate refining those
22 computer modelings to be as close as possible to what
23 we're seeing from a monitoring standpoint. I think in the
24 last iteration that I talked to the team, we were
25 actually -- for most of our modeling, we were actually

1 pretty close. So I have the number somewhere. I'll get
2 that really quickly.

3 But I think initial -- initial work showed that
4 we were within like two -- two times the mean I believe.
5 So I'll have to double check that. But overall, our
6 modeling looks impressive.

7 What all -- does all this mean? Well, in -- as I
8 mentioned before, we're going to include our monitoring
9 and modeling work in the future rulemaking efforts. That,
10 along with toxicology from our Human Health Assessment
11 Branch and a couple of other groups within the Department,
12 we're looking to put out a rulemaking that will address
13 acute and cancer risk for 1,3 for the state. We're on
14 track to do quarter four, so at the end of this year to
15 start that notice.

16 Add I think that should wrap me up.

17 Next slide is just my contact information --

18 --o0o--

19 DR. MINH PHAM: -- should you have any additional
20 questions for me, but I can also field them now.

21 CHAIRPERSON ANASTASIO: Great. Thank you very
22 much, Minh.

23 Questions from the Panel?

24 PANEL MEMBER KLEINMAN: How do these count or
25 compare with respect to the cost of TIF tarping?

1 DR. MINH PHAM: So it's significantly less. TIF
2 tarping I think the last estimate we got was I think a
3 thousand per acre to lay down the TIF itself. So you're
4 talking about not only the raw material but the additional
5 tractor that it would need to pull. So there's some cost
6 for diesel and all that stuff for the -- for the
7 additional tractor.

8 With this, from what we talked to the applicators
9 for, it's significantly less. It's a little bit more than
10 the -- than what is being cost of the 18-inch, but it's
11 not significant from what we're told.

12 PANEL MEMBER KLEINMAN: And so the costs of the
13 water treatment versus compaction they're about
14 comparable?

15 DR. MINH PHAM: Yeah, so the -- the water
16 treatment from what we saw was very much comparable to
17 everything. There are a few other fumigants that also
18 require water treatment. And in some aspects they're
19 actually combined with the 1,3-D. So we actually saw that
20 some applications actually used that water. A lot of the
21 growers we talked to use water naturally -- like just from
22 rainfall, so they kind of time it to the weather. So
23 we -- in talking about it, we don't anticipate a large
24 increase, but we are also talking with our economics
25 analysis team to really flesh all that out when we do our

1 rulemaking. Unfortunately, I don't have the key numbers.
2 But from what I -- what I was told, it's very comparable.

3 PANEL MEMBER KLEINMAN: It looks like a real win.

4 DR. MINH PHAM: We're trying.

5 PANEL MEMBER RITZ: Maybe you can just explain to
6 me where does the dichloropropene that does not go into
7 the air now remain? Is it in the soil, so the soil has
8 more in the end?

9 DR. MINH PHAM: So it -- from my understanding,
10 it breaks down. So it -- from the modeling that we see,
11 it's pretty much out in about two weeks, but there -- I
12 don't have the half-life in front of me, but it does
13 disperse. And there is some breakdown in the soil, but it
14 essentially -- it does disperse in the air.

15 PANEL MEMBER RITZ: So basically you're saying,
16 it doesn't disperse as peaks anymore, but over time it
17 does disperse, everything that's in there.

18 DR. MINH PHAM: Not everything. So the longer
19 we're able to trap it in the ground, the more it actually
20 breaks down within the ground.

21 PANEL MEMBER RITZ: Okay.

22 DR. MINH PHAM: So that's -- that's our --

23 PANEL MEMBER RITZ: That's the benefit.

24 DR. MINH PHAM: Yeah. Yeah. And we're doing
25 some long-term modeling to take a look to -- at that as

1 well. Monitoring studies are usually the acute time
2 frame. But we are -- as I mentioned, the rulemaking does
3 have some work done with the chronic and cancer risk as
4 well, so the team is looking into that as well.

5 CHAIRPERSON ANASTASIO: Karen.

6 PANEL MEMBER MESSER: Yeah. Thank you for these
7 very interesting data and congratulation on -- on some
8 amazing field studies going out there.

9 Could -- could we just see your -- the line
10 graphs again. I was a little bit --

11 DR. MINH PHAM: Sure. I don't have control of
12 the --

13 PANEL MEMBER MESSER: Oh. Can we go back to
14 those line graphs? I'm just interested in the peak.

15 DR. MINH PHAM: The peak there.

16 DR. ARASH MOHEGH: Which slide would that be?

17 PANEL MEMBER MESSER: I don't have the slides.

18 DR. MINH PHAM: It's like slide 11, I think -- or
19 slide 10 or 11.

20 It should be the first one.

21 And I'm sure you're interested in that -- that
22 initial peak around the 60.

23 PANEL MEMBER MESSER: Yes. There we are.

24 DR. MINH PHAM: Yeah.

25 PANEL MEMBER MESSER: Yeah. It seems pretty

1 spiky, right?

2 DR. MINH PHAM: Yeah. So the team looked into
3 that. So I have notes here. So we took a look at that
4 60-hour -- the peak at 60 hours. And it equates to about
5 18 ppb, which is actually, you know, between one and nine
6 percent of like threshold value. So it looks dramatic on
7 the graph, but in actuality, it's actually not too bad.

8 PANEL MEMBER MESSER: Yeah. So just -- you know,
9 that does seem to be maybe a different characteristic
10 between the tarp and this deeper injection that the
11 tarp --

12 DR. MINH PHAM: Um-hmm.

13 PANEL MEMBER MESSER: -- is not susceptible to
14 peaks --

15 DR. MINH PHAM: Yes.

16 PANEL MEMBER MESSER: -- like that. And I wasn't
17 quite sure that the bar graphs that you showed captured
18 that difference. So I was --

19 DR. MINH PHAM: For -- I'm sorry for the --
20 between the -- the comparison between the study and the
21 TIF tarping?

22 PANEL MEMBER MESSER: Yeah, the -- like if you
23 look at the peak --

24 DR. MINH PHAM: Um-hmm.

25 PANEL MEMBER MESSER: -- over there comparing the

1 red to the blue. Does that really capture the difference
2 that we see on the line -- the line graphs?

3 DR. MINH PHAM: Yeah, so -- so the speak here is
4 averaged out over time. So I think that's -- that's why
5 we have a little bit of difference here. But let me -- I
6 have this here.

7 PANEL MEMBER MESSER: That was my next question
8 that if you -- if you average the peaks, they tend to go
9 away. So I'm not sure -- maybe you should use a
10 percentile or something like that.

11 DR. MINH PHAM: Okay

12 PANEL MEMBER MESSER: Because when you average
13 peaks --

14 DR. MINH PHAM: Yeah. It's --

15 PANEL MEMBER MESSER: -- they -- they can flatten
16 out.

17 DR. MINH PHAM: Yeah And I think it's mainly
18 also due to the fact that its -- the samples are collected
19 in six-hour intervals. So we're kind of -- we don't have
20 like an hour-by-hour essentially comparison, so we try
21 to -- we try to do it statistically to --

22 PANEL MEMBER MESSER: Yeah.

23 DR. MINH PHAM: -- to encompass what we're seeing
24 there. But yeah, I can -- I can --

25 PANEL MEMBER MESSER: So it was just -- it's just

1 a word of caution that it --

2 DR. MINH PHAM: Okay.

3 PANEL MEMBER MESSER: You know, looking at this
4 metric, it does look like you're taking some sort of
5 average peak value, and that might not actually capture
6 the true peak, so just to be aware of that. And if the
7 true peak is really an important metric, maybe you need to
8 think about that a little more before you --

9 DR. MINH PHAM: Yeah. No, that's something that
10 we do keep in mind. I think one of the things that we
11 keep in mind here is when we come to acute exposure,
12 especially with the Department, it's a 24-hour -- we look
13 at a 24-hour rolling average. And then in certain
14 aspects, we also look at a 72-hour rolling average.

15 So I think when -- with the peaks, it's difficult
16 in a sense, because it's like hourly. But when we average
17 it -- when it comes to rulemaking and our regulation, it
18 has to be within the 24-hour, 72-hour timeframe, so --

19 PANEL MEMBER MESSER: Okay. So your regulatory
20 standard is a 24-hour exposure, is that right?

21 DR. MINH PHAM: For this one, I think it's -- let
22 me see. I believe it's -- it's new, so the acute is 55
23 ppb at 72 hours.

24 PANEL MEMBER MESSER: For 7 -- and that means 72
25 hours of exposure?

1 DR. MINH PHAM: Um-hmm.

2 PANEL MEMBER MESSER: Okay. Then I don't have a
3 concern, as long as your metrics are aligned --

4 DR. MINH PHAM: Yeah.

5 PANEL MEMBER MESSER: -- to that standard.

6 DR. MINH PHAM: And I apologize for that, because
7 when we were showing the monitoring data, it's, you know,
8 hourly on -- we try to do hourly on field and then we have
9 to do a little bit of mathematics to kind of fit it into
10 this square peg that is mitigation, so...

11 PANEL MEMBER MESSER: And I guess the only other
12 question being a statistician is we always like to see
13 some quantification of the uncertainty. I know sometimes
14 that's very hard to do with these modeling efforts.

15 DR. MINH PHAM: Yeah, the -- with the modeling
16 efforts, I don't have that here, but this is --
17 essentially, this is just raw observation data that we --
18 that I put up, so it's from the monitoring study.

19 PANEL MEMBER MESSER: Okay. So I guess my
20 comment would be is it possible to put error bars on
21 those -- on those bars?

22 DR. MINH PHAM: Okay.

23 PANEL MEMBER MESSER: Thank you.

24 But again, it looks -- it looks very cool.

25 One last comment. I might think it would be

1 possible to sort of quantify effect sizes of these
2 different things, like moisture, and this extra six
3 inches --

4 DR. MINH PHAM: Um-hmm.

5 PANEL MEMBER MESSER: -- of injection depth. So
6 if you know how much reduction --

7 DR. MINH PHAM: Comes from each piece?

8 PANEL MEMBER MESSER: Yeah

9 DR. MINH PHAM: Yeah. That's -- that's
10 essentially what we wanted to do. That's why each of
11 these studies were a little bit different. We were trying
12 to compartmentalize each of these. So the team that's
13 doing the modeling is actually kind of teasing everything
14 out to see what the various effects are. Obviously, it's
15 a little bit difficult, because it's kind of a cohesive
16 like overall effect.

17 But the team has been able to take a look at
18 various soil types throughout the country -- I'm sorry,
19 throughout the state. So if you're looking at something
20 that's like sandy or something, they've been able to put
21 on what happens if we do this deeper injection? What
22 happens if we do just the water and kind of get a ballpark
23 on that emission. So the team is using the data to kind
24 of fill out the -- exactly what you're saying, kind of
25 tease out specifics.

1 CHAIRPERSON ANASTASIO: Thank you, Karen.

2 So Minh, as part of your response to Karen, I
3 think you said what the peak concentrations were and you
4 compared them to a health guidance value.

5 DR. MINH PHAM: Um-hmm.

6 CHAIRPERSON ANASTASIO: Could you repeat that a
7 little more slowly?

8 DR. MINH PHAM: So the -- so our acute -- our
9 acute threshold -- screening level right now is 55 ppb at
10 72 hours.

11 CHAIRPERSON ANASTASIO: And what was the peak
12 concentration you measured?

13 DR. MINH PHAM: The peak here, this one -- this
14 was a six-hour average at 18 ppb.

15 CHAIRPERSON ANASTASIO: Okay. So not terribly
16 below it, but below it fortunately.

17 DR. MINH PHAM: Yeah. Yeah.

18 CHAIRPERSON ANASTASIO: But yeah, but a six-hour
19 average.

20 DR. MINH PHAM: It's a six hour, so we would have
21 to kind of extrapolate that out.

22 CHAIRPERSON ANASTASIO: Uh-huh. Okay. So
23 depending on the pulse and the wind, it's possible it
24 actually could have been of concern.

25 DR. MINH PHAM: Sorry, Cort, what was that?

1 CHAIRPERSON ANASTASIO: Is it -- is it possible
2 then that what you were saying it was 18 you measured over
3 six hours?

4 DR. MINH PHAM: Um-hmm. Yes.

5 CHAIRPERSON ANASTASIO: So potentially -- and
6 what was -- the threshold value was?

7 DR. MINH PHAM: Fifty-five.

8 CHAIRPERSON ANASTASIO: And that was 72 hours?

9 DR. MINH PHAM: Seventy-two hours, yeah.

10 CHAIRPERSON ANASTASIO: Oh, okay. Never mind
11 then. All right. Thank you.

12 Ahmad.

13 PANEL MEMBER BESARATINIA: That bar chart that
14 you showed, you said that it's an average. Average of how
15 many values? I think you mentioned somewhere at the
16 beginning of your talk. I might have missed it. Then you
17 say it's average. Is it the median? Is it the mean?
18 What kind of average is it?

19 DR. MINH PHAM: So most of that is all the mean
20 values that we have. And it's -- it's cal -- I'm sorry.
21 It's determined by all of our -- the readings from every
22 single one our equipment around the field. So it's taken
23 into account all 12 locations.

24 PANEL MEMBER BESARATINIA: How many measurement
25 you said?

1 DR. MINH PHAM: How many measurements?

2 PANEL MEMBER BESARATINIA: Yeah.

3 DR. MINH PHAM: So the -- so as I mentioned
4 before, it would be -- for the first four days, it's one
5 measurement every six hours. That's one standard sample.
6 And then for the remaining four days, every 12 hours. So
7 it ends up being -- overall, it ends up being over 300
8 something samples that we put in.

9 PANEL MEMBER BESARATINIA: Okay.

10 CHAIRPERSON ANASTASIO: Yes, go ahead, Karen.

11 PANEL MEMBER MESSER: Yeah. Just following up on
12 that, you know, that's probably not the best metric to
13 measure a peak.

14 DR. MINH PHAM: Okay.

15 PANEL MEMBER MESSER: If you're -- if you're
16 taking the average peak across a bunch of sites, that's
17 probably not capturing what you need to capture.

18 DR. MINH PHAM: Okay.

19 PANEL MEMBER MESSER: So probably take some
20 percentile, like a 90th percentile, or something like
21 that --

22 DR. MINH PHAM: Yeah. We'll check --

23 PANEL MEMBER MESSER: -- as your measure.

24 DR. MINH PHAM: Okay. We can take a look at
25 that. I think it's also because we were comparing to

1 histor -- the his -- the way the historical day was done,
2 so just to do and apples-to-apples comparison, but you're
3 correct.

4 PANEL MEMBER MESSER: Yeah, you might not have
5 good historical data.

6 DR. MINH PHAM: Yeah.

7 PANEL MEMBER MESSER: You know, you can imagine
8 if you've got all these sites and only a few of them are
9 really spiking --

10 DR. MINH PHAM: Um-hmm.

11 PANEL MEMBER MESSER: -- that would really get
12 flattened out. So if you -- if you just look at a
13 percentile --

14 DR. MINH PHAM: Yeah.

15 PANEL MEMBER MESSER: -- that will be a little
16 better.

17 DR. MINH PHAM: Gotcha.

18 PANEL MEMBER BESARATINIA: I think if you use
19 some sort of Whisker -- probably Karen is the expert in
20 that Whisker box plot, so it will give you a better
21 indication of variability. So you have the 25 percentile,
22 50 percentile, 75, as well as --

23 DR. MINH PHAM: Um-hmm.

24 PANEL MEMBER BESARATINIA: -- outlier, in case
25 that those -- that peak is not real is due to outlier, you

1 can see it immediately.

2 DR. MINH PHAM: Yeah. Yeah. And we have all --
3 we -- the team has like the full data set. And
4 unfortunately, I don't have the report here, but
5 definitely I hear what you're saying and we can incor --
6 incorporate that when we finalize everything.

7 PANEL MEMBER MESSER: And you know that might be
8 kind of a hidden advantage of the tarp that the outputs
9 are less variable, which might limit your -- your peak
10 exposure. So I think it's a -- I think box plots are a
11 great idea just to visualize the data. And then if you
12 use some sort of standard like a percentile, that will
13 capture some of this extreme behavior. And your modeling
14 is probably a regression based model. I don't want to
15 send you down a rabbit hole, but you -- there are quantile
16 regression methods. So if you wanted to go that route,
17 you could apply that same approach to a percentile, like
18 75th percentile.

19 DR. MINH PHAM: Yeah. Typically, we -- when we
20 actually go into the modeling, we do look at -- our
21 standard is like 95 percent for -- for when we look at
22 the -- the weather throughout the state, so we try to keep
23 that conservative. And then also for the -- it's another
24 95 percentile.

25 PANEL MEMBER HAMMOND: Don't remember what

1 happened.

2 DR. MINH PHAM: Sorry. I'm hearing feedback.

3 Sorry.

4 But yeah. So yes, that is something that include
5 once we actually work out for exposure concentrations.

6 CHAIRPERSON ANASTASIO: All right. Thank you,
7 Karen.

8 I see Kathy has her hand up, so I just asked them
9 to mute you, but now I'm going to ask them to unmute you,
10 and then Kathy go ahead.

11 PANEL MEMBER HAMMOND: Yeah. On the tarp, I was
12 just remembering that we did them a few years ago. In the
13 methyl iodide, there had been some concern about deer
14 walking on tarps and opening them up. And that they
15 did -- they're not -- they don't work as well. I think
16 that Florida had done some work with tarps. They were
17 actually using them with tarps and they did not work as
18 well as people had thought. Have you looked over some of
19 the experience that has happened with tarps?

20 DR. MINH PHAM: Yeah. So within our own
21 experience and with, you know, external literature and
22 what not, we know that animals do cross the tarp.
23 Actually, one of the key components of the tarp is the
24 layerings have increased over time. Initially, that tarp
25 study in Lost Hills, you're talking about three layers. I

1 think we're upwards to seven to nine layers, just because
2 technology is a little bit cleaner.

3 So the rigidity of the tarp is a little bit
4 better. We're -- we also have ongoing studies for how the
5 tarp degrades or if it degrades in time with weather
6 conditions. And we've seen that they've been able to stay
7 pretty consistent and effective through the -- I think we
8 went out like a month and a half, two months, which is
9 typical for how long a tarp could sit out there for. So
10 we've seen some of that internal study.

11 But yeah, when it comes to rips and tears from
12 animals walking across or whatnot, we did take -- we do
13 visually inspect the field for our studies anyways. We
14 didn't notice any of that. But there is procedures in
15 place for the applicators when a tarp is damaged. And
16 they actually will go in an reseal specific areas of cuts
17 or tears.

18 PANEL MEMBER HAMMOND: Well, and people would
19 need to do that if they're doing it and -- on an ongoing
20 basis. Thank you -- thank you for that.

21 DR. MINH PHAM: Um-hmm.

22 CHAIRPERSON ANASTASIO: Thank you, Kathy.

23 Any other comments from the Panel?

24 Okay. So I'd like to then move to public
25 comment. So again, you can give your public comment

1 either by raising your hand, in which case, we'll call on
2 you, or you can put it in the Q&A, which I think was
3 reenabled. Before we get to -- oh, no, I'm sorry. I'm
4 seeing verbal comments only. So if you want to have a
5 public comment, just please raise your hand and then we
6 will call on you.

7 Before we get to people who are online, I would
8 like to acknowledge the Panel received a comment from the
9 California Rural Legal Assistance Foundation. And Minh, I
10 believe that Norm has sent you a copy of this?

11 DR. MINH PHAM: Yes.

12 CHAIRPERSON ANASTASIO: Okay. Great. Yeah. So
13 I'd definitely encourage DPR to look at it. You know,
14 part of what the comment is about uncertainty, which Karen
15 addressed, and there are some other, I think, important
16 issues in there as well. So I definitely encourage you to
17 address those.

18 Yeah. Thank you.

19 Okay. So Victor, Arash, I'm not sure how we're
20 going to do this.

21 Unmute the person and then they will just say
22 their comment.

23 DR. ARASH MOHEGH: Yes. We have four people
24 raising their hand right now. How much time would you
25 like to --

1 CHAIRPERSON MOHEGH: Sorry, four people?

2 DR. ARASH MOHEGH: Right now five. Another
3 person.

4 CHAIRPERSON ANASTASIO: Five. Okay. Let's say
5 two minutes.

6 DR. ARASH MOHEGH: Two minutes per person. Okay.

7 CHAIRPERSON ANASTASIO: Yeah. So public
8 commenters, please limit your comments to two minutes.

9 DR. ARASH MOHEGH: So first we have Laura.
10 Laura, we are going to unmute you, but you need to unmute
11 manually yourself.

12 LAURA ROSENBERGER HAIDER: Well, I had a question
13 about ethylene oxide earlier. It's inn -- that a test for
14 COVID and a swab, and I had a chronic nose bleed for like
15 a whole year after that in that nostril only and not on
16 the other side. So I wanted to add patient or public
17 experiences with it. It's also in our spices that we eat.
18 I mean, people eat a lot of spice. Survey these people,
19 right, or ask for public comments on health impacts that
20 they have had.

21 And also pesticides, well, I've gotten exposed
22 living across the street from a farm, but I'm not sure if
23 it was that pesticide in particular, the 1,3-D. I think
24 it was Roundup. And it happened later that I had like a
25 severe allergy attack, where I was getting like chills,

1 and like faintness, and weakness.

2 All right. Thanks.

3 CHAIRPERSON ANASTASIO: Okay. Thank you, Laura.

4 Sorry to hear about your exposures. We will, as
5 part of the ethylene oxide document -- OEHHA will compile
6 public exposures and we'll have some sense of how
7 widespread that is. Thank you for your comment.

8 Next comment --

9 LAURA ROSENBERGER HAIDER: Also. Are we exposed
10 to -- is there BP in fiber board that they build homes out
11 of?

12 CHAIRPERSON ANASTASIO: I don't think that's a
13 major use, but I'm not a hundred percent sure. Yeah.

14 LAURA ROSENBERGER HAIDER: Because I've gotten
15 dizziness from walking into new construction buildings or
16 tool sheds sold at Home Depot.

17 CHAIRPERSON ANASTASIO: Yeah. Certainly we have
18 a lot of other volatile organic pounds that come off those
19 building materials.

20 Well, thank you for your comment, Laura.

21 We're going to move on to the next person.

22 DR. ARASH MOHEGH: Next we have LaDonna. We're
23 going to unmute you, but you need to unmute yourself
24 LaDonna. Go ahead.

25 CHAIRPERSON ANASTASIO: LaDonna, do you have a

1 comment?

2 DR. RAYMOND TOMPKINS: This is Dr. Raymond
3 Tompkins, which I was using LaDonna's hook-up to get in to
4 the meeting.

5 CHAIRPERSON ANASTASIO: Oh. Go ahead.

6 DR. RAYMOND TOMPKINS: Thank you.

7 One, to the last presenter in this presentation,
8 in your presentation, you did not give me any percentage
9 on, one, the volume of water that you used or the moisture
10 content when you were conducting this to deal with the
11 variables. I'm looking at possibility of adaptation of
12 your method if it's proven to be effective in an urban
13 setting in San Francisco Bay Area, which also I'd be very
14 interested in the effects of your work on soil and the
15 sandy soil, because we have an impact very much with these
16 asphalt and with the cement grinding, where in
17 Bayview-Hunters Point we have the highest asthma,
18 pulmonary disease, and cardiovascular disease which is a
19 direct correlation with particulate exposure. And this
20 may be applicable. So please, if you can get it to me, it
21 would be extremely helpful or if you have time to do it.

22 Secondly, gentlemen, I was not allowed to make
23 any public comment on the previous two presentations this
24 morning, which I found was very exclusionary process in
25 the population that is professed the State of California

1 wants to protect.

2 And that when I was in Atlanta back in '95 when
3 the Monte Carlo Risk Assessment System was being presented
4 by the author, that he had the 95 percent trigger. But
5 the medical risk -- the medical model in this formula was
6 a 35-year old white male. Me as a 73-year old black male,
7 we are being excluded. But yet, if you look at all the
8 statistics in the state of California, we have the highest
9 mortality and morbidity rate.

10 Dr. Tomás Aragón showed in breast cancer for
11 African American women, given all the social economic with
12 insurance and everything else, black women in San
13 Francisco died 77 percent higher than their white
14 counterparts. We need this delineation. I need to look
15 at genetic variances and susceptibility in your model when
16 you're assessing risk.

17 I have talked with Dr. Faust at other --

18 CHAIRPERSON ANASTASIO: Dr. Tompkins, I'm going
19 to have to cut you off. I'm sorry.

20 DR. RAYMOND TOMPKINS: I'm sorry. I didn't get a
21 chance to speak earlier.

22 CHAIRPERSON ANASTASIO: Yeah.

23 DR. RAYMOND TOMPKINS: I wish you would allow the
24 public more time to speak on these issues.

25 CHAIRPERSON ANASTASIO: Yeah. We are only taking

1 public comments on items that are related to AB 617,
2 Community Air Protection Plan. So our other items of
3 business we do not take public comments. I'm glad you
4 were able to comment on this. I imagine, Minh, could he
5 contact you for the details of the water content?

6 DR. RAYMOND TOMPKINS: I would really appreciate
7 it.

8 DR. MINH PHAM: I can just give that right now.

9 CHAIRPERSON ANASTASIO: Okay. Go ahead and give
10 it.

11 DR. MINH PHAM: So typically for the water
12 treatment, we're looking at one to three inches between a
13 day to three days ahead of the application cycle. As far
14 as field capacity, typically 1,3-D right now is anywhere
15 between 25 to 50 percent field capacity. We were looking
16 to up that, so anything above 50 percent. So I think our
17 threshold was between 50 and 80 percent.

18 DR. RAYMOND TOMPKINS: Sir, my question was what
19 was the constant moisture content of the soil? Like the
20 American Standard and Measurements says 12 percent is what
21 you need for not having dust leaving the work site or
22 others are trying to retain. Is the -- did you measure
23 the soil content of moisture? Is it five percent, 10?
24 When you did the deep injections, was it higher or lower?
25 That gives me an idea when talking to the air district

1 board of what injections and the water content should be
2 used, especially when we're in a drought.

3 DR. MINH PHAM: Yeah. Appreciate that, Dr.
4 Tompkins. So, yes, and so we're look -- we're talking
5 about field capacity we're talking about these -- these
6 fields. So I'm unsure on the metric that you were
7 speaking about before. But 50 to 75 percent field
8 capacity is the capacity of which that field can hold
9 water. So that's the -- that's the metric that we use.
10 So I don't know if that answers your question.

11 DR. RAYMOND TOMPKINS: I hope if I could contact
12 one of the members on the Panel that we can get together
13 and have a discussion, because I'd like to utilize this in
14 an urban setting, if possible.

15 Thank you.

16 CHAIRPERSON ANASTASIO: Thank you for your
17 comment.

18 DR. ARASH MOHEGH: Next comment. Next, we have
19 gen Jane.

20 Jane, you can unmute yourself now.

21 JANE SELLEN: Hi. Yeah. This is Jane Sellen
22 with Californians for Pesticide Reform. I was told I'd
23 have three minutes, so if you don't mind, I'm going to
24 take just a little bit more than two minutes but less than
25 three.

1 Thank you for the opportunity to comment. On
2 behalf of the CPR Coalition we welcome the attention of
3 the SRP on 1,3-D, a chemical that's the source of profound
4 and ongoing broken trust toward DPR by our coalition. In
5 addition to being a toxic air contaminant, 1,3-D is also a
6 volatile organic compound, Prop 65 carcinogen, banned in
7 29 countries, and yet is the third most heavily used
8 pesticide in California.

9 It's also extremely drift prone with a recent
10 exceedance recorded at Shafter originating in an
11 application more than seven miles away according to DPR.
12 Under rules that Dow was allowed to write, implement, and
13 monitor, use per 6 by 6 mile township was limited to a
14 90,000 pound cap, but waivers were routinely granted and
15 unused pounds from prior years were allowed to be rolled
16 over.

17 We now know from PRA obtained emails, that
18 industry lobbyists asked DPR back in 2007 to raise the cap
19 to 135,000 pounds, and that then there would be no more
20 need for rollovers or waives. And in 2016, DPR obliged,
21 recalculated the lifetime cancer risk level over the
22 strenuous objections of OEHHA and increased the use cap to
23 136,000 pounds.

24 At this point, CPR and PAN sued DPR and Dow. We
25 won, a win that was recently upheld on appeal. DPR is now

1 under court order to create a lawful regulation and to
2 work on the regulation in concert with OEHHA.

3 This background is relevant to my comment today,
4 because the thrust of DPR's action on 1,3-D continues to
5 be focused on finding ways to allow its continued
6 unchecked use. For its rulemaking, DPR is relying on
7 small and limited pilots to test ways to reduce emissions
8 as reflected in what Minh Pham called the key question in
9 his presentation, which was are there ways to achieve
10 reduction in emissions similar to TIF tarping?

11 I'm almost done.

12 A key -- better key question might be how do we
13 reduce agriculture's reliance on this highly hazardous and
14 drift prone chemical? DPR evidently has no intention of
15 doing anything in its rulemaking to reduce ongoing
16 alarmingly high use or to challenge the system of
17 industrial agriculture that necessitates the use of soil
18 sterilizing chemicals.

19 We affirm the comments in the letter to SRP by
20 our colleague Anne Katten and asked that you weigh her
21 comments carefully as you scrutinize these pilots that are
22 intended to inform the rulemaking. After decades of
23 failed oversight of this hazardous chemical, DPR's actions
24 warrant particular scrutiny. What's at -- what's at stake
25 is the health of millions of the most vulnerable people in

1 California's farm working communities.

2 Thank you for your time.

3 CHAIRPERSON ANASTASIO: Thank you very much,
4 Jane, for your comment.

5 Next comment

6 DR. ARASH MOHEGH: Next we have Sarah. Sarah,
7 you can unmuted awe yourself

8 SARAH AIRD: Oh, thank you very much. I'm going
9 to second. So This is Sarah Aird with -- also with
10 Californians for Pesticide Reform. And I would just like
11 to reiterate many of the comments that Jane Sellen just
12 made, and again to highlight that we are in full, a
13 hundred percent support of the letter submitted by Anne
14 Katten of the California Rural Legal Assistance
15 Foundation.

16 And I'll just add a couple things for those of
17 you who haven't had a chance to look at that letter yet.
18 So, first of all, we do remain concerned, as Jane
19 mentioned, that there is an emphasis on mitigations and
20 reducing emissions exposure as opposed to reducing use.
21 1,3-dichloropropene is actually banned in dozens of
22 countries and it's time that that be the focus in
23 California, not just emission reductions.

24 But in addition, we urge and second also comments
25 that were made here by expert scientists on the needs for

1 incorporation of uncertainties when estimating fumigation
2 method emission rates from the pilot study results. We
3 also support the selection of 55 parts per billion as a
4 target level for acute effects, but conclude that this
5 should be a 24-hour target concentration rather than a
6 72-hour concentration.

7 That's also in concurrence with CARB's comments
8 adjusting that a 24-hour target concentration is needed,
9 so that ambient air samples of 24 hours in duration may be
10 used to evaluate if the target concentration is being
11 exceeded. Since air concentrations are only measured once
12 a week, modeling will need to be used to estimate
13 three-day average air levels. However, as OEHHA has
14 pointed out in a few recent incidents, the results of air
15 modeling markedly underestimated the 24-hour levels
16 monitored.

17 And finally, we believe the systemic approach
18 should be used in risk management because it is more
19 health protective, and the peer reviews from scientists at
20 the Office of Environmental Health Hazard Assessment and
21 Texas A&M University both recommend use of the systemic
22 approach for calculating cancer potency, because lung
23 tumors are found in mice exposed in oral as well as
24 inhalation studies.

25 The most recent analysis done OEHHA of 1,3-D

1 cancer potency also used this systemic approach. The
2 portal of entry approach is typically used for irritant
3 chemicals not carcinogens.

4 Thank you very much for your time.

5 CHAIRPERSON ANASTASIO: Sarah, thank you for your
6 succinct summary of the letter. I appreciate your
7 comment.

8 Next commenter.

9 DR. ARASH MOHEGH: Next, we have Caroline.
10 Caroline, please go ahead and unmute yourself.

11 Care oh line

12 CAROLINE COX: Good afternoon. This is Caroline
13 Cox. Can you hear me okay?

14 CHAIRPERSON ANASTASIO: Yes, we can.

15 CAROLINE COX: Yeah. I mostly want to support
16 the comments just made by Jane Sellen and Sarah Aird. I
17 did want to focus a little bit of attention on the
18 specific results of the mitigation pilots. You know, I
19 understand the difficulties in carrying out field studies,
20 but the -- the basic design of the study where there's
21 actually no controls, just using historical controls would
22 not really be acceptable under most scientific scrutiny.

23 That said, I also wanted to reiterate the point
24 that the 24-hour averaging. To work with the 72-hour
25 average, which actually DPR and/or CARB are not set up to

1 monitor for, just means that it will be impossible to
2 enforce. So I urge you to take a close look at that.

3 Thank you.

4 CHAIRPERSON ANASTASIO: Thank you, Caroline for
5 your comment.

6 Do we have any more comments?

7 DR. ARASH MOHEGH: No.

8 CHAIRPERSON ANASTASIO: No, that's the final
9 comment. I'd like to thank everybody who commented. We
10 appreciate your input and we are now going to break for
11 lunch. We will reassemble in 30 minutes, which is 1:05,
12 to hear our last informational item. So, Panel, please
13 come back by 1:05. Thank you, everyone. And thank you,
14 Minh, for your presentation.

15 (Off record: 12:33 p.m.)

16 (Thereupon a lunch break was taken.)

17

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25

1 AFTERNOON SESSION

2 (On record: 1:07 p.m.)

3 CHAIRPERSON ANASTASIO: Welcome back, everyone.
4 We're going to continue our Scientific Review Panel
5 meeting. I'm going to wait till we have the right slide
6 up on the screen there.

7 (Thereupon a slide presentation.)

8 CHAIRPERSON ANASTASIO: Beautiful. Thank you,
9 Arash.

10 So our final major agenda item today is our third
11 informational item, where we're going to get an update on
12 the Community Air Protection Program from Dr. Brian Moore,
13 manager the community Planning Section of CARB's Office of
14 Community Air Protection.

15 Brian, please take it away.

16 DR. BRIAN MOORE: Great. Well, thank you all and
17 good afternoon. This is reminding me of the dreaded after
18 lunch block, when I used to teach.

19 (Laughter.)

20 DR. BRIAN MOORE: So I'll try to be as
21 interesting and concise as possible. And again, thanks
22 again. My name is Brian Moore and I manage the Community
23 Planning Section in CARB's Office of Community Air
24 Protection. I would like to just thank by -- start by
25 thanking you all for letting us update you on progress to

1 our -- on our program to date.

2 Go ahead, next slide.

3 --o0o--

4 DR. BRIAN MOORE: There we go. Thank you.

5 So this update we've broken up into kind of three
6 components. The first on the left are looking back and
7 updating you all on kind of progress -- recent progress to
8 date. And then the one on the right is looking forward
9 with the program.

10 So first, we'll discuss our last round of annual
11 community selection, which happened in February and then
12 I'll just give some high level summary points from our
13 annual program update that we gave to our CARB Board that
14 is available online that I can share with anyone who's
15 interested. And then finally, I will discuss the
16 statewide strategy revision process, which is like our
17 huge emphasis this year, our focus moving forward, to
18 actually update our guideline document for implementation
19 of this program.

20 Next slide.

21 --o0o--

22 DR. BRIAN MOORE: Starting with annual community
23 selection. So this last February, at our CARB Board
24 meeting, our Board selected two new communities for the
25 program, East Oakland in the Bay Area and the

1 international border community, down south of San Diego by
2 the southern U.S. border with Mexico.

3 Next slide.

4 --o0o--

5 DR. BRIAN MOORE: So just to give some details on
6 East Oakland. East Oakland was selected for a Community
7 Emissions Reduction Program. So that means that they will
8 develop with community members, and the air district, and
9 other partners, a plan fully of strategies to reduce
10 emissions, specifically in the East Oakland community, as
11 well as mitigation and exposure reduction strategies.

12 The East Oakland community is about 20 square
13 miles in size with a population density of around 12,000
14 people per square mile. The map on the left gives a
15 general idea of the community, but the final boundaries
16 will be decided by the community steering committee
17 members themselves when that group is organized,
18 hopefully by July. There are several emission sources of
19 concern in East Oakland, including industrial facilities,
20 freeway traffic, rail, and freight facilities all through
21 that area.

22 The Bay Area Air Quality Management District has
23 been partnering with local community-based organizations
24 and residents to design the community steering committee.
25 And gain, they hope to convene that within the next few

1 months, by July at the latest.

2 Next slide.

3 --o0o--

4 DR. BRIAN MOORE: The second community selected
5 was the international border community. This community is
6 about 24 square miles with a population density of 3,000
7 people per scare mile. The community is home to two ports
8 of entry. So it covers San Ysidro and Otay Mesa. So many
9 of the air pollution concerns in this community are
10 associated with these ports of entry, so heavy-duty truck
11 traffic, commerce on a lot of the freeways throughout the
12 area.

13 The air district has already deployed black
14 carbon analyzers in the community to support this
15 recommendation. And the community has met twice so far
16 and is in the process of finalizing their community
17 steering committee membership as well as their boundaries,
18 so they're well on their way.

19 Next slide.

20 --o0o--

21 DR. BRIAN MOORE: So those are the two
22 communities selected this past year in February. I
23 thought it would also be helpful to go over the
24 considerations that CARB staff used to recommend
25 communities, as well as the considerations that our Board

1 uses to select them just kind of to revisit this.

2 So this is a kind of semi-quantitative exercise.
3 We definitely look at air pollution emissions -- sorry,
4 emissions inventories and other exposure metrics. We also
5 use CalEnviroScreen, the Healthy Places Index, other tools
6 to look at vulnerability measures within these
7 communities.

8 And that third bullet is something we really
9 emphasized at the beginning of the program under direction
10 from a lot of community leaders and other stakeholders was
11 that to make sure there's some regional and source
12 diversity in the communities we select. So not only did
13 we want to get communities throughout the state, but then
14 also ones that experience different air pollution burdens
15 from different types of sources.

16 So we have port communities, like West Oakland
17 and Long Beach area in our program, as well as more rural
18 communities like Eastern Coachella Valley, Shafter,
19 Arvin-Lamont area. And we also do have really urban areas
20 like in the LA basin, like East LA. So we try to use
21 these first-, second-, and third-year communities to help
22 us develop successful strategies that could then be rolled
23 out to other communities with like sources.

24 The next bullet -- so strongly supported
25 communities. This has been a knock and a valid knock on

1 this program. Because we can only select so many
2 communities every year due to just resource availability,
3 we have been trying to prioritize the communities we see
4 most strongly supported throughout the state. We have
5 some communities that community members have organized and
6 have put themselves forward and nominated their
7 communities for this program, year in and year out. So
8 that was definitely a priority with the selection of these
9 communities.

10 And then again, that last bullet though is
11 resource availability. The last three years, funding for
12 AB 617 has stayed flat. But then every year, statutorily,
13 we're required to at least consider adding new communities
14 to the Program.

15 So that has limited our ability to grow the
16 program, but that also leads into this kind of big
17 revision we're doing this year of our guidance document to
18 try to get creative to find other ways to reach more
19 people.

20 Next slide.

21 --o0o--

22 DR. BRIAN MOORE: So now I'll kind of transfer
23 into our annual program update. So we have seen movement
24 on many unique strategies in our first and second year
25 communities, especially, since they are now like beginning

1 implementation, past program -- plan development.

2 Here are some examples. So in the Shafter
3 community, they were able to replace 150 gas-powered lawn
4 garden pieces of equipment with electric models all in one
5 day through kind of streamlining the incentive process
6 down in that area, where there's a day where people could
7 bring in their gas-powered mowers, and air district staff
8 and volunteers took the gas mower out, put the electric
9 mower in and they were on their way. So they really cut
10 through a lot of the red tape associated with that
11 incentive program. And that was pretty successful. And
12 we see that being implemented in other valley communities.

13 Also, in several communities, steering committees
14 have included school air filtration as a strategy in their
15 plans. We've seen that throughout the state. And with
16 that, as another kind of exposure mitigation strategy,
17 we've seen urban greening and vegetative barriers being
18 adopted by many of our communities in LA as well as in the
19 Central Valley.

20 And I think these two points hit at something
21 we've seen with community members. They really are giving
22 us direction and desire immediately exposure reduction,
23 right? They definitely concentrated on reducing
24 emissions. But in the short term, the sooner they can
25 reduce exposure, especially in sensitive populations, like

1 kids, day care facilities, hospitals, that has been a
2 focus. So we are seeing a lot of exposure mitigation
3 strategies versus just the traditional emissions reduction
4 strategies.

5 Another big concern throughout the State is land
6 use. And this is something that we have found as a
7 challenge to work with land-use agencies, because it isn't
8 something, you know, that has been directly, historically
9 under CARB's control or the air district's.

10 So we see in South Central Fresno, the community
11 steering committee got together with the air district and
12 they're developing a partnership with the City of Fresno.
13 And the idea is to coordinate more closely on the area
14 impacts of proposed land-use projects through early review
15 and discussion of proposals during the pre-application
16 process. So this is one of the examples of this kind of
17 cross-agency collaboration in trying to bring along
18 partners that aren't necessarily by law required to
19 participate. So getting the city involved in Fresno is --
20 I mean, it's been a relatively, you know, rocky road, but
21 they're there at the table and they've been participating,
22 so we're moving forward with that.

23 And as a final example, the El Centro, Heber,
24 Calexico corridor community, they're conducting a truck
25 study to evaluate alternative routes going in and out of

1 Transportation and Toxics Division either in another
2 format like this, or through email, or anything like that.
3 So I will definitely get back to you if you have
4 questions.

5 So a big with the metals. So metal processing
6 forging, fabrication, finishing and welding is a big
7 concern, like chrome plating types of activities,
8 especially in LA. What was mentioned earlier today, so
9 ethylene oxide from sterilizers used in medical
10 applications have also been mentioned at the community
11 level.

12 PAH and particulates from charbroiling --
13 commercial charbroiling is also a concern of the community
14 and so have been working on ways to -- of control
15 technology to reduce exposure to that. What else do we
16 have?

17 Oh, yeah, residential wood burning comes up now
18 and again with concerns just about VOCs like benzene and
19 formaldehyde maybe from manufactured, you know, wood being
20 burnt in residential fireplaces is also a concern of
21 community members, as well as those consumer product fume
22 suppressants in chrome plating has also been a very big
23 concern and is on our toxic staff's radar for sure,
24 because it was a big concern of the community.

25 And I believe that even though CARB as of now

1 does not have the authority to regulate stuff like PFAS
2 and some of those things used in suppressants. We are
3 starting to track it in our inventory, so at least we'll
4 get an idea of where it's being used and how much is being
5 used moving forward, which will really help.

6 And also mentioned -- I think it was also
7 mentioned earlier today some solvents, like 1,3 -- 1-BP.
8 It was mentioned earlier. It's also a concern to many
9 communities throughout the area.

10 And finally, oh, pesticides, which was just
11 covered by Minh. DPR has been a really involved partner
12 with our group. Four years ago, we didn't have much
13 contact with DPR and now we work with them almost on a
14 daily basis in a lot of these; communities. So like Minh
15 mentioned, a lot of the pesticides concerns are with the
16 fumigants that he brought up, and especially in our
17 Eastern Coachella Valley area and obviously though the
18 Central Valley of California.

19 Next slide.

20 --o0o--

21 DR. BRIAN MOORE: Just to -- oh, that did not
22 transfer well. I apologize for that slide. I can kind of
23 talk through what -- well, it's the right side -- slide
24 sorry. But, yeah, it looks like that the formatting
25 didn't show through.

1 So just to give a broad update on our program,
2 the left side is just a map of California representing
3 where the current 17 communities are located throughout
4 the state. And the right side, each one of those blocks
5 represents a stage of program development or
6 implementation. So the bottom box with those seven
7 communities, those are our first year communities that we
8 selected almost four years ago now. And so they're like
9 in their second year of implementation.

10 So they're to the point of actually trying to get
11 these strategies implemented and getting emissions and
12 exposure reductions. And then at the very top, those are
13 our newer communities, which are just in plan development,
14 right? So they haven't gotten to the point yet, where
15 they are actually implementing any of the strategies.
16 They're in the strategy creation phase.

17 Next slide.

18 --o0o--

19 DR. BRIAN MOORE: So this is the -- those are the
20 two kind of looking back items and this is our looking
21 forward item for today that I wanted to closed with. So
22 this is the statewide strategy revision. So just as a --
23 kind of a primer, CARB's statewide strategy is captured in
24 our program blueprint, which I'm sure most of you have
25 heard of, so that's our guidance document. And by

1 statute, we're required to update that statewide strategy
2 at least every five years.

3 And so that five-year mark is coming up in
4 September of 2023, so not too far away. We have started
5 brainstorming and working with community groups regarding
6 how we go about updating this guidance document. And a
7 big part of it has been the AB 617 consultation group that
8 many of you may be familiar with. And this group is just
9 a multi-stakeholder group composed of environmental
10 justice advocates, air district staff, academics, as well
11 as industry.

12 And they have been discussing this revision
13 process over the last well, you know what, I would say
14 that within a year and a half in the program - it's a new
15 program - everyone realized changes needed to be made to
16 our guidance document. So starting probably a year and a
17 half after the first blueprint and guidance document was
18 approved by our Board, we started keeping a running list
19 of changes, you know, of input from community members of
20 things that needed to be updated.

21 And so they've been working on that for a while.
22 And a big push with the consultation group was they
23 developed a subcommittee that helped to try to take all
24 these concepts for revisions and put them together in a
25 list to go through. And within that subcommittee, we

1 throws -- flow throughout and is threaded throughout our
2 document and that was something that was woefully missing
3 from our first version.

4 Community engagement, that second kind of middle
5 top tile, we are planning on going above and beyond the
6 usual CARB public comment process where a document is
7 posted for a online comments, and then we review them, and
8 then write a draft. So over this next year and a half, we
9 plan on doing a lot of community engagement going out to
10 communities to get direction on how this document should
11 be composed.

12 And then the last kind of tile I just wanted to
13 highlight where the alternative models tile there at the
14 bottom. We're thinking of ways that we can expand program
15 benefits past this traditional method of selecting
16 communities, because one, it's just not -- we're not
17 reaching enough people fast enough. So as an example some
18 of -- for some of these alternative models, our
19 Enforcement Division is starting a community
20 enforcement -- community focused enforcement effort, where
21 they are actually going out to the community, meeting with
22 community members, going on tours, and the community is
23 helping almost design the enforcement plan. And for lack
24 of a better word, our Enforcement Division is acting kind
25 of like the contractor and then trying to implement that

1 plan. So that's one thing we're trying out.

2 Also, we have community air grants that are
3 grants that go straight to community groups, which help
4 with capacity building, community air monitoring. And
5 we're trying to expand that program to the point where we
6 actually have an awardee this year that is taking a
7 community air grant and developing kind of a ground up --
8 I think they call them like local emissions reduction
9 programs, where they're working with the community members
10 to develop strategies to reduce emissions. And then once
11 they form that plan, the current thought is then, you
12 know, CARB and the air district can help them implement
13 that, you know, so less top-down, more bottom-up model
14 with these emissions reduction programs.

15 Next slide.

16 --o0o--

17 DR. BRIAN MOORE: Oh, you know what, Vick, you
18 can just hit it like five times. We'll get the whole
19 timeline out there.

20 Awesome. Perfect. So -- and just to end with
21 kind of our timeline for the revision of our statewide
22 strategy. So in late 2021, again that People's Blueprint
23 was completed and the consultation group has been
24 reviewing that up till now. And we're in May now, so
25 actually next week, we're going to have a CARB Board

1 informational update on the statewide strategy revision.
2 So it's a -- I think the item will start at 4 p.m. on
3 Thursday and it's actually down in Riverside, but will be
4 webcast. We're starting that program blueprint revision
5 process. And we hope to have a draft outline of the
6 program blueprint within the next few weeks, which really
7 kind of represents kind of a list of concepts like the
8 tile graphic I showed earlier.

9 We're hoping by the summer of 2022 maybe in
10 August that the consultation group has completed the
11 review of the People's Blueprint and giving -- giving us
12 comments. And then late '22, early 2023, we want to go
13 out to the public with workshops. We're going to have
14 more consultation group meetings, and maybe some different
15 forms, maybe stakeholder focus groups. We're really open
16 to any and all forms of communication that can add value
17 to this process under the direction of our community
18 members.

19 And we're hoping to post a full draft of our
20 program blueprint early 2023, and then a final draft after
21 public comment before September '23 -- 2020 -- excuse me
22 2023 in which our Board will act on the blueprint and we
23 will make that statutory deadline. And again, there has
24 been some concern from community members that they want
25 this to happen as fast as possible. So we are moving

1 quickly to maybe beat this deadline by as much as we can,
2 but we want to be thorough and do it right, so we're
3 definitely not going to rush.

4 Cool. And next slide.

5 --o0o--

6 DR. BRIAN MOORE: And that's I'll have. So I'm
7 more than happy to answer any -- any questions from the
8 group, or you can call me, or email me at another time.
9 Yeah.

10 CHAIRPERSON ANASTASIO: Great. Thank you very
11 much, Brian.

12 Are there comments or questions from the Panel?

13 Mic, Joe.

14 PANEL MEMBER LANDOLPH: What can you tell me
15 about East LA? I work there in Boyle Heights at USC.

16 DR. BRIAN MOORE: Oh, wow, so that is -- that is
17 right within the area. That consultation group -- that
18 was one of our first selected communities. So they're
19 in -- deep into implementation. What I can tell you about
20 East LA? If you are interested, we have community -- CARB
21 has community liaisons that have been attending every
22 community steering committee meeting and work really
23 closely with the air district and community members. We
24 put out annual reports. So if you want, I can get you
25 information. There's a -- there's a lot happening as far

1 as Mobile Source Strategy reductions. They're looking at
2 rail, you know, in that area, because of the railyard
3 right there. So, yeah, it's been progressing. South
4 Coast Air Quality Management District is partnering with
5 the community, you know, in that endeavor. But, yeah,
6 there's a lot. So, yeah, I can. I more than willing to
7 do some --

8 PANEL MEMBER LANDOLPH: Yeah, I'll leave you my
9 card.

10 DR. BRIAN MOORE: Yeah, that would be great.

11 PANEL MEMBER LANDOLPH: Thank you.

12 DR. BRIAN MOORE: And you're -- and you're more
13 than welcome. These are all community meetings that we
14 post to our website. And, yeah, anybody is welcome to
15 come to these community steering committee meetings, yeah,
16 that would be great.

17 CHAIRPERSON ANASTASIO: Beate.

18 PANEL MEMBER RITZ: So since these are geared
19 towards immediate reductions, do you have an evaluation
20 program going along, so you can actually see it has an
21 impact, and not only on reduction, but also on health
22 outcomes?

23 DR. BRIAN MOORE: That's a great question. We're
24 trying. What's been very difficult is because -- well --
25 well, from the emissions reductions standpoint, we have a

1 lot of really novel strategies that have to do more with
2 exposure reduction. So historically CARB regionally --
3 we're all about emissions reductions, right? So our
4 calculators are based on replace that switcher at that
5 railyard. You get so much reduction DPM, right?

6 Well now, we're seeing vegetative barriers, truck
7 rerouting. So -- on exposure mitigation, right? So
8 rerouting trucks may not reduce emissions at all. It
9 could maybe increase them a little bit, but it may
10 drastically reduce exposure, which could improve health,
11 right? So we right now are working with air districts to
12 work on ways to capture those benefits that historically
13 haven't.

14 There has been a push. We'd love to have metrics
15 that are the same across the communities, but then also we
16 were trying to walk this line where the whole point of AB
17 617 was to let the communities develop community-specific
18 strategies. So a lot of times the metrics that one
19 community has picked to track are different than another.

20 So right now, that is one thing we are working on
21 and in this revision is finding maybe at least a core
22 group of metrics that can be accepted across communities
23 to track. But just because somewhere like East LA sees a
24 lot of DPM reductions and maybe, let's say, El Centro
25 doesn't, it doesn't mean that El Centro -- there's

1 something wrong there. I mean, El Centro is focused a lot
2 on retrained dust and like different things, right?

3 So there's kind of that -- that need to make sure
4 we can look at the program holistically to make sure we're
5 being successful, but then not get too caught up in
6 comparing across communities, because of the source
7 diversity. But you're right, like the health outcomes has
8 been something community members have been -- been calling
9 for to figure out some way we can track health before and
10 after a strategy is implemented.

11 PANEL MEMBER RITZ: An, I mean, if it's really
12 true that it's not an average lowering of the particles,
13 but where the particles are and maybe particle toxicity,
14 if you have vegetation that filters out the finer parts,
15 then what you could probably do is look at the response --
16 physiologic response to some of these pollutants right?
17 And there are ways to do that, because there are more and
18 more articles out there actually showing what the
19 oxidative stress response is, and the urine measures you
20 can take or what's the inflammatory reaction that's blood
21 based. And, you know, if you show that you have less in
22 these communities across, then, you know, you've been
23 probably quite right on. But you need to be careful in
24 what you're looking for, because long-term health effects
25 is -- you can't look at, but short-term health effects you

1 could.

2 DR. BRIAN MOORE: Well, I'm so glad you brought
3 that up. And I apologize to all the OEHHA staffers, Dave
4 Edwards, if he's on this call, they've been helping us out
5 a ton. So OEHHA actually received some funding to help
6 assist with AB 617. So like what you're saying, we have
7 actually a couple situations where our Research Division
8 is maybe doing an air fill intervention and OEHHA has been
9 able to biomonitor before and after.

10 So we are looking at stuff like that, but you're
11 right, making sure we interpret the results correctly and
12 there aren't false assumptions about what we're seeing,
13 but yeah, I agree with all that -- that's been said. And
14 OEHHA has been a great partner as well.

15 PANEL MEMBER RITZ: Right. And I mean the South
16 Coast Air Quality Management District is very much aware
17 of the PurpleAir monitoring network. And that might also
18 be a great -- because it's so dispersed, right? And it
19 gives you a totally different picture.

20 CHAIRPERSON ANASTASIO: Thank you, Beate.

21 Ahmad.

22 PANEL MEMBER BESARATINIA: On your slide number
23 eight, you have listed the air toxics community concern.
24 One of the items is charbroiling. I'm -- just out of
25 curiosity, I'm wondering what is your target audience? Is

1 it the industrial restaurateurs or is it like residential
2 users, and how are you going to kind of target this
3 audience specifically?

4 DR. BRIAN MOORE: That's a great question and I
5 want to make sure I answer it very concisely, because this
6 has been -- this is more -- this is a great example of one
7 of the challenges in program at whole, because when
8 charbroiling was first shown, like on an inventory, there
9 was some Assumption by community members, they think
10 charbroiling, barbecuing. We're talking about outdoor
11 barbecue pits, out front of like a storefront or even
12 residential barbecuing, right? And there was a
13 miscommunication we had in some communities where that
14 inventory space on commercial charbroiling, which you see
15 at like fast food restaurants and stuff like that.

16 So initially there's some concern they didn't --
17 that the community did not want to penalize small
18 family-owned businesses that were using outdoor grills,
19 right? So then once we cleared it up that there is
20 also -- we're seeing a lot of this a commercial
21 charbroiling and there are ways in -- especially with new
22 construction to develop methods to control come of these
23 emissions, they saw those two things as being different.

24 So, yeah, so there's -- we -- actually, that has
25 been conflated before, but as far as we're concerned with

1 our inventories, we're looking at that commercial
2 charbroiling that we see, like under fire, chain-driven
3 kind of stuff that we're trying to look at controls for,
4 that the community members are interested in, because in
5 some of these communities, I mean, it's -- it's tough,
6 like you -- you smell -- I don't know if you -- you drive
7 by a refinery, and smell something, you cover your mouth
8 and walk the other way. You walk by a burger place and
9 you smell stuff, you're like, oh that smells great. But I
10 mean, that's PM, right, and there can be some VOCs in
11 there and all that.

12 So I think there is a drive to look at reducing
13 commercial charbroiling emissions, because in some
14 communities it is a pretty big slice of the PM pie for
15 sure.

16 CHAIRPERSON ANASTASIO: Thank you, Ahmad.

17 Joe, did you have a question?

18 PANEL MEMBER LANDOLPH: They had a battery
19 recycling factory not far from East LA, which was blowing
20 arsenic and lead of all things into the community. And
21 some of the homes had to have their topsoil excavated and
22 disposed of. Do you know what the status of any of that
23 is?

24 DR. BRIAN MOORE: I don't want to get the wrong
25 place. Is this the Exide facility --

1 PANEL MEMBER LANDOLPH: Yeah.

2 DR. BRIAN MOORE: -- kind of close to Long Beach?

3 PANEL MEMBER LANDOLPH: Yeah.

4 DR. BRIAN MOORE: Yeah, I don't know the current
5 status, but I can -- I can check on that for you.

6 PANEL MEMBER LANDOLPH: Because I know it went to
7 court and the defendants went bankrupt. And then as I
8 understood it, all the legal action ended at that point.

9 DR. BRIAN MOORE: Also, most of my work is done
10 in the Central Valley, but when I first started this
11 program, so that's 2017 or '18, we took a tour of that
12 facility.

13 PANEL MEMBER LANDOLPH: Um-hmm.

14 DR. BRIAN MOORE: And there's some really
15 involved community advocates that were pushing on that.
16 So I'll make sure to find out the status of that for you.

17 PANEL MEMBER LANDOLPH: Thank you.

18 CHAIRPERSON ANASTASIO: Thank you, Joe.

19 Any other comments?

20 I have one comment for you, Brian. So you talked
21 about limited financial resources and you're adding
22 additional communities. Is the plan to sunset communities
23 at some point

24 DR. BRIAN MOORE: Well, we were hope -- we --
25 when we select a community, we consider that like an

1 11-year commitment. So we have one year for the
2 development of the pro -- the plan. We have a five years
3 milestone that we want to see. We think five years -- at
4 least initially -- the may change in the new blueprint.
5 We thought five years was a short enough time to make
6 things happen quickly, but long enough, so you could see
7 some results just based on our experience with regulation.
8 So we have that five-year milestone and then we also want
9 to stay within that community for another five years to
10 make there isn't any backsliding and that we still see
11 these improvements.

12 So each community selected, we think of it as
13 being there for at least 11 years, and we also with trying
14 these new models, we don't want to take away an option
15 that has been working for some communities. So we expect
16 to continue supporting this kind of traditional community
17 selection model. If -- if an air district and a community
18 group want -- have the resources and want to pursue this
19 traditional model of community selection, we, by no means,
20 want to take away options that have been working, so that
21 is -- there will be another challenge moving forward, but
22 yeah we -- we're not -- definitely not sunseting any of
23 those communities.

24 CHAIRPERSON ANASTASIO: Thank you.

25 Any other Panel comments?

1 All right. Seeing none.

2 We will move to public comments. Do we have any
3 public comments?

4 DR. ARASH MOHEGH: We have one public comment
5 from LaDonna.

6 CHAIRPERSON ANASTASIO: Okay.

7 DR. ARASH MOHEGH: And they wanted to know --
8 wanted us to know that previously from the previous item,
9 they raised their hand and they were basically
10 representing two people, so they have a comment from the
11 previous item. I don't know if they have a comment on
12 this item too or not.

13 CHAIRPERSON ANASTASIO: Oh. Okay. Why don't you
14 allow them to speak and we'll see what they have.

15 Thank you, Arash.

16 DR. ARASH MOHEGH: Okay. LoDonna, can you go
17 ahead and unmute yourself, please.

18 DR. RAYMOND TOMPKINS: Hello.

19 CHAIRPERSON ANASTASIO: Hello, yes.

20 DR. RAYMOND TOMPKINS: Can you hear me?

21 CHAIRPERSON ANASTASIO: Yes, we can. Is this Dr.
22 Tompkins?

23 DR. RAYMOND TOMPKINS: Okay. This is Dr.
24 Tompkins. LaDonna had to leave. I've been -- somehow
25 we've got to work on the Zoom connection. She had to

1 forward me her connection so I could communicate with you.

2 Technology, it doesn't always work perfect.

3 We've got to admit that.

4 CHAIRPERSON ANASTASIO: We can hear you fine, so
5 please go ahead.

6 DR. RAYMOND TOMPKINS: Okay. Thank you. To the
7 presenter, could you please show your slides that you had
8 your different goals, because I want to get some clarity
9 in and that. And I look forward to talking to you in
10 Sacramento as well.

11 DR. BRIAN MOORE: Sure I think that -- you mean,
12 like the timeline or that I had one with like tiles on it
13 that had --

14 DR. RAYMOND TOMPKINS: You had tiles like --

15 DR. BRIAN MOORE: It's number 11.

16 DR. RAYMOND TOMPKINS: -- one of the very -- at
17 the very beginning.

18 DR. BRIAN MOORE: I think it might be either 11
19 or 2.

20 DR. RAYMOND TOMPKINS: I did -- I couldn't help
21 here. Sorry.

22 DR. BRIAN MOORE: So I had -- oh, no problem. So
23 one of the tiles, 11, I had six tiles that talked about
24 the concepts we're trying to include in our guidance
25 document revision. And those --

1 DR. RAYMOND TOMPKINS: Yes. Can you put that up
2 there?

3 DR. BRIAN MOORE: Okay. I got it. I think we're
4 trying to right now. So, Victor, that is number 11.

5 DR. RAYMOND TOMPKINS: I hope the clock can slow
6 down on me, so we can get to it perfectly.

7 Racial equality. In your inclusion in this
8 concept, I am pleading with you, if you want to change
9 this, that the methodology employed in risk assessment be
10 more inclusive of the population. I've worked in East
11 Oakland and West Oakland with Ms. Margaret and in Richmond
12 in the Bay Area, and as well as Bayview-Hunters Point.
13 And it is both black and brown people that are most
14 heavily impacted, and unless the risk assessment is
15 utilized their risk genetic susceptibility. I have a
16 problem where I just finished doing VOC studies in
17 Bayview-Hunters Point. And I have benzene for a 20-year
18 period that we measured that exceeds the cancer risk 1 in
19 100,000 over 574 percent above that level. And we had a
20 peak coming off of the Naval shipyard at cancer risk
21 life-time exposure 1 in 10,000. We need the measurements
22 for susceptibility.

23 We have susceptibility but for one G6Pd was 16
24 percent for African Americans. And sickle cell, when I
25 did a field study and sampled the population, it was four

1 percent. That's a 20 percent increase in susceptibility.
2 The question is what is the cancer risk for this
3 population? This is what I'm after. We need that
4 inclusive process and taking in these other variables that
5 are unfortunately was developed in the 1940s during
6 wartime, did the barrel spill over and you're measuring
7 high-dose exposure, which then it said it was
8 predominantly afterwards white males and didn't include a
9 real depiction, just like the silliness of the original
10 breast cancer studies done in the United States were done
11 on white males that have less than one percent chance of
12 developing of breast cancer, but on women or women of
13 color that Dr. Tomas showed in San Francisco had a 77
14 percent.

15 So I'm pleading for an inclusionary process.
16 Don't just engage the community and give us rhetoric. We
17 need real science to be practiced to save lives. And I
18 think AB 617 is mechanism and a tool to incorporate these
19 variables of the past that have not been included and take
20 us into the 21st century. And that is my advocacy of
21 putting best practice. I need to leave the BS, bad
22 science, behind and look forward in how we can work
23 together in saving lives. Because every month I've had to
24 say goodbye to a friend out here in San Francisco, and
25 it's directly related. And I'm also chairman of the Board

1 for Biomonitoring in Bayview-Hunters Point. So I'm
2 working with doctors and toxicologists in this area.

3 Please, let's look at a more inclusive process,
4 because we're dying in disproportionate numbers.

5 Any comments to me?

6 DR. BRIAN MOORE: Well, I just want to say thank
7 you, Dr. Tompkins. I heard you make these same and other
8 great points in the health risk assessment workshop last
9 week. So we've heard you and we work with that group.
10 And you're always willing to reach out to me to like --
11 you know people much higher up the chain than myself,
12 so -- but if you do want to sen me off an email.

13 (Laughter.)

14 DR. BRIAN MOORE: I know you worked with Veronica
15 Eady and people over there at Bay Area, but yeah, anyway
16 we can connect and move this forward, yeah, I'm here.

17 DR. RAYMOND TOMPKINS: Yeah. Everybody. It's
18 not about me, as Dr. King said, it's about we shall
19 overcome. And together, we can come together and make a
20 difference, rather than people trying to play us off the
21 politics of science, but that if we argue for good
22 practices and good practices in science, I think we can
23 do -- make a difference.

24 And thank you, Brian. I look forward to talking
25 to you.

1 CHAIRPERSON ANASTASIO: Great. Thank you, Dr.
2 Tompkins for your comment.

3 Arash, do I see someone with a hand up on Zoom?
4 No.

5 Okay. So I believe we're finished then with
6 public comment?

7 DR. ARASH MOHEGH: (Nods head.)

8 CHAIRPERSON ANASTASIO: Okay. Great.

9 Well, Brian, thank you very much for your
10 presentation. We appreciate the update on community air
11 protection matters and we look forward to your next one.
12 And good luck with the revision of the program guidelines.

13 DR. BRIAN MOORE: Well, thanks a lot.

14 CHAIRPERSON ANASTASIO: All right. That ends our
15 planned business.

16 I just have a few administrative points. First
17 one is Norm just sent out an email to set up the time and
18 day for our fall meeting. If you haven't yet responded to
19 his poll, please do so. And as always, please be very
20 generous with your availability, so that it will make it a
21 little easier to schedule things.

22 With that, I believe we have exhausted our
23 agenda, so I am looking for a motion to adjourn.

24 PANEL MEMBER MESSER: So moved.

25 CHAIRPERSON ANASTASIO: Do I have a second?

1 PANEL MEMBER BESARATINIA: (Hand raised.)

2 CHAIRPERSON ANASTASIO: All in favor?

3 (Hands raised.)

4 CHAIRPERSON ANASTASIO: Fantastic. Unanimous.

5 Thank you, everyone, for coming today. It's good to see
6 you in person after two years of seeing you as a little
7 rectangle. And I look forward to seeing everyone in the
8 fall. And thanks all to Hnin Hnin, and Norm, and Arash,
9 and Victor, for all their hard work making the meeting
10 happen.

11 All right. Thank you.

12 (Thereupon the California Air Resources Board,
13 Scientific Review Panel adjourned at 1:46 p.m.)

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