

**ENVIRONMENTAL PROTECTION AGENCY****40 CFR Part 170**

[EPA-HQ-OPP-2011-0184; FRL-9395-8]

RIN 2070-AJ22

**Pesticides; Agricultural Worker Protection Standard Revisions****AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Proposed rule.

**SUMMARY:** EPA is proposing updates and revisions to the existing worker protection regulation for pesticides. The proposed changes are in response to extensive stakeholder review of the regulation and its implementation since 1992, and reflect current research on how to mitigate occupational pesticide exposure to agricultural workers and pesticide handlers. EPA is proposing to strengthen the protections provided to agricultural workers and handlers under the worker protection standard by improving elements of the existing regulation, such as training, notification, communication materials, use of personal protective equipment, and decontamination supplies. EPA expects the revisions, once final, to prevent unreasonable adverse effects from exposure to pesticides among agricultural workers and pesticide handlers; vulnerable groups, such as minority and low-income populations, child farmworkers, and farmworker families; and the general public. EPA recognizes the importance and independence of family farms and is proposing to expand the immediate family exemption to the WPS.

**DATES:** Comments must be received on or before June 17, 2014.**ADDRESSES:** Submit your comments, identified by docket identification (ID) number EPA-HQ-OPP-2011-0184, by one of the following methods:

- *Federal eRulemaking Portal:* <http://www.regulations.gov>. Follow the online instructions for submitting comments. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute.

- *Mail:* OPP Docket, Environmental Protection Agency Docket Center (EPA/DC), Mail code: 28221T, 1200 Pennsylvania Ave. NW., Washington, DC 20460. In addition, please mail a copy of your comments on the information collection provisions to the Office of Information and Regulatory Affairs, Office of Management and

Budget, Attn: Desk Officer for EPA, 725 17th St. NW., Washington, DC 20503.

- *Hand Delivery:* To make special arrangements for hand delivery or delivery of boxed information, please follow the instructions at <http://www.epa.gov/dockets/contacts.htm>. Additional instructions on commenting or visiting the docket, along with more information about dockets generally, is available at <http://www.epa.gov/dockets>.

**FOR FURTHER INFORMATION CONTACT:**

Kathy Davis, Field and External Affairs Division, Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave. NW., Washington, DC 20460-0001; telephone number: (703) 308-7002; fax number: (703) 308-2962; email address: [davis.kathy@epa.gov](mailto:davis.kathy@epa.gov).

**SUPPLEMENTARY INFORMATION:****I. General Information***A. Does this action apply to me?*

You may be potentially affected by this action if you work in or employ persons working in production agriculture where pesticides are applied.

The following list of North American Industrial Classification System (NAICS) codes is not intended to be exhaustive, but rather provides a guide to help readers determine whether this document applies to them. Potentially affected entities may include:

- Agricultural Establishments (NAICS code 111000), establishments or persons, such as farms, orchards, groves, greenhouses, and nurseries, primarily engaged in growing crops, plants, vines, or trees and their seeds.

- Nursery and Tree Production (NAICS code 111421), e.g., establishments or persons primarily engaged in (1) growing nursery products, nursery stock, shrubbery, bulbs, fruit stock, sod, and so forth, under cover or in open fields and/or (2) growing short rotation woody trees with a growth and harvest cycle of 10 years or less for pulp or tree stock.

- Timber Tract Operations (NAICS code 113110), e.g., establishments or persons primarily engaged in the operation of timber tracts for the purpose of selling standing timber. Forest Nurseries and Gathering of Forest Products (NAICS code 113210), e.g., establishments or persons primarily engaged in (1) growing trees for reforestation and/or (2) gathering forest products, such as gums, barks, balsam needles, rhizomes, fibers, Spanish moss, ginseng, and truffles.

- Farm Labor Contractors and Crew Leaders (NAICS code 115115), e.g.,

establishments or persons primarily engaged in supplying labor for agricultural production or harvesting.

- Farm Workers (NAICS codes 11511, 115112, and 115114), e.g., establishments or persons primarily engaged in providing support activities for growing crops; establishments or persons primarily engaged in performing a soil preparation activity or crop production service, such as plowing, fertilizing, seed bed preparation, planting, cultivating, and crop protecting services; and establishments or persons primarily engaged in performing services on crops, subsequent to their harvest, with the intent of preparing them for market or further processing.

- Pesticide Manufacturers (NAICS code 325320), e.g., establishments primarily engaged in the formulation and preparation of agricultural and household pest control chemicals (except fertilizers).

- Farm Worker Support Organizations (NAICS codes 813311, 813312, and 813319), e.g., establishments or persons primarily engaged in promoting causes associated with human rights either for a broad or specific constituency; establishments or persons primarily engaged in promoting the preservation and protection of the environment and wildlife; and establishments primarily engaged in social advocacy.

- Farm Worker Labor Organizations (NAICS code 813930), e.g., establishments or persons primarily engaged in promoting the interests of organized labor and union employees.

- Pesticide Handling in Forestry (NAICS code 115310), e.g., establishments or persons primarily providing support activities for forestry, such as forest pest control.

- Administration of Conservation Programs (NAICS code 924120), e.g., government establishments primarily engaged in the administration, regulation, supervision and control of land use, including recreational areas; conservation and preservation of natural resources; erosion control; geological survey program administration; weather forecasting program administration; and the administration and protection of publicly and privately owned forest lands. Government establishments responsible for planning, management, regulation and conservation of game, fish, and wildlife populations, including wildlife management areas and field stations; and other administrative matters relating to the protection of fish, game, and wildlife are included in this industry.

- Pesticide Handling on Farms (NAICS code 115112), e.g.,

establishments or persons primarily engaged in performing a soil preparation activity or crop production service, such as seed bed preparation, planting, cultivating, and crop protecting services.

- Crop Advisors (NAICS codes 115112, 541690, 541712) e.g., establishments or persons who primarily provide advice and assistance to businesses and other organizations on scientific and technical issues related to pesticide use and pest pressure.

*B. What should I consider as I prepare my comments for EPA?*

1. *Submitting CBI.* Do not submit this information to EPA through regulations.gov or email. Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or CD-ROM that you mail to EPA, mark the outside of the disk or CD-ROM as CBI and then identify electronically within the disk or CD-ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket. Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

2. *Tips for preparing your comments.* When submitting comments, remember to:

- i. Identify the document by docket ID number and other identifying information (subject heading, **Federal Register** date and page number).
- ii. Follow directions. The Agency may ask you to respond to specific questions or organize comments by referencing a Code of Federal Regulations (CFR) part or section number.
- iii. Explain why you agree or disagree; suggest alternatives and substitute language for your requested changes.
- iv. Describe any assumptions and provide any technical information and/or data that you used.
- v. If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.

vi. Provide specific examples to illustrate your concerns and suggest alternatives.

vii. Explain your views as clearly as possible, avoiding the use of profanity or personal threats.

viii. Make sure to submit your comments by the comment period deadline identified.

**II. Background**

*A. Executive Summary*

1. *Purpose of the regulatory action.* The Environmental Protection Agency (EPA or the Agency) proposes to revise the existing Worker Protection Standard (WPS) at 40 CFR part 170 to reduce the incidence of occupational pesticide exposure and related illness among agricultural workers (workers) and pesticide handlers (handlers) covered by the rule. This regulation, in combination with other components of EPA’s pesticide regulatory program, is intended to prevent unreasonable adverse effects of pesticides among pesticide applicators, workers, handlers, the general public, and vulnerable groups, such as minority and low-income populations.

2. *Summary of the major provisions.* This proposal revises the existing WPS in several areas: Training, notification, hazard communication, minimum age, and personal protective equipment. The key changes are described below.

For training, the proposal requires employers to ensure that workers and handlers receive pesticide safety training every year. The content of the training is expanded to include how to reduce take-home exposure to pesticides, as well as other topics. Employers are required to retain records of the training provided to workers and handlers for 2 years from the date of training.

For notification, the proposal requires employers to post treated areas when the product used has a restricted-entry interval (REI) greater than 48 hours. It also requires that workers performing early-entry tasks, i.e., entering a treated area when an REI is in effect, receive information about the pesticide used in the area where they will work, the specific task(s) to be performed, and the

amount of time the worker may remain in the treated area. Finally, the proposal requires employers to keep a record of the information provided to workers performing early-entry tasks.

For hazard communication, the proposal eliminates the requirement for a central display of pesticide application-specific information. The proposal requires the employer to maintain and make available upon request the pesticide application-specific information, as well as the labeling and safety data sheets for pesticides used on the establishment for 2 years.

For minimum age, the proposal requires that handlers and workers performing early-entry tasks be at least 16 years old. This minimum age does not apply to immediate family members working on an establishment owned by another immediate family member.

For personal protective equipment (PPE), the proposal adopts the Occupational Safety and Health Act requirements for respirator use by handlers, i.e., fit test, medical evaluation, and training. In addition, the proposal adopts the existing California standard for closed systems.

3. *Costs and impacts.* Under section 3(f)(4) of Executive Order 12866 (58 FR 51735; October 4, 1993), this action is a “significant regulatory action” because it may raise novel legal or policy issues arising out of legal mandates, the President’s priorities, or the principles set forth in the Executive Order. Accordingly, EPA submitted this proposed rulemaking to the Office of Management and Budget (OMB) for review under Executive Orders 12866 and 13563 (76 FR 3821; January 21, 2011), and any changes made in response to OMB recommendations have been documented in the public docket for this action.

EPA has prepared an analysis of the potential costs and impacts associated with this rulemaking. This analysis is summarized in greater detail in Unit II.G. of this proposal. The following chart provides a brief outline of the costs and impacts of this proposal:

Category	Description	Source
Monetized Benefits Avoided acute pesticide incidents.	\$5–14 million/year after adjustment for underreporting of pesticide incidents	EA Chapter 6.5.
Qualitative Benefits .....	<ul style="list-style-type: none"> <li>• Willingness to pay to avoid acute effects of pesticide exposure beyond cost of treatment and loss of productivity.</li> <li>• Reduced latent effect of avoided acute pesticide exposure</li> <li>• Reduced chronic effects from lower chronic pesticide exposure to workers, handlers, and farmworker families, including a range of illnesses such as Non-Hodgkins lymphoma, prostate cancer, Parkinson’s disease, lung cancer, chronic bronchitis, and asthma.</li> </ul>	EA Chapter 6.

Category	Description	Source
Monetized Costs ..... Small Business Impacts .....	\$62–73 million/year ..... No significant impact on a substantial number of small entities ..... • The rulemaking will affect over 300,000 small farms, nurseries, and greenhouses and several hundred small commercial entities that are contracted to apply pesticides. • Impact less than 0.1% of the annual value of sales or revenues for the average small entity.	EA Chapter 5.2. EA Chapter 5.4.
Impact on Jobs .....	The rulemaking will have a negligible effect on jobs and employment ..... • The marginal cost of a typical farmworker is expected to increase \$5/year • The marginal cost for a more skilled pesticide handler is expected to increase by \$60 per year, but this is less than 0.3 percent of the cost of a part-time employee.	EA Chapter 5.3.

*B. What action is the Agency taking?*

The WPS is a regulation intended to reduce the risks of injury or illness resulting from agricultural workers' and handlers' use and contact with pesticides on farms, forests, nurseries and greenhouses. The rule does not cover persons working directly with livestock. The existing regulation has provisions for employers to provide workers and handlers with pesticide safety training, posting and notification of treated areas, entry restrictions, and PPE for workers who enter treated areas after pesticide application to perform crop-related tasks, as well as for handlers who mix, load, and apply pesticides. The rule was promulgated in 1992 and implementation was delayed until 1995.

The changes in this proposed revision of the WPS are intended to address shortcomings in the current regulations, such as:

- Absence of a minimum age for handlers of pesticides and agricultural workers engaged in early-entry activities,
- Inadequate hazard communication provisions,
- Insufficient training of agricultural workers before they face potential pesticide exposure,
- Unclear requirements regarding the decontamination supplies the WPS requires employers to provide, and
- Insufficient recordkeeping to verify compliance with regulations.

EPA believes that the proposed changes offer targeted improvements that would reduce risk through protective requirements and improve operational efficiencies. EPA expects the proposed changes to:

- Improve effectiveness of worker and handler training,
- Improve protections to workers during restricted-entry intervals (REIs),
- Improve protections for workers during and after pesticide applications,
- Expand the information provided to workers, thus improving hazard communication protections,

- Expand the content of pesticide safety information displayed, thus improving the display's effectiveness,
- Improve the protections for crop advisor employees,
- Increase the amounts of decontamination water available, thus improving the effectiveness of the decontamination process,
- Improve the emergency response when workers experience pesticide exposures,
- Improve the organization of the WPS, thus improving employers' ability to understand and comply with the provisions,
- Clarify the coverage of the WPS to those employed and receiving a salary or wage to ensure protection for occupational pesticide workers,
- Protect children by establishing a minimum age for handlers and for workers who enter a treated area during an REI while maintaining an exemption to the minimum age requirement for children working on the establishment of an immediately family member, and
- Improve flexibility for small farmers and members of their immediate family by expanding the definition of immediate family members to be more inclusive and retaining the exemptions from almost all WPS requirements for owners and their immediate family members.

*C. What is the Agency's authority for taking this action?*

This action is issued under the authority of sections 2 through 35 of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 7 U.S.C. 136–136y, and particularly section 25(a), 7 U.S.C. 136w(a).

*D. Related Rulemaking*

EPA is also considering a proposed rule to amend 40 CFR part 171, titled "Certification of Pesticide Applicators." Since parts 170 and 171, along with other components of the pesticide program, work together to reduce and prevent unreasonable adverse effects to pesticides, EPA may use any comments

received on the proposed amendments to part 171 when formulating a final rule to amend the current WPS at part 170.

*E. Benefits of the Proposal*

The proposed changes to the current WPS requirements are expected to lead to an overall reduction in incidents of unsafe pesticide exposure and to improve the occupational health of the nation's agricultural workers and pesticide handlers. This section provides an overview of the qualitative benefits of the proposal and the estimated benefits that would accrue from avoiding acute pesticide exposure in the population protected by the WPS. It also provides an estimate of the number of chronic illnesses with a plausible association with pesticide exposure that would have to be prevented by the proposed changes in order for the total estimated benefits to meet the estimated cost of the proposal.

A sizeable portion of the agricultural workforce may be exposed occupationally to pesticides and pesticide residues. These exposures can pose significant long- and short-term health risks. It is difficult to quantify a specific level of risk and project the risk reduction that would result from this proposal because workers and handlers are potentially exposed to a wide range of pesticides with varying toxicities and risks. However, there is strong evidence that workers and handlers may be exposed to pesticides at levels that can cause adverse effects and that both the exposures and the risks can be substantially reduced. EPA believes the provisions in the proposed rule would reduce pesticide exposures and the associated risks.

The estimated quantified benefits from reducing acute worker and handler exposure to pesticides total about \$11.4 million annually (Ref. 1). This conservative estimate includes only the avoided costs in medical care and lost productivity to workers and handlers and assumes that just 25% of acute

pesticide incidents are reported. It does not include quantification of the reduction in chronic effects of pesticide exposure to workers and handlers, reduced effects of exposure including developmental impacts, to children and pregnant workers and handlers or willingness to pay to avoid symptoms of pesticide exposure. Because the chronic effects of pesticide exposures are seldom attributable to a specific cause, and thus are unlikely to be recorded in pesticide poisoning databases, EPA is not able to quantify the benefits expected to accrue from proposed WPS changes that would reduce chronic exposure to pesticides. However, associations between pesticide exposure and certain cancer and non-cancer chronic health effects are well documented in the peer-reviewed literature, and reducing these chronic health effects is an important FIFRA goal.

Even if the lack of quantitative data impairs the reliability of estimates of the total number of chronic illnesses avoided, it is reasonable to expect that the proposed changes to the WPS will reduce the incidence of chronic disease resulting from pesticide exposure. Therefore, EPA conducted a “break even” analysis to consider the plausibility of the proposed changes to the WPS reducing the incidence of chronic disease enough to cause the net benefits of the proposed rule to exceed its anticipated costs. Under this analysis, EPA looked at the costs associated with non-Hodgkin’s lymphoma, prostate cancer, Parkinson’s disease, lung cancer, bronchitis, and asthma and their frequency among agricultural workers, and found that reducing the incidence of lung cancer by 0.08% and the incidence of the other chronic diseases by 0.8% per year (about 53 total cases per year among the population of workers and handlers protected under the WPS) would produce quantified benefits sufficient to bridge the gap between the quantified benefits from reducing acute incidents and the \$62.1 million to \$72.9 million cost of the proposed rule. Overall, the weight of evidence suggests that the proposed requirements would result in long-term health benefits to agricultural workers and pesticide handlers in excess of the less than 1% reduction in just six diseases that corresponds with the break-even point for the proposed rule, not only by reducing their daily risk of pesticide exposures, but also by improving quality of life throughout their lives, resulting in a lower cost of health care and a healthier society.

The proposed changes to the current WPS requirements, specifically

improved training on reducing pesticide residues brought from the treated area to the home on workers and handlers’ clothing and bodies and establishing a minimum age for handlers and early entry workers, other than those covered by the immediate family exemption, mitigate the potential for children to be exposed to pesticides directly and indirectly. The unquantified benefit to adolescent workers and handlers, as well as children of workers and handlers is great; reducing exposure to pesticides could translate into fewer sick days, fewer days missed of school, improved capacity to learn, and better long-term health. Parents and caregivers reap benefits by having healthier families, fewer missed workdays, and better quality of life.

By proposing several interrelated exposure-reduction measures, the revised rule is expected to mitigate approximately 56% of reported acute WPS-related pesticide incidents. EPA believes the proposed rule would substantially mitigate for these workers and handlers the potential for adverse health effects (acute and chronic) from occupational exposures to such pesticides and their residues. These measures include requirements intended to reduce exposure by:

- Ensuring that workers and handlers are informed about the hazards of pesticides—the proposed rule changes the content and frequency of required pesticide safety training, as well as proposing changes to ensure that the pesticide safety training is more effective.

- Reducing exposure to pesticides—among other things, the proposed rule changes and clarifies the requirements for personal protective equipment. It also makes changes to the timing of applications when people are nearby. These and other provisions should directly reduce exposure in the agricultural workforce.

- Mitigating the effects from exposures that occur—some accidental exposures are inevitable. EPA expects the proposed rule to mitigate the severity of health impacts by updating and clarifying what is required to respond to exposures.

Further detail on the benefits of this proposal is provided in the document titled “Economic Analysis of Proposed Revisions to the Worker Protection Standard” which is available in the docket for this rulemaking (Ref. 1). The following briefly highlights the anticipated benefits:

1. Reduce incidents of exposure and illness through:

- a. *Expanded and more frequent training for workers and handlers.*

EPA’s current requirement for training workers and handlers fails to address or to highlight the importance of some self-protective practices, such as reducing pesticide exposure to workers, handlers, and their families by avoiding bringing pesticide residues home on clothing, shoes, or skin. The existing regulation requires employers to provide training every 5 years. The proposed rule, if finalized, would expand the content of the training, increase the frequency of training to every year, and set higher standards for trainers. Providing workers and handlers with information on reducing pesticide exposure in a manner they understand, e.g., in a language they speak and at an appropriate education level, and at intervals more likely to result in retention of the information, would benefit workers and handlers. Thus, EPA believes the proposed rule would reduce overall pesticide exposure among workers, handlers, and their families.

b. *Improved posting of pesticide-treated areas.* The current WPS allows growers to provide either an oral or posted warning to workers about which areas have been treated with a pesticide and are under an REI unless the pesticide label requires both an oral and posted warning. Many of the occupational pesticide illnesses reported to state health agencies have occurred when workers entered a treated area before the REI expired. The proposed regulation would require posting of all treated areas with an REI of greater than 48 hours, providing a visual reminder to workers not to enter the specific pesticide-treated area without proper protection.

c. *Additional information before entering a pesticide-treated area under an REI.* As mentioned above, many incidents of pesticide exposure among workers result from entering an area while an REI is in effect. The proposed rule would require that worker training include information about the limited circumstances in which workers may enter a treated area under an REI, the hazards workers may face, and that the employer must provide the proper PPE. Employers would also have to inform workers entering a treated area under an REI about the conditions under which they enter the treated area and the maximum time they are permitted to stay in the treated area. Providing workers with general information about working in a treated area under an REI as well as with specific information about the circumstances of each instance should make them aware of the elevated risks and the steps necessary to protect themselves.

*d. Access to more information about chemical hazards in the workplace.* The current WPS requires the employer to maintain records of what pesticides have been used or have had an REI in effect on the establishment in the last 30 days. The employer must provide the name of the pesticide, EPA registration number, and other general information at a central location on the establishment. The proposed rule would require employers to maintain a copy of pesticide labeling, the application records, and the Safety Data Sheet (SDS, formerly known as Material Safety Data Sheet, or MSDS), as well as the information currently required under the WPS, for 2 years after the product was applied on the establishment. The employer would be required to provide this information upon request and to ensure that health care providers treating a worker or handler who was exposed on the establishment receive a copy of this information. The more specific information required, longer retention period, and provision to provide additional information to health care providers should assist the health care provider in determining the specific types of pesticides to which a worker or handler may have been exposed and in more effectively treating the injured person.

*e. Strengthened requirements for handlers during applications.* The risk of illness resulting from exposure to pesticides through drift is largely borne by agricultural workers. A recent study estimates that 37% to 68% of acute pesticide-related illnesses in agricultural workers are caused by spray drift (Ref. 2). The proposed rule would require handlers to immediately stop an application if, during the application, anyone other than a properly equipped handler enters the entry-restricted area or the area treated with pesticides. This, together with the proposal to create entry-restricted areas around the treated area for farms, forests and nurseries, is expected to result in reduced incidents of worker exposure through unintentional contact during application or through drift.

2. Strengthen protection for children through:

*a. Implementing a minimum age of 16 for handlers and early-entry workers.* The current WPS does not have a minimum age for handlers or early-entry workers. These tasks involve contact with concentrated forms of pesticides, applying pesticides, or entering pesticide-treated areas before the REI has expired. Children may be more susceptible to the effects of pesticide exposure because their systems are developing, and research shows that

adolescents have not fully developed informed decisionmaking skills. The Fair Labor Standards Act (FLSA) establishes a minimum age of 16 for youth engaged in occupations deemed hazardous by the Secretary of Labor (29 U.S.C. 213(c)(2)). This includes persons handling toxicity category I and II pesticides in agriculture 29 CFR 570.71(a)(9). The FLSA prohibits youth under the age of 16 engaged in nonagricultural employment from any work involving pesticides. Implementing a requirement for handlers and early-entry workers to be at least 16 years old would ensure that all persons handling pesticides, regardless of the toxicity level, are protected, thereby reducing their overall risk of pesticide exposure and illness. Persons under the age of 16 working on the establishment owned by an immediate family member would be exempt from the proposed minimum age requirements.

*b. Improving training for workers and handlers on reducing take-home pesticide exposure.* The current WPS training does not provide specific information on how workers and handlers can minimize the possibility for transferring pesticide residues from their clothing, bodies, and shoes to their homes, vehicles, and family members. Although studies documenting the effects of take-home pesticide exposure are not conclusive, EPA has a reasonable concern about the potential for unreasonable adverse effects caused by exposure to workers, handlers, and their families. The proposed modest addition to training would educate workers and handlers on how to protect themselves and their families from take-home pesticide exposure.

3. Reduce some burdens on growers by:

*a. Eliminating duplicative respirator requirements.* Agricultural worker and handler employers may also be subject to regulations issued by other federal agencies, such as the Occupational Safety and Health Administration (OSHA). The current WPS standard for proper use and maintenance of a respirator differs from the standard established by OSHA. The proposed rule harmonizes the requirements for agricultural employers that may be required to provide a respirator for their employees using pesticides under the WPS with those issued by OSHA for respirator use in agriculture beyond pesticide use in order to reduce the burden on employers to comply with two separate standards.

*b. Providing a national mechanism to verify worker and handler training.* Under the current WPS employers may

be uncertain about what measures they must take to verify whether a worker or handler has already received the required pesticide safety training on another establishment. EPA administers a voluntary training verification system, but it is not used nation-wide or consistently. As a result, many employers provide pesticide safety training to all new employees. The proposed revisions include a provision for the employer to provide the worker or handler with a copy of the record of the training, including worker or handler name, employer, trainer name, and date of training. Workers and handlers can provide this record to their next employer as proof of valid training and for the new employer to maintain a copy in his or her records. EPA believes a reliable training verification system will reduce overall burden on agricultural and handler employers.

*c. Streamlining notification requirements between handler employers and agricultural establishment employers.* Under the current WPS, handler employers are required to notify the owner of the agricultural establishment about the start and end time of applications, as well as changes to the application start time and end time or application duration, before the application begins. The proposed changes would require handlers or their employers to provide changes to pesticide application plans to the agricultural employer within 2 hours of the end of the application rather than before the application. Changes to the estimated application end time of less than one hour would not require notification.

*d. Improving clarity of the regulation.* The Agency proposes to revise and reorganize the WPS to enhance the ability of employers to understand their responsibilities under the regulation, which could lead to increased compliance with the rule. The proposed rule, if finalized, would reorganize the rule into four sections: (1) General requirements, (2) responsibilities of agricultural employers, (3) responsibilities of handler employers, and (4) exceptions. Employers' greater understanding and compliance with the WPS would ensure that workers and handlers are provided with the information and equipment they need to protect themselves. In turn, this should contribute to reduced incidents of unreasonable adverse effects from pesticide exposure.

#### *F. Request for Comments*

The Agency invites the public to provide its views and suggestions for changes on all of the proposals in this

document. Specifically, the Agency requests the public to consider and provide input on the following when providing comments:

- The need for, value of, and any alternatives to the requirements described in this document.
- The studies and scientific articles used as the basis of this proposed rule.
- The clarity of the proposed revisions.
- The ability to effectively enforce the proposed regulation.
- The economic analysis of the proposed rule, including its underlying assumptions, economic data, high- and low-cost options and alternatives, and benefits.

Additionally, in other parts of this proposed rule, EPA is specifically requesting comments on certain issues. EPA welcomes comments on these topics of particular interest to the Agency.

Commenters are encouraged to present any data or information that should be considered by EPA during the development of the final rule. Describe any assumptions and provide any technical information and data used in preparing your comments. Explain evaluations or estimates in sufficient detail to allow for them to be reproduced for validation. Commenters are reminded that the submission of data derived from human research should include information concerning the ethical conduct of such research, in compliance with the requirements at 40 CFR 26.1303.

#### *G. Reasons for The Proposed Action*

The WPS is more than 20 years old and EPA believes it can be improved. Since the late 1990s, EPA has engaged a wide range of stakeholders to evaluate the effectiveness of the WPS and to determine if improvements are necessary. EPA met with groups including, but not limited to, farmworker organizations, health care providers, state regulators, pesticide manufacturers, farmers, organizations representing agricultural commodity producers, and crop advisors. Through public meetings and federal advisory committees, and as individuals and small groups, a broad spectrum of stakeholders provided recommendations to EPA. Many of the proposed changes address their recommendations and concerns.

EPA has also reviewed available information about occupational pesticide exposure in agriculture. The Agency's review of these reports indicates that many incidents might have been avoided if workers and handlers had better training, were better

notified of treated areas, and used PPE properly when required. For example, workers became ill after entering a treated area before the REI expired or without wearing the proper equipment, and through drift from a nearby pesticide application. EPA believes these types of incidents could be significantly reduced by enhancing the training for workers and handlers and strengthening provisions of the regulation designed to keep workers and handlers out of pesticide-treated areas unless they have the proper information and PPE.

The great majority of agricultural workers and handlers are disadvantaged. The National Agricultural Worker Survey (NAWS) data indicate the median family income range was \$12,500–\$14,999, many do not speak English and are not literate in their native language, and workers face challenges accessing health care and housing (Ref. 3). Workers and handlers experience risks from occupational pesticide exposure that are greater than those faced by the general population because workers and handlers work with and around pesticides on a daily basis, and language and literacy barriers make effective hazard communication a challenge. EPA is paying special attention to the disproportionate burden or risk carried by this disadvantaged community. The proposed rule as a whole addresses many worker safety concerns; throughout this document the environmental justice concerns relative to specific changes will be highlighted.

In conjunction with various non-regulatory programs, the WPS requirements are intended, among other things, to reduce the risks of illness or injury to workers and handlers resulting from occupational exposure to pesticides on agricultural establishments. Broadly speaking, the WPS provisions are meant to (1) inform workers and handlers about the hazards and risks from pesticides they use or to which they come into contact in the workplace, (2) protect workers and handlers from occupational exposure to pesticides and the potential adverse effects of pesticides, and (3) mitigate the potential adverse effects of unavoidable pesticide exposure, including accidents. Within these categories, EPA evaluated the costs and benefits of alternative requirements and is proposing a set of requirements that, in combination, is expected to achieve substantial benefits at minimum cost.

The overall costs of the proposal range from \$62.1 to \$72.9 million annually. These costs would be borne almost entirely by agricultural establishments, those who employ

workers and handlers and use pesticides. Although the cost per establishment will vary by the number and type of employees, EPA estimates that the annual cost to large establishments would be \$340 to \$400 per year. Small establishments would incur a lower cost of \$130 to \$150 per year, which amounts to less than 0.1 percent of their annual revenue. Presented differently, the additional cost of employing a worker is estimated at less than \$5 per year and the additional cost of employing a handler is estimated at about \$60 per year. EPA does not believe the cost of the regulation will have a negative impact on employment.

The proposal, if finalized, would reduce the disproportionate risks associated with occupational pesticide exposure that currently fall on workers, handlers, and their families. Agricultural and handler employers are the group responsible for, and that benefit from, pesticide application on their establishments. Therefore, EPA believes it is appropriate for these employers to bear the cost of the protections for their employees, rather than to impose the costs on workers and handlers themselves. Through the WPS and these proposals, EPA seeks to have those responsible for making pesticide use decisions and applying pesticides internalize the effects of their decisions. This would minimize the externalities, i.e., undesirable or unintended consequences of decisions that result in negative consequences for other parties, to workers and handlers.

The benefits of the proposed rule primarily accrue to workers, handlers and, indirectly, to their families. EPA estimates the quantitative value of avoided acute incidents as a result of the proposed rule to be between \$1.2 million to \$2.8 million annually (Ref. 1). However, EPA recognizes that this estimate is biased downward by an unknown degree. First, pesticide incidents, like many illnesses and accidents, are underreported because sufferers may not seek medical care, cases may not be correctly diagnosed, and correctly diagnosed cases may not be filed with the central reporting database. Also, many symptoms of pesticide poisoning, such as a fatigue, nausea, rash, dizziness, and diarrhea, may be confused with other illnesses and may not be reported by the workers as related to their occupational exposure. Studies estimate that underreporting of pesticide exposure by workers and handlers ranges from 20 to 90 percent. Adjusting the estimate based on a reasonable assumption that only 25% of acute incidents are reported

brings the estimated benefits from reducing acute pesticide incidents to \$11.4 million annually (Ref. 1).

Second, EPA's approach to estimating the quantitative benefits of the proposal only measures avoided medical costs and lost wages, not the willingness to pay to avoid possible symptoms due to pesticide exposure, which could be substantially higher. It also does not take into account the disenfranchised nature of this population and the relative impact that lost work time would have on their incomes and family health. An increase in protections across the entire worker population would be more beneficial and likely to effect positive change than requiring individuals to value and pay for their own increase in safety. Workers and handlers may not be able to pay for the improvements to their own safety, necessitating intervention by the government to ensure these populations are adequately protected.

Well-documented associations between pesticide exposure and certain cancer and non-cancer chronic health effects exist in peer-reviewed literature; however, the wide range of employment histories and pesticide exposures characteristic of the agricultural workforce generally prevents reliable estimates of the full impact of chronic pesticide exposure. In order to account for the reduction in chronic diseases expected as a result of the proposed WPS changes, OPP used a "break-even" analysis. Based on a literature review, EPA evaluated the costs associated with six chronic illnesses that have well-documented association with agricultural pesticide exposure: non-Hodgkin's lymphoma, prostate cancer, Parkinson's disease, lung cancer, bronchitis, and asthma. Owing to the high costs associated with these chronic illnesses, improvements to the WPS that could reduce the frequency of these illnesses among workers and handlers by less than 1% (53 total cases per year) would result in sufficient benefits to bridge the gap between the estimated costs of the revisions and the anticipated benefits associated with reducing acute pesticide exposures. For the reasons identified below, it is reasonable to expect that the proposed changes to the WPS will reduce chronic pesticide exposures enough to reduce the frequency of chronic illnesses by at least 0.08% for lung cancer and at least 0.8% for the other illnesses considered.

EPA believes the qualitative benefits of the proposed rule are substantial. The proposals for more frequent, expanded training, better identification of treated areas, strengthened requirements for PPE, and clarifying the responses and

information required in the event of an emergency exposure all provide workers and handlers with more information and a better ability to protect themselves from risks associated with pesticide exposure. The proposals complement each other and the resulting benefits are derived from implementation of the whole package. Overall, the weight of evidence suggests that the proposed requirements will result in both short- and long-term health benefits to agricultural workers and pesticide handlers.

In addition, many of the proposed changes to current WPS requirements would specifically mitigate risks to children. The proposal would implement a minimum age of 16 for most handlers and early-entry workers; the minimum age would not apply to handlers and early-entry workers on an establishment owned by an immediate family member. EPA believes that these two tasks present a higher risk of exposure than do the general tasks assigned to a worker. Since children's bodies are still developing, they may be more susceptible to these elevated risks and therefore would benefit from strengthened protections. In addition, the proposal seeks through additional training to reduce the potential for workers to transport pesticide residues home to their families. Although studies are inconclusive about the effects of pesticides transferred from the treated area to the home, EPA believes that providing additional general information to workers and handlers about steps that may mitigate any potential risk would be prudent. Thus, the proposed changes are expected to reduce children's exposure to pesticides.

In the almost two decades since the 1992 WPS was implemented, EPA has learned from the Pesticide Program Dialogue Committee, National Assessment of the Pesticide Worker Safety Program process, meetings with state regulators, and other stakeholder interaction, that the 1992 rule needs improvements. EPA believes that the data available to the Agency supports this conclusion. The proposed rule reflects the Agency's commitment to pay particular attention to the health of children and environmental justice concerns. The proposal also aligns with the President's January 18, 2011 Executive Order 13563 (76 FR 3821), requesting that agencies review existing regulations to improve the efficacy of their protection, to balance costs and benefits, and to maximize their efficiency.

In proposing this revision, the Agency is mindful of the effects on small

business, family farms, and other affected parties. The Agency has attempted to keep the costs to the regulated community as low as practicable, so that they are reasonably balanced against the anticipated risk reduction benefits of the measures proposed below.

#### H. Summary of Proposed Changes

EPA proposes to revise the WPS by:

- Amending the existing pesticide safety training content, retraining interval (frequency), and qualifications of trainers,
- Ensuring workers receive safety information before entering any pesticide treated area by amending the existing "grace period" and expanding the training required during the "grace period,"
- Establishing a minimum age of 16 for handlers and for workers who enter an area under an REI,
- Establishing requirements for specific training and notification for workers who enter an area under an REI,
- Restricting persons' entry into areas adjacent to a treated area during an application,
- Enhancing the requirement for employers to post warning signs around treated areas,
- Modifying the content of the warning sign,
- Adding information employers must keep under the requirement to maintain application-specific information,
- Requiring recordkeeping for pesticide safety training and worker entry into areas under an REI,
- Ensuring the immediate family exemption includes an exemption from the proposed minimum age requirements for handlers and early-entry workers,
- Expanding the definition of "immediate family" to allow more family-owned operations to qualify for the exemptions to the WPS requirements,
- Revising definitions to improve clarity and to refine terms, and
- Restructuring the regulation to make it easier to read and understand.

### III. Statutory Authority and Framework

This unit discusses the legal framework within which EPA regulates the safety of those who work with and around pesticides in agriculture.

#### A. FIFRA

The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) of 1947 established a framework for the regulation of pesticide products. Major amendments in 1972 by the Federal

Environmental Pesticide Control Act (7 U.S.C. 136 *et. seq.*) broadened federal pesticide regulatory authority to make it “unlawful for any person to use any registered product in a manner inconsistent with its labeling” (7 U.S.C. 136i (a)(2)(G)). The 1972 amendments provided civil and criminal penalties for violations of the Act (7 U.S.C. 136l) and authorized the Administrator to provide regulations to carry out the Act (7 U.S.C. 136w (a)). The new and revised provisions directed EPA to protect humans and the environment from unreasonable adverse effects of pesticides.

The legislative history of the 1972 amendments to FIFRA reflects the clear intent of Congress that farmers and agricultural workers were among those intended to be afforded protection under FIFRA. In discussing the 1972 amendments, the Senate Committee on Agriculture noted its intent of FIFRA to protect farmworkers and others from contacting pesticides or their residues. (Ref. 4)

EPA has implemented many protections for workers through use instructions on pesticide labeling, which have been legally binding on pesticide users since the 1972 amendments. See FIFRA section 12(a)(2)(G), which makes it unlawful “to use any registered pesticide in a manner inconsistent with its labeling”. In order to expand these protective measures without making individual product labeling inordinately complex, the Agency decided to consolidate common requirements in a single, uniform standard that could be incorporated into agricultural pesticide labels by reference, the Worker Protection Standard (WPS). In 1992, the Agency issued the WPS, which, where mandated on a pesticide label, provides a uniform system of protections to workers and handlers on farms, forests, nurseries, and greenhouses from occupational exposure to the pesticide product. The WPS establishes uniform requirements for practices that minimize exposure, regardless of the risks of specific pesticides, and the individual pesticide product labeling provides the specific requirements appropriate to each pesticide product. The WPS sets basic requirements for notification of a treated area, limited entry into a treated area, supplies related to decontamination and maintenance of PPE, and access to information about pesticides used on the agricultural establishment. It also requires that workers and handlers receive basic safety training to inform them about ways to minimize their exposure and risk.

#### *B. EPA Regulation of Pesticides*

In order to protect human health and the environment from unreasonable adverse effects that might be caused by pesticides, the Agency has developed and implemented a rigorous process for registering and re-evaluating pesticides. The registration process begins when a manufacturer submits an application to register a pesticide. The application must contain required test data, including information on the pesticide’s chemistry, environmental fate, toxicity to humans and wildlife, and potential for human exposure. The Agency also requires a copy of the proposed labeling, including directions for use, and appropriate warnings.

Once an application for registration of a new pesticide product is received, EPA conducts an evaluation, which includes a detailed review of scientific data to determine the potential impact on human health and the environment. The Agency considers the risk assessments and results of any peer review and evaluates potential risk management measures that could mitigate risks above the Agency’s level of concern. Risk management measures could include, among other things, extending the restricted-entry interval (REI), the period during which people are prohibited from entering the treated area, to allow the pesticide residues to reach an acceptable level before worker reentry is permitted. They could also require certain engineering controls, such as use of closed mixing systems to reduce potential exposure to those who mix and load pesticides, or specific PPE, such as respirators, to protect users against risks associated with inhalation of the product.

In the decision-making process, EPA evaluates the application to determine whether the proposed use(s) meets the Agency’s standards for registration. FIFRA is a risk-benefit statute. In evaluating the impact of a pesticide on occupational health and safety, EPA weighs the risks associated with use of the pesticide (occupational, environmental) and the benefits associated with use of the pesticide (economic, public health, environmental). FIFRA does not require EPA to balance the risks and benefits for each audience. For example, a product may pose risks to workers, but risks may nevertheless be reasonable in comparison to the economic benefit of continued use of the product to society at large.

If the application does not contain enough evidence to prove that the pesticide meets all of these standards, EPA communicates to the applicant the

need for more or better refined data, labeling modifications, or additional use restrictions. Once the applicant has demonstrated that a proposed product meets the statutory standards, and, if the pesticide is intended to be used on food, a tolerance or exemption from the requirement of a tolerance under the Federal Food, Drug, and Cosmetic Act can be established, EPA will approve the registration, subject to any risk mitigation measures necessary to achieve that approval. EPA devotes significant resources to the regulation of pesticides to ensure that each pesticide product meets the FIFRA requirement that pesticides not cause unreasonable adverse effects to the public and the environment.

When EPA approves a pesticide, the label reflects the risk mitigation measures required by the Agency. Since users must comply with the directions for use and use restrictions on a product’s labeling, EPA uses the labeling to establish and convey mandatory requirements for how the pesticide must be used to protect people and the environment from pesticide exposure. As discussed in Unit III.A., above, the labeling for agricultural pesticides requires compliance with the WPS, in order that workers, handlers, and their employers have a single, uniform set of specific requirements for the protection of workers and handlers that complement the product-specific labeling requirements.

#### *C. EPA’s Pesticide Reregistration and Registration Review Programs*

FIFRA requires EPA to review periodically the registration of pesticides currently registered in the U.S. The 1988 FIFRA amendments required EPA to establish a pesticide reregistration program. Reregistration was a one-time comprehensive review of the human health and environmental effects of pesticides first registered before November 1, 1984 to make decisions about these pesticides’ future use. The Food Quality Protection Act of 1996 required that EPA establish, through rule making, an ongoing “registration review” process of all pesticides at least every 15 years. The final rule establishing the registration review program was signed and published in August 2006. The purpose of both re-evaluation programs is to review all pesticides registered in the U.S. to ensure that they continue to meet current safety standards based on up-to-date scientific approaches and data.

Pesticides reviewed under the reregistration program that met current scientific and safety standards were

declared “eligible” for reregistration. The results of EPA’s reviews are summarized in Reregistration Eligibility Decision (RED) documents. The last RED was completed in 2008. Often before a pesticide could be determined “eligible,” certain risk reduction measures had to be put in place. For a number of pesticides, measures intended to reduce exposure to handlers and workers were needed and are reflected on pesticide labeling. To address occupational risk concerns, REDs include mitigation measures such as voluntary cancellation; limiting the amount, frequency or timing of applications; other application restrictions; classification of a product or specific use as a “Restricted Use Pesticide” (RUP); PPE; specific REIs; user safety requirements; and improved use directions.

Rigorous education and enforcement are needed to ensure that these mitigation measures are appropriately implemented in the field. The framework provided by the WPS is critical for ensuring that the improvements brought about by reregistration, including worker risk mitigation measures, are realized. The rule changes being proposed in this notice are designed to enhance the effectiveness of the existing structure.

In summary, EPA’s pesticide reregistration and registration reviews assess the specific risks associated with particular chemicals and ensure that the public and environment do not suffer unreasonable adverse effects from the risks. EPA implements the risk reduction and mitigation measures that result from the pesticide reregistration and registration review programs through individual pesticide product labeling.

#### *D. Existing Worker Protection Standard*

The WPS currently covers pesticide use at establishments engaged in the production of agricultural commodities: Farms, forests, nurseries, and greenhouses. The WPS does not cover persons working directly with livestock. WPS regulations are directed toward the working conditions of two types of employees: Workers and handlers.

- Workers perform tasks related to the cultivation and harvesting of agricultural products on agricultural establishments. Typical tasks include thinning, pruning, and harvesting commodities.

- Handlers mix, load, and apply pesticides, and do other activities linked to pesticide application on agricultural establishments.

The WPS defines general protections that cover all workers or handlers

employed on an establishment that uses a pesticide that references the WPS on the label and complements the specific risk mitigation measures implemented through individual pesticide product labeling. The existing WPS requires agricultural employers to provide certain protections to their employees. Agricultural employers are required to notify workers of areas treated with pesticides so workers may avoid inadvertent exposures. Employers also must provide to all workers that may enter a treated area pesticide safety training that covers common routes of exposure, how to protect oneself from pesticide exposure, information on decontamination, and what to do in an emergency. Handlers receive more detailed training on using PPE, conducting pesticide application, and following safety principles. A central location on the establishment must have a pesticide safety poster and information on recent pesticide applications. Handlers and workers must be informed of specific requirements on the pesticide label related to the WPS.

The labeling of agricultural pesticides generally specifies REIs (a time during which entry into a treated area is strictly limited) for areas treated with pesticides. The existing WPS regulation provides detailed requirements regarding identifying areas under an REI and notifying workers about them, excluding workers and others from the treated areas, and the limited circumstances under which early entry may occur. The WPS provides detailed information concerning the types of PPE necessary for handlers and early-entry workers, if not specified on the label, and instruction that employers must provide to workers entering under an REI exception. The existing WPS also prohibits applicators from applying a pesticide in a way that will expose workers or other persons and excludes workers from areas while pesticides are being applied. These general requirements serve as a counterpart to the product-specific risk reduction measures implemented through the pesticide label.

The WPS also mitigates the risks associated with pesticide exposure by requiring agricultural employers to provide workers and handlers with water, soap, and towels for routine washing after working in or around areas where pesticides have been applied. There are also provisions for decontamination in the event of an emergency. The employer must provide transportation to a medical care facility for a worker or handler who may have been poisoned or injured, and provide

information to the worker, handler, or medical personnel about the pesticide to which the person may have exposed.

A detailed history of the development of the 1992 WPS and the process leading to the proposed rule appears in Unit V.

## **IV. Overview of EPA’s Protection of Pesticide Workers**

### *A. Demographics of Agricultural Workers and Handlers*

The task of protecting workers and handlers from occupational exposure to pesticides presents a challenge, given the complexity of the science issues involving pesticide use, variability of pesticide use patterns, and the diversity of the labor population being served and the tasks they perform.

According to information published by the Department of Labor’s (DOL) NAWS in 2001–2002, 75% of agricultural workers in the United States were born in Mexico and 2% in Central America (Ref. 3 p. 3). A majority (81%) of this group speaks Spanish as a native language, but a growing percentage speaks languages such as Creole, Mixteco, and indigenous languages (Ref. 3 p. 17). Approximately 44% could not speak English at all, and 53% could not read any English (Ref. 3 p. 21). Many have received minimal formal education; the foreign born workers, on average, completed no more than a sixth grade education (Ref. 3 p. 18).

Approximately 43% of the survey respondents were classified as migrant, having traveled at least 75 miles in the previous year to find a job in agriculture (Ref. 3 p. 7). Over 20% of respondents lived in housing provided by their employer and 58% rented housing from someone other than their employer (Ref. 3 p. 43). In general, agricultural workers surveyed by NAWS do not use health care facilities. Estimates of agricultural workers lacking health insurance range from 77% to 85% and estimates from the late 1990s indicate only 20% of those surveyed had visited a health care facility in the preceding 2 years (Ref. 5 pp. 12–13). U.S. Department of Agriculture (USDA) research, based on NAWS data, also reports that workers have difficulty entering the health care system to receive treatment. Cost was a significant barrier for two-thirds of farmworkers, while about a third listed language barriers as an impediment to receiving care. The problem is more severe among undocumented workers because they fear seeking treatment will lead to deportation or other adverse legal action (Ref. 6).

USDA issued a report indicating that the factors mentioned above contribute

to the disadvantaged status of hired workers in agriculture (Ref. 6). Unemployment rates, counting both crop and livestock workers (livestock workers are outside the scope of the WPS), are twice that of all salary and wage workers. The NAWS found crop workers' average annual income was between \$10,000 and \$12,499, with total family income averaging between \$15,000 and \$17,499 (Ref. 3 p. 47).

#### *B. Incident Data Sources and General Information*

Incident monitoring programs have provided the Agency with a better understanding of common types of pesticide exposures and their outcomes. In 2007, EPA released a report detailing the coverage of all pesticide exposure incident reporting databases considered by the Agency (Ref. 7). EPA consults two major databases for information on occupational pesticide exposure incidents.

The first database, the Sentinel Event Notification System for Occupational Risk (SENSOR), is maintained by the Centers for Disease Control and Prevention (CDC)/National Institute for Occupational Safety and Health (NIOSH). SENSOR covers all occupational injuries and has a specific component for pesticides (SENSOR-Pesticides). EPA uses SENSOR-Pesticides to monitor trends in occupational health related to acute exposures to pesticides, to identify emerging pesticide problems, and to build and maintain state surveillance capacity. SENSOR-Pesticides is a state-based surveillance system with eleven state participants. The program collects most poisoning incident cases from:

- Department of Labor workers' compensation claims when reported by physicians,
- State Departments of Agriculture, and
- Poison control centers.

A state SENSOR-Pesticides contact specialist follows up with workers and obtains medical records to verify symptoms, circumstances surrounding the exposure, severity, and outcome. Using a standardized protocol and case definitions derived from poison center reporting, SENSOR-Pesticides coordinators enter the incident interview description provided by the worker, medical report, and physician into the SENSOR data system. EPA believes that SENSOR-Pesticides provides the most comprehensive information on occupational pesticide exposure, but coverage is not nationwide and a majority of the data comes from California and Washington State.

The American Association of Poison Control Centers maintains the National Poison Data System (NPDS), formerly the Toxic Effects Surveillance System (TESS). NPDS is a computerized information system with geographically specific and near real-time reporting. While the main mission of Poison Control Centers (PCC) is helping callers respond to emergencies, not collecting specific information about incidents, NPDS data help identify emerging problems in chemical product safety. Hotlines at 61 PCCs nationwide are open 24 hours every day of the year. There are many bilingual PCCs in predominantly Spanish speaking areas. Hotlines are staffed by toxicology specialists to provide poisoning information and clinical care recommendations to callers with a focus on triage to give patients appropriate care. Using computer assisted data entry, standardized protocols, and strict data entry criteria, local callers report incidents that are retained locally and updated in summary form to the national database. Since 2000, nearly all calls in the system are submitted in a computer-assisted interview format by the 61 certified PCCs, adhering to clinical criteria designed to provide a consistent approach to evaluating and managing pesticide and drug related adverse incidents. Information calls are tallied separately and not counted as incidents. The NPDS system covers nearly the entire United States and its territories, but the system is clinically oriented and not designed to collect detailed occupational incident data.

Three studies showing undercounting of poison control data indicate the magnitude of the problem. The studies each focus on a specific region and compare cases reported to poison control with those poisonings for which there are hospital records. In all three cases, the studies indicate a substantial underreporting of poisoning incidents to poison control, especially related to pesticides (Ref. 8) (Ref. 9) (Ref. 10). Underreporting of pesticide incidents is a challenge for all available data sources for a number of reasons, as discussed below.

Symptoms of acute pesticide poisoning are often vague and mimic other causes, leading to incorrect diagnoses, and chronic effects are difficult to identify and track. The demographics of the worker population also contribute to underreporting of incidents. Many incident reports lack useful information, such as the exact product that was the source of the exposure, the amount of pesticide involved, or the circumstances of the exposure. There may not be enough

information to determine if the adverse effects noted were in fact the result of pesticide exposure and not another contributing factor. A more complete discussion of the underreporting and its effect on pesticide incident reporting is located in the Economic Analysis for this proposal (Ref. 1).

The data available do provide a snapshot of the illnesses faced by workers and handlers in the field and the likely avenues of exposure. Review of these data sources shows that workers and handlers continue to face avoidable occupational pesticide exposure. The most common types of incidents are related to pesticide drift and unpermitted entry into an area under an REI (Ref. 11). Often handler exposure occurs when handlers are using PPE and do not wear the PPE properly or the PPE malfunctions. Generally, reports on the data note that many of the incidents could be prevented with strengthened training for handlers and workers and improved notification when an application is occurring or a treated area is under an REI (Ref. 11).

#### *C. Other Worker Protection Programs*

EPA's Pesticide Worker Safety Program is comprised of three major components: protections for agricultural labor through the WPS (40 CFR part 170), described in Unit III.D.; certification of RUP applicators; and the National Strategies for Health Care Providers: Pesticides Initiative (Health Care Providers Initiative). EPA uses its field programs and cooperative agreements to distribute information on the risks associated with pesticides, developing technology, and self-protection to avoid pesticide exposure. All three field programs solicit feedback from the regulated and affected communities to EPA about the effect of the pesticide labeling and mitigation measures. To implement these programs, the Office of Pesticide Programs works with an extensive network of partners, including state and tribal pesticide regulatory agencies; USDA's National Institute of Food and Agriculture (NIFA) (formerly the Cooperative State Research, Education, and Extension Service (CSREES)); university cooperative extension services; farmworker groups; and the regulated community. EPA funds collaborative field projects and activities through grants with governmental and non-governmental organizations with the goal of improving the health of workers, handlers, applicators, the public, and the environment.

Under the Certification of Pesticide Applicators rule, 40 CFR 171, EPA establishes standards for the

competency of applicators who use RUPs. The rule requires applicators to demonstrate competency to become certified to apply RUPs. Part 171 also has a section outlining the requirements for states, federal agencies, and tribes to administer a program to certify applicators in their jurisdictions. All states and several tribes, territories, and federal agencies administer their own applicator certification programs. EPA provides funding through an interagency agreement with USDA to support the training of applicators using RUPs through the cooperative extension services in each state.

The third prong of the Pesticide Worker Safety Program is the Health Care Providers Initiative, aimed at improving the training of health care providers in the recognition, diagnosis, and treatment of occupational pesticide poisonings. EPA collaborated in the development of a manual for health care providers called "Recognition and Management of Pesticide Poisonings" (Ref. 12). This resource outlines the health effects associated with different classes of pesticides and suggests treatments based on the suspected exposure.

Under this initiative, EPA also works closely with the Migrant Clinicians Network, an organization of health care providers serving the migrant community, on a project to improve pesticide education and awareness and to train health care providers to recognize and treat pesticide-related conditions. This project also includes the development of relevant resources and tools that health care providers can use to deal effectively with pesticide-related health conditions, and the distribution of these products through training sessions, the Internet, and continuing education opportunities.

#### D. EPA-OSHA Relationship

The Occupational Safety and Health Act, 29 U.S.C. 651 et. seq., grants the Occupational Safety and Health Administration (OSHA) authority to promulgate regulations to mitigate significant risks that may occur in the occupational setting. Under its statutory authority, OSHA promulgated a Hazard Communication Standard (HCS) (29 CFR 1910.1200) to protect employees from general chemical hazards in the workplace. OSHA also establishes industry, chemical, and process-specific standards to address workplace hazards that warrant additional regulatory measures to ensure employees' occupational safety and health.

Except as limited by section 4(b)(1) of the Occupational Safety and Health Act, which prohibits OSHA from regulating

working conditions or hazards where other federal agencies exercise statutory authority to prescribe or to enforce standards for occupational safety and health, OSHA's HCS covers all industries in which an employee may be exposed to a chemical hazard in the workplace. OSHA based the HCS on employees' right to know about chemical hazards in the workplace in order to make informed decisions about their work practices, to better protect themselves, and to reduce their chances of illness or injury from a workplace accident. OSHA determined that employees are at a significant risk of experiencing adverse health effects in the absence of knowledge of workplace hazards. Among other things, the HCS requires employers to provide the following protections in the workplace:

- Develop, implement, and maintain a written hazard communication program;
- Maintain a written list of all hazardous chemical products and substances known to be present;
- Ensure labeling of all chemical containers;
- Provide employees with effective information and training on chemical hazards; and
- Maintain a copy of the safety data sheet (SDS, formerly known as Material Safety Data sheet, or MSDS) containing the chemical and physical hazard information for each hazardous chemical, and ensure that SDSs are readily accessible to employees when they are at the workplace.

To address the statutory limitation in section 4(b)(1) and to ensure workplace protections of agricultural workers and handlers, OSHA and EPA formed a working group to discuss the jurisdictional overlap between OSHA's authority over workplace safety and health and EPA's mandate to protect those who work with and around pesticides from the risks associated with exposure. OSHA and EPA sought to coordinate regulations related to workplace safety and health and to ensure that they were within the scope of each agency's statutes. EPA and OSHA agreed that OSHA's Field Sanitation Standard addresses general sanitary standards, while EPA's WPS decontamination requirements are specific to pesticide hazards. EPA stated that the intended reach of the WPS was limited to occupational safety for pesticides and that OSHA was not preempted from regulating any non-pesticide chemical or other workplace hazards in agriculture. OSHA established a policy not to cite employers covered under the WPS for pesticide-related HCS standards. The

policy also defers to EPA's regulatory authorities for pesticide labeling and use, certification of pesticide applicators, and protection of handlers and workers on establishments covered by the WPS (Ref. 13).

## V. Sources of Information for Improvement of Worker Protection

### A. History of the WPS Regulation

In 1974, EPA promulgated the first version of the WPS (39 FR 16888; May 10, 1974). The regulation provided health protections for workers exposed to pesticides from hand labor activities during and after applications. The 1974 regulations contained four basic elements:

- A prohibition against spraying workers,
- Specific reentry intervals for 12 pesticides and a general reentry interval for all other agricultural pesticides, prohibiting entry until sprays had dried or dusts had settled;
- A requirement for protective clothing for any worker who had to reenter treated areas before the specific reentry interval had expired; and
- A requirement for "appropriate and timely" warnings.

A 1983 review of the WPS concluded that the 1974 regulation did not adequately protect workers (49 FR 32605; August 15, 1984). New information was becoming available about the use of pesticides and the impact on occupational safety and health. OSHA had promulgated occupational health standards for workers in non-agricultural industries that provided greater protections than those contained in the WPS. The OSHA Standards included requirements for notifying workers of workplace chemicals to which they are exposed, personal protective equipment to mitigate risks of exposure, hygiene facilities, medical surveillance, worker training programs, and recordkeeping. EPA considered the addition of similar protections to the WPS.

In addition to the shortcomings of the protections in the 1974 rule, there were legal issues with respect to the enforcement of the protections. EPA realized that the four existing requirements of the WPS were not typically included on the pesticide labeling. Without a reference to the regulation on the labeling, the requirements were not legally enforceable. Moreover, the regulation itself did not clearly assign responsibility for compliance with the requirements; for example, workers were prohibited from entering treated areas, but nobody was charged with

communicating the prohibition to the workers or ensuring that they did not enter.

The Agency also wanted to expand the scope of the regulation to cover sites that had been exempted but were similar to farms, i.e., forests, nurseries, and greenhouses, and to add another group of people facing occupational pesticide exposure in agriculture—handlers who mix, load, or apply pesticides. Handlers' occupational exposure profile is distinct from that of workers protected by the initial WPS. When mixing, handlers may face exposure while pouring the concentrated pesticide or stirring the diluted mix. Loaders and applicators handle many gallons of the diluted pesticide and may experience exposure while transferring the pesticide mixture into the application equipment or making the application. The Agency believed that expanding the WPS to include the additional sites and adding specific protections for handlers was necessary.

In 1984, the Agency published an Advance Notice of Proposed Rulemaking (49 FR 32605; August 15, 1984), announcing its intention to revise the 1974 rule for the reasons outlined above and soliciting public comment. EPA also initiated a process of regulatory negotiation with parties interested in or affected by the WPS. Stakeholders with competing interests worked to resolve issues through collaboration and compromise. EPA convened a Federal Advisory Committee Act (FACA) workgroup, "The Advisory Committee on WPS for Agricultural Pesticides," that had members representing a spectrum of stakeholder perspectives from 25 entities. Certain labor representatives discontinued their participation early in the process. As a result, the full committee did not participate in decision making; therefore, a consensus on proposed changes to the regulation could not be reached.

The public comments helped the Agency refine the areas for proposed change. In 1988, EPA published a Notice of Proposed Rulemaking (NPRM) (53 FR 25970; July 8, 1988) that proposed significant changes to the then existing WPS, including the following:

- Expansion of the scope of establishments covered;
- Revision of reentry intervals to correlate with risks posed by each pesticide;
- Revision to the PPE requirements;
- Improvement to worker notification provisions; and
- Strengthening compliance with the regulation by designating specific

responsibilities of agricultural employers.

Following the publication of the NPRM, EPA held public meetings across the country, primarily in major agricultural areas, to explain the proposed rule and to respond to questions. EPA received 380 written comments from the public on the proposed rule.

After review and careful analysis of the public comments, the Agency promulgated the final rule, revising the WPS and adding Subpart K (Labeling Requirements for Pesticides and Devices) to 40 CFR part 156 in August 1992 (57 FR 38101; August 21, 1992). Shortly after publication of the final rule, agricultural groups raised concerns related to the availability of materials necessary to implement the rule and insufficient numbers of qualified trainers. Based on these concerns, Congress enacted legislation delaying implementation of the final rule. In response to the concerns raised, EPA worked with stakeholders to develop training materials that were tested with focus groups to ensure that they were appropriate for the language and literacy level of the target training audiences. In response to identified training needs, EPA has developed training materials in many languages, including Spanish, Chinese (Mandarin), Tagalog, Haitian Creole, Hmong, Ilocano, Khmer, Laotian, Polish, Portuguese, and Vietnamese. EPA's revisions to the WPS were fully implemented in 1995. The expanded regulation provided protections for agricultural workers from pesticide exposure on farms and in forests, nurseries, and greenhouses; included agricultural handlers; and held agricultural employers and pesticide applicators responsible for complying with specific portions of the regulation.

Since promulgating the WPS in 1992, EPA has made several minor amendments. In 1995, EPA published a series of **Federal Register** notices: (1) Reducing the grace period for agricultural employers to provide pesticide safety training to workers from 15 days to 5 days (60 FR 21943; May 3, 1995), (2) establishing a 5-year retraining interval for workers and handlers (60 FR 21943; May 3, 1995), (3) exempting certain persons performing crop advisor tasks from WPS provisions except for pesticide safety training, (60 FR 21948; May 1995), and (4) creating exceptions to the WPS to allow workers to enter pesticide-treated areas during an REI under specified conditions to perform irrigation tasks (60 FR 21960; May 3, 1995) and tasks that involve limited contact with pesticide-treated surfaces (60 FR 21955; May 3, 1995).

In 1996, EPA amended the regulation to: (1) Reduce the number of days employers must provide to workers decontamination supplies (soap, water, paper towels) after application of pesticides that are low risk and have REIs of four hours or less (61 FR 33207; June 26, 1996), (2) allow substitution of the language commonly spoken and read by workers for the Spanish portion of the warning sign (61 FR 33202; June 26, 1996), and (3) allow the use of smaller signs in nurseries and greenhouses (61 FR 33202; June 26, 1996).

Lastly, in 2004, EPA published a notice in the **Federal Register** revising the WPS glove requirements. This notice allowed all early-entry workers and handlers to wear disposable glove liners under chemical-resistant gloves and eliminated the requirement for aerial applicators to wear chemical-resistant gloves when entering and exiting aircraft that have been used to apply pesticides unless required by the labeling (69 FR 53341; September 1, 2004).

During the course of the states' implementation of the 1992 WPS regulation, regulatory partners, the regulated community, and other stakeholders raised numerous policy and enforcement questions. EPA addressed most of these questions through reference to the official rule text or the Agency's responses to public comments on the proposed rule. Some questions, however, raised interpretive issues that required the Agency to develop and issue interim guidance. EPA coordinated the development of guidance through an interpretive guidance workgroup (IGW) using a collaborative process that included all relevant and affected EPA offices, and state regulatory partners from the Florida Department of Agriculture and Consumer Services and the New Mexico Department of Agriculture. The State FIFRA Issues Research and Evaluation Group nominated the state participants on the IGW.

The IGW addressed the questions raised by stakeholders. The final IGW guidance clarified definitions for terms used in the rule, the scope of the WPS exceptions, and the intended scope and/or limits of provisions. The final IGW guidance has been compiled into a document available to the public (Ref. 14).

Although the IGW document provided answers to many of the issues raised by stakeholders to EPA, it is only guidance. Therefore, the IGW document is not legally binding on EPA, workers, handlers, agricultural establishments, and others. EPA proposes to codify

certain of the elements in the IGW guidance document, as discussed in Units VII through XVIII.

At the same time EPA published the 1992 WPS, the Agency also published an NPRM on a Hazard Communication/Right-to-Know program for agricultural workers (57 FR 38167; August 21, 1992). This NPRM responded to comments received in response to the 1992 proposed rule noting that protections for agricultural workers could not be considered complete until workers were provided with specific hazard information. Many comments called for EPA to adopt requirements parallel to those imposed by OSHA rules. In the 1992 proposed rule, EPA proposed options for providing written information about the specific hazards posed by pesticides in the workplace, for alleviating confusion about possible conflict and duplication between EPA and OSHA regulation of occupational safety and health in pesticides, and for supporting states in developing their own hazard communication programs. EPA never promulgated a rule finalizing a Hazard Communication/Right-to-Know program for agricultural workers because Agency resources were diverted to develop training and compliance assistance materials to implement the WPS as mandated by Congress. The Agency also wanted to solicit more stakeholder feedback about states' experiences implementing different approaches to hazard communication before moving forward with a final regulation.

#### *B. Stakeholder Engagement*

Over the last 20 years, the Agency has repeatedly engaged the public and particularly affected stakeholders in the assessment of the 1992 WPS and its implementation. This stakeholder engagement process has provided EPA with a deep appreciation of the complex challenges facing federal, state and tribal authorities, agricultural employers, and workers and handlers in the ongoing effort to ensure pesticide use is safe.

Immediately following full implementation of the 1992 WPS, EPA began the Pesticide Dialogue Process. From 1996 to 2000, EPA held public meetings across the country for open dialogue on rule implementation, challenges in compliance, and perceived effectiveness. The meetings were open to the general public.

The Agency initiated the National Assessment of EPA's Pesticide Worker Safety Program (National Assessment) in 2000. Through this process, EPA convened stakeholder meetings in Texas, California, and Florida.

Participants included representatives from farmworker organizations, cooperative extension services, commodity organizations, state regulatory agencies, federal agencies, pesticide manufacturers and distributors, and individual workers, handlers, and growers. Stakeholders provided information about the strengths and weaknesses of the WPS's protections and implementation. EPA established three workgroups: general training (Ref. 15), train-the-trainer (Ref. 16), and hazard communication. Each of the workgroups met apart from the public meetings to assess specific aspects of the WPS and to recommend improvements. EPA held a final meeting in Washington, DC at which the workgroups presented their findings to EPA.

The assessment concluded in 2005 with the presentation of the "Report on the National Assessment of EPA's Pesticide Worker Safety Program" (Ref. 17). The opinions and suggestions made during the course of the assessment centered on a few broad improvement areas: the expansion and upgrade of applicator competency and worker safety and promotion of safer work practices, improved training of and communication with all pesticide workers, increased enforcement efforts and improved training of inspectors, training of health care providers and monitoring of pesticide incidents, and finally, program operation, efficiency, and funding (Ref. 17 p. 1). While EPA addressed some of the recommendations through grants, program guidance, and other outreach, others required regulatory change (Ref. 17 p. 26).

During the initial stages of the framing of this proposal, EPA's Federal Advisory Committee, the Pesticide Program Dialogue Committee (PPDC), formed a workgroup in 2006 to provide feedback to EPA on different areas for change. The workgroup had over 70 members representing a wide range of stakeholders. EPA shared with the workgroup suggestions for regulatory change identified through the National Assessment and solicited comments. The workgroup convened for a series of meetings and conference calls to get more information on specific parts of the regulation and provided its thoughts to the Agency. The workgroup never reached consensus; it focused on evaluating possible changes under consideration by EPA providing feedback from each member's or organization's perspective. Comments from the PPDC workgroup members have been compiled into a single document and posted in the docket.

EPA convened a Small Business Advocacy Review (SBAR) Panel on potential revisions to the WPS in 2008. The SBAR Panel was convened under section 609(b) of the Regulatory Flexibility Act as amended by the Small Business Regulatory Enforcement and Fairness Act (SBREFA). As part of the SBAR Panel's activities, EPA consulted with a group of Small Entity Representatives (SERs) from small businesses and organizations that could be affected by the potential revisions. EPA provided the SERs with information on the WPS and potential revisions and requested feedback on the proposals under consideration. EPA asked the SERs to offer alternate solutions to the potential proposals presented to provide flexibility or to decrease economic impact for small entities while still accomplishing the goal of improved safety.

The SERs provided feedback on the following areas: Requiring all treated areas to be posted, requiring pesticide safety training more frequently than every 5 years, eliminating the grace period between hiring a worker and providing pesticide safety training, and requiring showers on establishments that employ handlers. EPA compiled the responses from the SERs in an Appendix to the final Panel Report and posted the full report and appendix in the docket (Ref. 18). EPA considered the input from the SERs as part of the evaluation of available options for this rulemaking, and where appropriate, feedback from the SERs is discussed in various descriptions of proposed changes in this preamble.

In addition to formal stakeholder outreach, EPA met with numerous individual stakeholders when requested to discuss concerns and suggestions in detail. Stakeholders included farmworker organizations (Farmworker Justice, Migrant Clinicians Network, and El Comité de Apoyo a los Trabajadores Agrícolas [Farmworker Support Committee]); the National Association of State Departments of Agriculture (NASDA); the Association of American Pesticide Control Officials (AAPCO); Crop Life America (CLA); and others.

#### *C. GAO Audits*

In 1992, prior to the promulgation of the amended WPS, the General Accounting Office (now the Government Accountability Office; GAO) published "Hired Farmworkers: Health and Well-Being at Risk" (Ref. 19). The report discussed a number of services, such as social security, housing, field sanitation, job training and employment programs, children's education, and other issues that the government would need to

address to provide better conditions for farmworkers.

The 1992 report noted that at that time, EPA lacked an understanding of the health risks for many older pesticides, placing workers at risk from potentially unsafe exposure. The report also noted that the 1974 rule requirement to limit worker entry into treated areas was difficult for workers to follow. It prohibited reentry until “sprays have dried or dusts have settled,” language that involved subjective judgments. The 1992 amendments to the WPS partially addressed these issues by requiring interim protective intervals for worker entry into treated areas based on the acute toxicity of the product. Since that time, EPA’s reregistration program, through which EPA reviewed and assessed older pesticides to ensure they continue to meet the FIFRA regulatory standard, has been completed. See Unit III.C. Through that process, chemical-specific protective reentry intervals have replaced the interim intervals.

In 2000, GAO issued another report, “Pesticides: Improvements Needed to Ensure the Safety of Farmworkers and Their Children,” (Ref. 20). In this report, GAO focused more specifically on the potential risks to children of entering a pesticide-treated area. It noted that children under 12 years old may have a higher risk of adverse effects related to pesticide exposure and should be protected adequately. It also cited EPA data on WPS enforcement, noting the lack of consistency and involvement by EPA in monitoring the inspections and the need to have target numbers of inspections. The report recommended that EPA “mitigate the potential adverse effects of pesticide exposure on children below the age of 12 who work in agriculture or are otherwise present in pesticide-treated fields” (Ref. 20 p. 24). It also suggested that EPA improve oversight of state-level WPS enforcement and set standard guidance for inspections.

#### D. Environmental Justice

Executive Order 12898 (59 FR 7629; February 16, 1994) established federal executive policy on environmental justice. It directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations in the United States. The Executive Order establishes four areas for action:

- Promote enforcement of all health and environmental statutes in areas with minority populations and low-income populations;
- Ensure greater public participation;
- Improve research and data collection relating to the health and environment of minority populations and low-income populations; and
- Identify differential patterns of consumption of natural resources among minority populations and low-income populations. In addition, the environmental justice strategy shall include, where appropriate, a timetable for undertaking identified revisions and consideration of economic and social implications of the revisions.

EPA’s goal is to promote environmental justice for all communities and persons across the United States, regardless of race, color, national origin, or income. Ensuring environmental justice means not only protecting health and the environment for everyone, but also ensuring that all people are treated fairly and are given the opportunity to participate fully in the development, implementation, and enforcement of environmental laws, regulations, and policies. Consistent with the Executive Order, the Agency’s environmental justice policies promote environmental protection by focusing EPA’s attention and efforts on addressing environmental risks among minority populations.

As discussed above in Unit IV.A., most workers and handlers intended to be protected by the WPS face significant disadvantages. Most agricultural workers and handlers belong to minority groups. Agricultural workers tend to have low literacy in any language and very limited skills in English. Very often workers do not have permanent housing and generally reside close to agricultural areas where pesticides are applied. Many workers and handlers are not residents or legal aliens in the United States. The low literacy rates, range of non-English languages spoken by workers and handlers, economic situation, geographic isolation, difficulty accessing health care, and immigration status of workers and handlers pose challenges for communicating risk management information and ensuring that these groups are adequately protected.

Occupational tasks performed by workers and handlers create a significant risk of pesticide exposure, which is increased by the communication barriers discussed above. In addition to potential exposure through work duties, studies show that workers and handlers face a greater risk

of exposure to pesticide drift from neighboring areas than does the general population (Ref. 21). Pesticide exposure can also come through residues transferred by workers and handlers on their clothing and body from the treated areas to their cars and homes, and from the proximity of the housing to agricultural areas treated with pesticides (Ref. 21) (Ref. 22) (Ref. 23) (Ref. 24). Finally, pesticide exposure may occur from the consumption of treated foods in the treated area or washing hands in pesticide contaminated water (Ref. 25) (Ref. 26) (Ref. 27 p. 25).

Throughout the development of this proposed rule, the Agency has continued to use research on the demographic characteristics, work habits, and culture of the worker and handler populations to revise the WPS to ensure it provides effective protection. Information for the assessment and development of the rule was gathered through field research and interaction with workers, handlers, worker and handler representatives, and stakeholders. EPA extensively engaged farmworker representatives, and when possible, worked directly with workers and handlers, to solicit their feedback on the current regulation and ideas for improvement.

With this stakeholder input, the Agency identified areas where the existing WPS does not provide an appropriate level of protection and evaluated the potential impact of various options for strengthening the WPS for the worker and handler populations. That analysis identified areas for improvement to the rule, such as expanding training to provide information on how to minimize worker and handler exposure and that of their families from pesticide residues carried from the treated area to the home. The Agency’s efforts to address environmental justice through this rulemaking were reviewed repeatedly during the development of the rule and its supporting documents. EPA believes that the proposed changes would improve the health of workers and handlers by, for example, increasing the frequency of training, enhancing training content to include ways to minimize pesticide exposure to children and in the home, adding posting of treated areas near worker and handler housing to prevent accidental entry, and establishing a minimum age for pesticide handlers and early-entry workers.

#### E. Children’s Protection

An Executive Order issued in 1997 (62 FR 19885; April 23, 1997) and modified in 2003 (68 FR 19931; April

23, 2003) requires federal agencies to identify and assess environmental health risks that may disproportionately affect children. In response to this mandate, EPA established the Children's Health Protection Advisory Committee (CHPAC) to advise and make recommendations to EPA on issues related to children's environmental health. The CHPAC recommended that EPA "re-evaluate the worker protection standard in order to determine whether it adequately protects children's health" (Ref. 28). In a **Federal Register** Notice issued on February 3, 1999, EPA committed to conducting an assessment of the implementation and enforcement of the WPS (64 FR 5277; February 3, 1999).

Children face risks from exposure to agricultural pesticides mainly through work in pesticide-treated areas. A 2003 study by Calvert, et al. identified 531 children under 18 years old with acute occupational pesticide-related illnesses over a ten-year period (Ref. 29). The same study raised concerns for chronic impacts: "because [the] acute illnesses affect young people at a time before they have reached full developmental maturation, there is also concern about unique and persistent chronic effects" (Ref. 29).

Although no conclusive data exist, studies have been conducted to evaluate whether children of agricultural workers and handlers may face elevated potential for exposure from pesticide residues brought to the home by their parents (Ref. 30) (Ref. 31). Studies have also been conducted to evaluate whether this exposure scenario may have contributed to negative health or developmental effects (Ref. 32). Higher concentrations of pesticide residues combined with the susceptibility of children to the effects of pesticide exposure may increase the likelihood that children will be adversely impacted. EPA recognizes the need for more conclusive data on exposure to children from pesticide residues brought into the home by agricultural workers. However, given EPA's commitment to protecting children and to the principles of environmental justice, EPA believes the cost of adding a few minutes to pesticide safety training is reasonable when compared to the benefit of reducing the potential risk.

The FLSA's child labor provisions, which are administered by the Department of Labor, permit children to work at younger ages in agricultural employment than in non-agricultural employment. Persons 12 and 13 years old may work in agriculture outside of school hours in nonhazardous jobs if

they are either working on the same farm as a parent or person standing in the place of a parent, or working with parental permission. 29 U.S.C. 213(c)(1)(B). Children under 16 years old are prohibited from doing hazardous tasks, including handling or applying pesticides that are classified as toxicity category I or II but can apply pesticides that are classified with a lower acute toxicity. (29 CFR 570.71(a)(9))

In summary, children working in agriculture and children of agricultural workers and handlers may be at a higher risk of pesticide exposure and illness; EPA believes these potential risks warrant careful consideration in light of the provisions of the Executive Order on children's health (EO 13296). EPA believes that the proposed changes could protect children from many of the risks they may face.

#### F. Regulatory Review

In 2005, EPA reviewed the WPS pursuant to section 610 of the Regulatory Flexibility Act (5 U.S.C. 610). The purpose of the review was to determine whether the rule should be continued without change, amended, or rescinded to minimize economic impacts on small entities while still complying with the provisions of FIFRA. EPA solicited comment on the continued need for the WPS; the complexity of the WPS; the extent to which it overlaps, duplicates, or conflicts with other federal, state, or local government rules; and the degree to which technology, economic conditions or other relevant factors have changed since the WPS was promulgated. See EPA Docket ID number OPP-2003-0115 at [www.regulations.gov](http://www.regulations.gov). The Agency received no comment on the action and concluded that the rule needs no revisions to minimize impacts on small entities while still complying with FIFRA.

While EPA found that no changes were necessary to minimize the impacts on small entities, EPA believes that the WPS should be updated for the reasons discussed in the previous sections. Through the assessment process, EPA reviewed the 1992 WPS to determine whether the requirements were effective, sufficiently protective, and unduly burdensome on employers. As discussed in Unit V.B., EPA engaged in a substantial stakeholder engagement process, apart from the 2005 review mentioned in the previous paragraph, to review the effectiveness of the current regulatory requirements, to identify gaps in protection, and to determine flexible approaches to compliance for the regulated community. EPA engaged

with small business representatives to explore flexible options for compliance. EPA believes the proposed changes reflect the current understanding of the risks faced by workers and handlers, thereby substantially improving the protections afforded to workers and handlers under the WPS and decreasing the overall burden associated with compliance for employers.

#### VI. Overview of Proposed Revisions to Part 170

Earlier Units of this preamble describe the various ways that workers, handlers, and their families can be exposed to pesticides. The stakeholder engagement described in Unit V.B. resulted in many recommendations for EPA to revise the regulation. Through the SBAR panel, SERs raised the need for EPA to be mindful of the burden the WPS imposes on small business and to reduce it wherever possible (Ref. 18).

As discussed earlier in this document, EPA has imposed requirements on the use of pesticides with the intent of averting unreasonable adverse effects to human health and the environment. These requirements include the WPS and pesticide-specific use restrictions found on product labeling. In spite of these protections, worker and handler illnesses resulting from pesticide exposure are documented, and the Agency believes they are underreported. Peer-reviewed studies, based on pesticide illness reporting and surveillance initiatives show evidence of illnesses to workers and handlers. For example, one study finds that acute pesticide poisoning incidents in the agriculture industry "continues to be an important problem" (Ref. 11). This study examined pesticide poisoning incidents among agricultural workers from 1998-2005, and analyzed 3,271 cases. Illness rates varied by category, but across agricultural worker categories, risks of poisoning were an order of magnitude higher than for almost all non-agricultural workers, which include farmers, processing/packing plant workers, and other miscellaneous agricultural workers. A study conducted by Das, *et al.*, identified 486 pesticide illness cases among California farmworkers for 1998-1999, based on a surveillance program with mandatory reporting by physicians. The study found that about half of all acute pesticide-related illness cases in the California surveillance system affected agricultural workers (Ref. 33). Over a quarter of the poisonings were to those mixing, loading or applying pesticides. The most common symptoms were dermatological (about 44%),

neurological (about 39%), and gastrointestinal (about 38%), and the most common route of exposure was skin contact, followed by inhalation and eye contact.

A 2008 report indicates that from 1998 to 2005 the major causes of occupational pesticide exposure were off-target drift, early reentry into a treated area, and pesticide use in conflict with the labeling (Ref. 11). Studies have been conducted to evaluate whether worker and handler families are exposed to pesticides because workers and handlers bring pesticide residues home on their body, shoes, and clothing (Ref. 23) (Ref. 24) (Ref. 34). These studies recommend that workers and handlers receive more specific information on how to protect their families and avoid exposure in the workplace (Ref. 23) (Ref. 24) (Ref. 34).

EPA believes the proposed changes address the specific avenues of occupational exposure and recognize the specific needs of the worker and handler population. Units VII. to XX. describe the proposed changes and alternative options considered by EPA. The presentation is generally structured to provide, where appropriate:

- A concise statement of the proposed change;
- The current WPS requirements;
- Stakeholder feedback and research supporting the proposed change;
- A detailed description of the proposed change and the rationale for the change;
- An estimated cost;
- A description of significant alternatives considered by EPA and the reasons for not proposing them; and
- Specific questions on which the Agency seeks feedback.

For purposes of discussion, EPA groups the proposed changes and considered alternatives as follows:

- Unit VII: Changes to the training for workers and handlers, including new recordkeeping requirements, multiple changes to the content of the training, and trainer qualifications.
- Unit VIII: Changes to the worker and handler notifications including posted and oral notifications and revisions to the warning sign content.
- Unit IX: Hazard communication materials.
- Unit X: Information that handlers and agricultural employers must exchange.
- Unit XI: Handler restrictions including minimum age requirements for handlers.
- Unit XII: Expansion of entry-restricted areas, minimum age requirements for workers entering a treated area under an REI, and clarification of the REI exceptions.

- Unit XIII: Pesticide safety information display, including location and content required.

- Unit XIV: Decontamination requirements for handlers and early entry workers.

- Unit XV: Emergency assistance.

- Unit XVI: Personal protective equipment, including the use of closed systems.

- Unit XVII: Monitoring handler exposure to cholinesterase-inhibiting pesticides.

- Unit XVIII: Exemptions for immediate family and crop advisors and exception to requirement for workers to be fully trained before entering a pesticide-treated area.

- Unit XIX: General revisions to the WPS.

- Unit XX: Implementation.

## VII. Training for Workers and Handlers

The current WPS allows employers to utilize a “grace period” to provide workers with basic training before entering the treated area and before the 6th day that workers begin working in an area covered by the WPS to provide the full pesticide safety training discussed below. This provision is considered an exception to the training requirements; therefore, the current “grace period” and proposed amendments are discussed in Unit XVIII.C.

### A. Shorten Retraining Interval for Workers and Handlers

1. *Overview.* The WPS currently requires employers to ensure that workers and handlers are trained once every five years. EPA proposes to establish an annual retraining interval for workers and handlers in order to improve the ability of workers and handlers to protect themselves and their families from pesticide exposure.

2. *Existing WPS regulations.* The WPS requires agricultural and handler employers to ensure that handlers and workers receive pesticide safety training once every five years (40 CFR 170.130(a) and 170.230(a)). This retraining time period was initially implemented to minimize burden on employers when pesticide safety training was first introduced, due to the limited number of trainers available at the time. Worker and handler trainings, as discussed in Unit VII.E., provide information on protecting oneself and family from pesticide exposure, recognizing and avoiding dangers in the workplace, and steps to take in the event of pesticide exposure.

3. *Summary of the issues.* Many stakeholders have commented that a 5-year retraining interval is too long for

workers and handlers to retain the safety information (Ref. 17) (Ref. 28) (Ref. 35) (Ref. 15) (Ref. 36) (Ref. 37). Through the National Assessment, letters to the Agency, and feedback from PPDC on proposed options, various stakeholders have recommended shortening the current interval in order to improve workers’ and handlers’ understanding and recall of the material covered. The General Training Issues Workgroup, with representatives from across the agricultural community, recommended shortening the retraining interval for workers and for the Agency to base the standard on retraining intervals for other similar professions (Ref. 16).

Research has indicated the importance of repetition in an individual’s retention of information (Ref. 38). Stakeholders, particularly pesticide safety educators, have noted that “repeating basic safety messages increases adoption of improved safety practices.” (Ref. 39) Providing training more frequently than the current requirement of every five years may be especially beneficial for workers and handlers with limited knowledge of English or another widely used language, e.g., Spanish, or who have recently started working in an agricultural job, who may need additional review to fully understand the material. Worker advocacy groups and educators have repeatedly noted that more frequent training is important for the worker community.

Additionally, a 2007 report for the EPA by JBS International titled “Hazard Communications for Agricultural Workers” reported that workers who were interviewed wanted more frequent training on pesticide safety (Ref. 40). Workers requested training to occur at least once a year.

The DOL’s NAWs provides information on the nature of worker employment and turn-over rate. The most recent report available notes that “[i]n 2001–2002, crop workers, including foreign-born newcomers, had been employed with their current farm employer an average of four and a half years. Thirty-five percent had been working for their current employer for one year or less, and 12 percent had been employed at their current farm job for ten or more years (Ref. 3).

Agricultural employers that provided information to EPA during the SBAR panel process on the WPS stated that they already provide annual pesticide training, since verification of previous training can be difficult to achieve and the employers want to ensure they comply with the WPS to avoid liability. EPA has heard similar statements in

discussions with farmers in other venues, but recognizes that all employers may not provide annual training. The Panel recommendations recognized the value of retraining, and specifically its ability to emphasize and remind the worker of important safety principles (Ref. 18). State and federal enforcement agents have also noted the difficulty in determining if a worker or handler has been trained, when relying on his recall of the training material over a long time period, e.g., 5 years.

#### 4. *Details of the proposal/rationale.*

The Agency proposes to establish an annual retraining interval for workers and handlers. Accordingly, this would reduce the maximum time between trainings for workers and handlers from 5 years to 1 year.

EPA believes that more frequent repetition of the protective principles outlined in the pesticide safety training is particularly important given the demographics of the worker population. As data cited earlier show, workers generally have low literacy and limited understanding of English. Therefore, it is important for workers and handlers to receive the information in a manner they understand and with sufficient frequency to ensure they retain the information.

Research shows that adults remember only about 10% of what they hear and 50% of information that they see and hear (Ref. 41). EPA expects the more frequent review of pesticide safety information, in combination with the proposal for expanded display of pesticide safety information at decontamination sites [see Unit XIII.A.], would improve retention of safety principles and hygiene practices critical to self-protection, reinforce the importance of protecting families from pesticide exposure, encourage handlers' adherence to label requirements, and remind workers and handlers of the obligations of their employers under the rule.

This proposed rule reflects previously established training requirements for similar occupational hazards. Federal agencies already require annual training when hazardous substances may be encountered in the workplace in many other industries. OSHA regulations require employers to provide annual training to protect employees from chemical hazards in the workplace including lead (29 CFR 1962.62(l)(1)), asbestos (1926.1101(k)(9)), and cadmium (29 CFR 1926.1127(m)(4)). Under the Resource Conservation and Recovery Act (RCRA), EPA requires personnel at hazardous waste treatment, storage, and disposal facilities to have annual training as well (40 CFR parts

264 and 265). The risks from pesticide exposure through agricultural work are similar to the threats posed by hazardous chemicals in other industries, and the Agency believes training requirements to protect agricultural workers and handlers should be comparable to those required by OSHA. In addition, agricultural and handler employers may already be required to keep records of annual training required by other regulations, such as those listed above. EPA believes that agricultural and handler employers would track an annual requirement for WPS training along with required OSHA trainings and employment records, such as those required by the Department of Labor.

The proposed regulatory text concerning shorter retraining intervals for workers and handlers appears in §§ 170.101(a) and 170.201(a), respectively, of the proposed rule.

5. *Costs and benefits.* EPA estimates the cost of the requiring employers to provide pesticide safety to training workers annually would be \$8.7 million per year. Training its workers would cost each agricultural establishment about \$22 per year. EPA estimates the cost to employers to provide pesticide safety training to handlers annually would be \$3.5 million per year. The average cost of training handlers would be about \$17 per year for agricultural establishments and \$66 per year for commercial pesticide handling establishments. For a complete discussion of the costs of the proposals and alternatives, see the "Economic Analysis of Proposed Revisions to the Worker Protection Standard," Chapter 3 Cost Analysis (Ref. 1).

While EPA can estimate the costs of this proposed change, quantifying the benefits is more difficult. Nonetheless, based on the information and expert views described in this section, it is reasonable to expect that more frequent training would lead to better retention of information by workers and handlers, ultimately resulting in fewer incidents of pesticide exposure and illness in workers and handlers, reduced take-home exposure, and better protection of children. The Agency concludes that the estimated costs are reasonable when compared to the anticipated benefits resulting from the additional training.

6. *Alternative options considered but not proposed.* The Agency considered three alternative approaches to the retraining interval for workers and handlers. The first alternative was recommended by the SBAR panel, based on a comment from one of the SERs. This option would require annual retraining and offer small establishments, those with fewer than

10 employees, the option to provide training less frequently for workers (Ref. 18). A small establishment requesting flexibility would be required to maintain documentation to show that (1) no additional workers were hired within the retraining interval, (2) no new or different pesticide applications were made from the previous year, and (3) they provided training for the specific workers on the establishment previously. If the establishment added any new employees, it would not be eligible to provide less frequent training. The estimated cost for this option would be about \$7.5 million annually, or \$60 for large agricultural establishments and \$12 for small agricultural establishments. The Agency agrees that this option could reduce the burden on small entities of providing annual training, but it would also reduce the benefit workers would receive from annual retraining. Moreover, EPA notes that implementation of such an exception would increase recordkeeping burdens on all small establishments that would offset, to some degree, the savings for some establishments from not having to provide training. The additional recordkeeping costs were not quantified. Under this exception, those small entities that added a new employee or applied a different pesticide during the year would actually have higher costs, even though the overall burden on small entities might be somewhat smaller. Based on the marginal cost reduction, increased recordkeeping burden, and potential risk to workers who would not receive training annually, the Agency thinks that requiring all establishments to provide annual training is more appropriate.

EPA also considered a 2-year retraining interval for all establishments. EPA estimates that biennial training for workers would cost about \$3.2 million per year, or about \$8 per agricultural establishment per year. Biennial training for handlers would cost about \$1.6 million per year, or \$8 per agricultural establishment and \$27 per commercial pesticide handling establishment per year. While biennial training would provide more protection to workers and handlers than the current 5-year retraining interval, EPA believes the longer timeframe would not improve retention to the extent expected from annual training. Employers are already required to provide and track OSHA trainings and to maintain employment records, such as those required by the Department of Labor, on an annual basis; requiring pesticide safety training every 2 years could

increase the burden on agricultural and handler employers to track the WPS training on a different schedule. Representatives on the SBAR panel indicated that many employers already provide training on an annual basis as part of their hiring process (Ref. 42 p. 2). EPA believes that even with a biennial training requirement, many employers would continue to provide training annually. Therefore, the burden on employers would not be significantly reduced by a biennial training requirement. EPA believes the costs of more frequent annual training are reasonable when compared to the anticipated benefits, particularly when combined with the stakeholder reports that annual training is already provided in many cases.

Finally, EPA considered requiring a written test to gauge the workers' or handlers' knowledge about the topics covered in training to ensure that they have the information needed for self-protection. The Agency, however, was dissuaded from this alternative due to concerns for the ability of workers and handlers to successfully complete an exam, even when they have been adequately trained, on account of literacy and language challenges among workers and handlers. Some stakeholders have indicated that noncertified applicators, who have similar demographic profiles to workers and handlers, may find it difficult to pass a written examination due to literacy and language barriers; the Agency believes workers and handlers may have similar difficulty (Ref. 36) (Ref. 37). Concerns exist for the perceived burden on employers for providing the time for needed training and exam-taking, and for the potential reduction in workforce when workers or handlers cannot pass the exam, despite being aware of the training content (Ref. 36) (Ref. 37). While testing might be a useful approach in some situations, the Agency believes that in this context a testing requirement is less likely than annual retraining to produce the desired improvements in workers' and handlers' understanding of pesticide safety. Therefore, EPA is not proposing testing as an alternative to annual training.

**7. Request for comment.** EPA specifically requests comment on the following questions:

- Should EPA consider different pesticide safety training timing? If so, what timeframe and why?
- Do you have information concerning the relationship between the frequency of training of workers and handlers and the frequency of incidents of pesticide exposure or illness? If so, please provide.

- Are there other ways EPA could ensure that workers and handlers retain the information presented in pesticide safety training so the retraining interval can be longer than one year?

- Are there other burdens or benefits associated with a 2-year retraining interval that EPA has not considered?

- What would be the impact of a 1- or 2-year retraining interval on states and tribes?

- Should EPA consider retaining the current 5 year retraining interval for workers and handlers and adding a requirement for annual refresher training? Please provide information on the relative benefits to and burdens on employers, workers, and handlers. EPA currently envisions that, if adopted, the annual refresher training for workers would include the topics proposed at 170.309(e), the grace period training (see Unit XVIII for a full discussion of the proposed points for training workers under the grace period). The annual refresher training for handlers would include a review of information necessary for handlers to protect themselves, their families, workers, and the environment from pesticide exposure. EPA anticipates that the refresher training would be slightly shorter in duration than the proposed full pesticide safety training, but seeks comment on the duration of such refresher training. Retaining the current 5 year retraining interval and adding a requirement for annual refresher training would necessitate additional recordkeeping by the employer. The employer would maintain training records for workers and handlers as discussed in Unit VII.B. below, as well as records containing the same information for the refresher training.

#### *B. Establish Recordkeeping Requirements To Verify Training for Workers and Handlers*

**1. Overview.** The existing WPS does not establish any mandatory mechanism for verifying that a worker or handler has received pesticide safety training. To improve compliance with the WPS training requirements and to address the absence of documentation of worker and handler training, the Agency proposes to eliminate the voluntary training verification card system and to require employers to maintain records of WPS worker and handler training for two years. In addition, the employer would be responsible for providing a copy of the record to each worker or handler upon completion of the training. EPA believes a requirement for employers to maintain the training roster, an official record, of employees' training would address current enforcement difficulties

in verifying whether a worker or handler has received training. The requirement to provide workers and handlers with a copy of the training record would allow a subsequent employer to verify that the worker or handler had received training and to copy the training verification record for the subsequent employer's own files.

**2. Existing WPS requirements.** Presently, the WPS does not require agricultural employers to document that they provided the training required under the WPS for workers or handlers. The WPS also does not require trainers or employers to record who they trained, what training they provided, or when they provided pesticide safety training. However, a voluntary program was established that allowed states, tribes, and agricultural employers to use verification cards to identify workers and handlers trained in accordance with the WPS. Participating states, territories, and tribes have opted to distribute cards printed by EPA or to generate agency-specific cards. States, territories, and tribes allow distribution of the cards by trainers qualified under the WPS or under stricter requirements. A few entities require trainers of workers or handlers to submit the names of those trained to the state regulatory agency; however, EPA does not maintain such a list. Under the current voluntary training verification card program, an agricultural or handler employer who hires workers and handlers with valid training verification cards does not need to provide training until the expiration date listed on the card. At least 20 states, territories, or tribes continue to use the voluntary training card system (Ref. 43).

**3. Summary of the issues.** Since 1998, EPA has received considerable feedback from stakeholders, including state regulatory partners, regarding the difficulty of enforcing the training provisions of the WPS rule, primarily due to a lack of recordkeeping (Ref. 17) (Ref. 18). Inspectors have noted that they cannot consult a record to determine if the workers and handlers on the establishment have been trained. Their primary method for evaluating compliance with training requirements is to interview workers and handlers regarding the content of training received or whether any training has occurred. Stakeholders, including state inspectors and farmworker organizations, have indicated that interview results may be compromised as workers and handlers may not recall the training they received, may not connect the questions with the training information, and may not be able to communicate with the inspector in a

language that both are comfortable speaking. Some workers and handlers may feel intimidated and provide inaccurate responses due to a lack of anonymity. Some states and territories, including AZ, CA, HI, NV, NH, NJ, PA, and PR, have addressed the issue through requiring a form of recordkeeping for worker and/or handler training, such as training records maintained by the employer, training records submitted to the state, or making mandatory the voluntary training verification card system. California has implemented a requirement for employers to maintain records of handler training for 2 years (3 CCR 6724(e)).

Some stakeholders voiced strong support for improved recordkeeping as discussed in reports from the National Assessment of EPA's Pesticide Worker Safety Program (Ref. 44). The General Training Issues Workgroup, convened as part of the National Assessment, recommended that all trainers be required to maintain records of trained workers for the duration of the retraining interval, and suggested that EPA offer a variety of methods for employers to demonstrate compliance (Ref. 15). Farmworker organizations as well as other stakeholders have repeatedly emphasized the need to improve enforcement and compliance verification capabilities in order to assure greater protection for workers (Ref. 17) (Ref. 35).

States, territories, and tribes have noted that the voluntary training verification card system is undermined by fraudulent cards. They cite instances of workers, handlers, and labor contractors illegally exchanging cards and altering the expiration date. Without an expiration year printed on each card and annual reprinting of current verification cards, it is difficult to assess the validity of the card. Without any requirement for creating and maintaining records of training, it is virtually impossible to verify who has been trained. States have informed the Agency that workers perceive the card as a credential that potential employers may use to determine their employability. As a result, state agencies have reported that falsified cards are common because workers and handlers want to show that they are employable. The Agency believes, based on information gathered since the implementation of the training verification card system, that the current system of voluntary training verification cards has proven to be an unreliable method of tracking and identifying trained workers (Ref. 37) (Ref. 45) (Ref. 46).

*4. Details of the proposal/rationale.* The Agency proposes to require agricultural and handler employers to keep records of all workers and handlers who receive pesticide safety training for 2 years on the agricultural establishment. Required information for the record of worker and handler training would include the trained worker's or handler's name, signature, date of birth, the date of training, the trainer's name, proof of trainer's qualification to train, the employer's name, employer's phone number or phone number of the establishment, and which EPA-approved training materials were used. EPA also proposes to require employers to provide a copy of the training record to each worker and handler upon completion of the training.

EPA believes these new recordkeeping requirements would address some of the difficulties in effectively enforcing the existing rule raised by regulatory and farmworker advocacy stakeholders. This proposal would allow inspectors to verify training through records retained by the employer and maintained by the workers and handlers themselves rather than solely through interviews with workers and handlers. The Agency's proposal is flexible in that it would allow paper or electronic recordkeeping, so an employer could scan the training records with employees' signatures and maintain electronic files.

The recorded date of birth would be used to verify that the minimum age for handlers and early-entry workers has been met. [See Units XI.B. and XII.A.] Retaining the trainer's proof of qualification to train would allow the inspector to determine if the trainer met the criteria to be a trainer. [See Unit VII.D]

EPA recognizes the importance of maintaining some mechanism for workers and handlers to change employers without repeating pesticide safety training each time they enter an establishment. EPA believes that the proposed option would meet the need for employers to verify that workers and handlers have received appropriate training by providing an official record rather than the voluntary training verification card. The proposal to require employers to maintain specific records of worker and handler training and to provide a copy of the training record to each trained worker and handler would make the voluntary training verification card program obsolete, redundant, and unnecessary. An employer could consider a worker or handler trained if either the employee or prior employer presents a copy of the

training record. EPA believes requiring employers to provide a record of the training to workers and handlers would allow workers and handlers to show future employers they have received WPS training. In addition, future employers could maintain a copy of the workers' or handlers' record in their files to comply with the requirement to ensure the employees have received the appropriate training.

The proposed regulatory text concerning the recordkeeping requirements to verify training for workers and handlers appears in §§ 170.101(d) and 170.201(d), respectively, of the proposed rule.

*5. Costs and benefits.* EPA estimates the cost of requiring employers to maintain records of worker training for 2 years would be \$1.6 million annually and about \$4 per agricultural establishment per year. The cost for employers to maintain records for handler training for 2 years would be \$160,000 annually, or less than \$1 per agricultural establishment and about \$3 per commercial pesticide handling establishment per year. For a complete discussion of the costs of the proposals and alternatives, see the "Economic Analysis of Proposed Revisions to the Worker Protection Standard," Chapter 3 Cost Analysis (Ref. 1).

Although EPA cannot quantify the benefits of this specific proposed option, EPA believes that requiring records of worker and handler training would improve employers' compliance with the training requirements. Improved compliance would increase the likelihood that workers and handlers perform WPS tasks with the information necessary to mitigate exposure to pesticides for themselves and their family members.

*6. Alternative options considered but not proposed.* First, EPA considered an option to require the employer or trainer to provide every trained worker and handler with a wallet-sized verification record (similar to the current voluntary training verification card) that contains the proposed recordkeeping information, instead of the proposal to provide a photocopy of the training recordkeeping form. Distribution of the training verification cards would be limited to trainers who meet the proposed qualifications. [See Unit VII.D.] The cards would be issued by EPA on an annual basis and would indicate a date after which the card would no longer be valid, i.e., a 2015 card would state that it would not be considered a valid verification of training after 12/31/2016. The annual card issuance by EPA and clear statement of the card's longest potential

validity could help cut down the issues of fraudulent use raised by states and other stakeholders.

This alternative would increase the burden on trainers, employers, and EPA and states, territories, and tribes. Instead of providing a copy of the training record, the trainer would be required to copy the information onto each individual training verification card. Subsequent employers would need to verify the information on the card with the original trainer or employer and to obtain a copy of the original training record for their files. EPA would be responsible for printing cards annually. EPA and states, territories, and tribes would be responsible for distributing cards to approved trainers and tracking who received the cards. EPA estimates that a mandatory training verification card program for workers would add about \$640,000 to the cost of training records, increasing the total cost to about \$2.2 million. Based on the increased burden to trainers, employers, and states, territories, and tribes without significantly different anticipated benefits to workers, handlers, trainers, and employers, EPA decided not to propose this option.

Second, EPA also considered requiring agricultural and handler employers to submit worker and handler training records to EPA or to the state, territory, or tribal regulatory authority. The agency responsible at the federal or state, territory, or tribal level would then maintain a database of trained workers and handlers. The Agency believes that it is adequate for employers to maintain the records, making them available to inspectors upon request. The submission of training records to a central repository might benefit EPA and others wishing to verify a worker's or handler's status. However, employers would still bear the cost of either creating a record of the training in the central repository or verifying a worker's or handler's eligibility in the system. Since most workers and handlers have one or two employers per year, the burden on employers to report to and check with a central repository of information may not be justified. The proposed rule would require that the employer maintain records on-site for inspection purposes.

Third, EPA also considered an option to require trainers, rather than or in addition to employers, to retain records of those trained. EPA is not pursuing this option because the WPS focuses on the responsibilities of agricultural and handler employers. Trainers are not responsible for the use of the pesticide on the establishment and therefore

cannot be legally responsible for following the labeling and complying with the WPS requirements. Ultimately, the agricultural or handler employer is responsible for ensuring that workers and handlers receive training and for tracking that training. Inspections focus on compliance of the agricultural or handler employer with the provisions of the WPS, not the trainer. The WPS would not prohibit the creation of training records by the trainer; however, the agricultural or handler employer would have to maintain a copy of the records.

Finally, the Agency considered establishing a 5-year interval for the record retention cycle, which would coincide with the statute of limitations for civil violations (28 U.S.C. 2462). The estimated cost of this requirement would be \$2 million for worker training records and \$290,000 for handler training records. The incremental cost between record retention for two or five years would be negligible. However, EPA believes based on state programs (e.g., California and Florida) and stakeholder feedback that a requirement to keep records for 2 years is sufficient. Therefore, EPA decided not to propose a 5-year interval for record retention.

7. *Request for comment.* EPA specifically requests comment on the following questions:

- Would a requirement for employers to report worker and handler training information to the state or federal government for compilation in a central repository have benefits? If so, please detail the potential benefits and cost.
- Should the Agency reconsider any of the alternate options presented in developing a final rule? If so, why? Please provide data to support your position.
- Are there changes that would make the training verification card program more effective and less prone to falsified cards? If so, please provide detailed suggestions for improving the system.
- Should EPA consider a performance standard to evaluate worker and handler training (asking questions based on the training content) rather than recordkeeping? Are there benefits or drawbacks to this approach that the Agency has not considered?
- Would employers rely on training records provided by the worker or handler as verification that the worker or handler had received pesticide safety training?

### *C. Require Employers To Provide Establishment-Specific Information for Workers and Handlers*

1. *Overview.* The existing WPS does not require employers to provide to

workers and handlers establishment-specific information on the location of decontamination supplies as part of their pesticide safety training. In order to allow workers and handlers to adequately protect themselves in the event of an unexpected exposure that could occur through spills, being sprayed, or other unusually high exposure situations, the Agency proposes that in addition to required general training employers must provide establishment-specific information about the location of decontamination supplies and pesticide safety and hazard information, as well as how to obtain medical assistance. Agricultural and handler employers would be required to provide this establishment-specific information to all workers and handlers, including those previously trained on other establishments. The Agency expects this change will equip workers and handlers with the knowledge and capability to assist in better protecting themselves from adverse effects of pesticide exposure.

2. *Existing WPS regulations.* Sections 170.135(e) and 170.235(e) require the employer to notify workers and handlers respectively about the location of the pesticide safety poster and the emergency medical information. Presently, part 170 has no requirement for employers to provide information on the location of decontamination supplies or hazard information to workers and handlers.

3. *Summary of the issues.* Farmworker organizations have raised to EPA the need for workers and handlers to receive establishment-specific information even if the employer can verify that the workers and handlers have already received pesticide safety training. The pesticide safety training covers general self-protection principles. Establishment-specific information on where to find, among other things, decontamination supplies, emergency contact information, and pesticide application information, is not consistent across establishments. While the workers and handlers may have received general information on how to protect themselves, without knowledge of where the necessary supplies are located or how to obtain emergency medical assistance they would not be able to use the knowledge to protect themselves.

4. *Details of the proposal/rationale.* The Agency proposes to require employers to provide establishment-specific pesticide safety training for workers and handlers when they enter the establishment and before beginning WPS tasks. Content for the establishment-specific information

would include the location of pesticide safety information, the location of pesticide application and hazard information, the location of decontamination supplies, and how to obtain emergency medical assistance. Employers would be required to provide this training prior to the handler performing handler activities or the worker performing worker activities orally in a manner that the handler or worker can understand, such as through a translator. Lastly, this training would be required even if the employer can verify that the worker or handler has already received pesticide safety training on another establishment.

EPA acknowledges that some of this information is already required under the current rule. However, EPA believes that consolidating the requirements for establishment-specific training would make them easier for employers to find and comply with, resulting in a higher likelihood that workers and handlers would receive the necessary information.

The proposed regulatory text concerning the requirement for employers to provide location-specific information to workers and handlers appears in §§ 170.103 and 170.203(b) of the proposed rule.

5. *Costs and benefits.* The estimated cost of this proposal is included in the cost of expanded training discussed in Unit VII.E. EPA assumes that employers cover this information as part of routine pesticide safety training and therefore including the establishment-specific information would add negligible time and cost.

6. *Alternative options considered but not proposed.* EPA did not consider any significant alternatives to the proposed option.

7. *Request for comment.* EPA specifically requests comment on the following question:

- To what extent do employers already provide this information to all workers and handlers when they first arrive at the establishment, for example, during the hiring process?
- The current rule requires employers to ensure that the workers and handlers receive information in a manner they understand. Are there any issues with the current requirement for employers? If so, please describe and provide data to support this position.

#### D. Establish Trainer Qualifications

1. *Overview.* The current rule allows workers and handlers to be trained by a variety of persons, including certified applicators and handlers. In order to ensure that the pesticide safety training received by workers and handlers is

provided in a manner conducive to adult learning and provided in a language and manner in which they can understand, the Agency proposes to require trainers of workers to have completed an EPA-approved train-the-trainer program or be designated by EPA or an appropriate state or tribal agency as trainers of certified applicators. Certified applicators would no longer be automatically considered qualified to train workers. The Agency proposes to retain the existing qualifications for handler trainers, namely that in order to be a trainer of handlers, one must be a certified applicator under 40 CFR part 171 at the time of the training, to have completed train-the-trainer program, or be designated by EPA or an appropriate state or tribal agency as a trainer of certified applicators and to limit approval of train-the-trainer programs to EPA. In addition, EPA proposes to require trainers to be present throughout the training and to ensure that there are no distractions, e.g., background videos, loud machinery, or other instructions, competing for the worker's or handler's attention.

2. *Existing WPS regulations.* The existing WPS designates the following groups as qualified to be pesticide safety trainers for workers:

- Applicators certified according to 40 CFR part 171 (private and commercial applicators of RUPs);
- Persons designated as trainers of certified applicators, or pesticide handlers by the appropriate state, federal, or tribal agency;
- Individuals who have completed an approved pesticide safety train-the-trainer program; or
- Persons who have completed WPS handler training.

The existing WPS designates the following groups as qualified to be pesticide safety trainers for handlers:

- Applicators certified according to 40 CFR part 171;
- Persons designated as trainers of certified applicators or pesticide handlers by the appropriate state, federal, or tribal agency; and
- Individuals who have completed an approved pesticide safety train-the-trainer program.

The current WPS also requires trainers to be present to answer questions but does not require that they be present for the entire length of the training.

3. *Summary of the issues.* When EPA proposed what would become the 1992 WPS (53 FR 25970; July 8, 1988), stakeholders, specifically USDA and farmer organizations, raised concerns about the need for adequate numbers of qualified WPS trainers. To ease the

burden of transition for agricultural employers during the implementation of the rule, EPA made approved criteria for trainers in the final rule (57 FR 38102, 38128–29; Aug 21, 1992) intentionally broad. Since that time, the pool of qualified trainers has expanded due to the increase and availability of train-the-trainer programs. EPA has supported the Association of Farmworker Opportunity Programs (AFOP) “Serving America’s Farmworkers Everywhere” AmeriCorps project for over ten years. This project connects trainers with farmworker communities to build training capacity and to provide free training services to agricultural and handler employers. In addition, EPA has developed a train-the-trainer handbook for worker training (Ref. 47). Many states have also increased the number of qualified trainers through train-the-trainer programs and other mechanisms.

Farmworker organizations and pesticide safety educators have raised to EPA the importance of pesticide safety trainers having expertise both in the subject matter covered and in adult education for low-literacy audiences. The Hazard Communications for Agricultural Workers Report by JBS International found that workers want to receive pesticide safety training from trainers who are knowledgeable and certified (Ref. 40). In order to convey information about routes of pesticide exposure, potential accidents and how to mitigate pesticide exposure, and avoiding exposure through basic hygiene, the trainer must have a strong knowledge of the subject matter. A person can obtain this knowledge in several ways. First, a person who has gone through a train-the-trainer program would become versed in the specific information to be conveyed to the training audience. Second, a person who is qualified, as a university professor or cooperative extension agent, to conduct training for a broad range of pesticide users, would have a working knowledge of the potential pesticide risks faced by workers and handlers. Lastly, handlers and applicators learn the subject matter in the training and certification programs, which cover the concepts presented in pesticide safety training in more detail.

Research and stakeholder input have highlighted the need for trainers to have specific skills to reach this type of audience. Farmworker organizations and pesticide educators expressed concern about the ability of individuals without knowledge of adult education practices to conduct effective pesticide safety training (Ref. 39) (Ref. 46) (Ref. 48). Stakeholders have also informed EPA that training may be presented

simultaneously with other information, preventing workers and handlers from focusing completely on the safety information presented.

Stakeholders have raised concerns that trainers lacking skills in adult education may be ineffective in communicating necessary pesticide safety information to workers (Ref. 35) (Ref. 36) (Ref. 48) (Ref. 46) (Ref. 39). Farmworker organizations have supported limiting eligibility of trainers of workers and handlers to those completing a train-the-trainer program “covering methods of conducting an informal adult participatory education session for low literacy learners, with limited English proficiency” (Ref. 35). A pilot train-the-trainer program in Washington State showed that participants who learned training techniques applicable to the worker population were more successful in communicating with their target audience than they had been prior to training, indicated by improved performance of the audience on a post-training evaluation of knowledge (Ref. 17).

4. *Details of the proposal/rationale.* EPA proposes to require trainers of workers to complete a pesticide safety train-the-trainer program approved by EPA or to be designated as a trainer of certified applicators by EPA or a state or tribal agency responsible for pesticide enforcement. The proposal would delete the option for certification under 40 CFR part 171 or training as a WPS handler to serve as sufficient qualifications for a person to be a trainer for workers.

Additionally, the Agency proposes to require trainers of workers and trainers of handlers to be present during the entirety of a training session and to answer questions. Trainers must also ensure that the training is presented in a manner free of distractions.

EPA proposes to retain the existing categories for trainers of handlers and to add a requirement that the train-the-trainer program be approved by EPA.

Under a cooperative agreement with the NASDA Research Foundation, EPA has developed the *National Worker Safety Trainer Handbook* (Ref. 47). This manual outlines the necessary pesticide safety information for workers, as well as describing adult education principles and how to communicate across languages and cultures. In addition to the *National Worker Safety Trainer Handbook*, EPA also supports the training of pesticide safety trainers of workers by AFOP. Both of these programs would serve as models for an EPA-approved train-the-trainer program. Using these models, EPA would develop

guidance to describe the necessary elements of a train-the-trainer program and the process for seeking EPA approval. EPA anticipates that any interested organizations, including non-profit organizations, universities, state regulatory agencies, and the pesticide industry, could seek approval for and administer a train-the-trainer course that meets EPA’s standards.

EPA proposes to retain the options for persons designated as trainers of certified applicators or handlers by EPA or a state or tribal agency responsible for pesticide enforcement because either EPA or the state or tribe has recognized that they have the subject matter expertise and qualifications necessary to convey the pesticide safety information to workers or handlers. Many cooperative extension services (part of land grant universities) have experts on pesticide safety that work with agricultural employers to provide information on safe pesticide use. EPA believes that in their role as educators and with knowledge of adult education, pesticide application, and safety principles, these persons are qualified to provide the information to workers and handlers. State regulatory agencies also hire or contract with adult educators to provide pesticide safety training to workers or handlers. Rather than increase the burden on the state or tribal lead agency by requiring that all persons complete a pesticide safety train-the-trainer course, EPA believes that state and tribal lead agencies would ensure that persons they designate as trainers can appropriately convey the information required under the proposed regulation to workers and handlers.

EPA proposes to eliminate the automatic authorization of certified applicators and WPS handlers to train workers. Although certified applicators have demonstrated competency in pesticide application and safety, they may not possess skills as trainers, particularly for low-literacy, non-English speaking, adult audiences. Handlers may possess pesticide safety knowledge and may have cultural and language abilities in common with workers, but they may lack teaching skills or sufficient technical knowledge needed to effectively convey the information. For training to make the most impact, trainers need to be competent not only in their knowledge of pesticide risks but also in communicating with adult learners with educational challenges. Trainers may have difficulty conveying the abstract concept of pesticide risk, due to barriers such as the limited English language skills, cultural differences, and low

educational levels of many workers and handlers. EPA believes that there are sufficient qualified trainers to meet the proposed requirements now, as opposed to when the 1992 WPS was implemented, based on trainers qualified by AFOP initiatives and the publication and dissemination of an EPA train-the-trainer handbook.

EPA proposes to retain the option for certified applicators to train handlers. While the Agency has some concern regarding the ability of certified applicators to provide effective training for workers because worker trainers need to have specific capability to deliver basic information to an audience that may have a low education level and limited literacy and English skills, EPA thinks this group can be successful as trainers for handlers. There is a large overlap between the roles of applicators and handlers, which allows applicators to draw on their personal knowledge and skills needed to correctly and safely perform handler tasks. In addition, in the revisions to part 171, EPA is proposing to require certified applicators to provide training that mirrors the WPS handler training to noncertified applicators applying RUPs under their direct supervision. EPA believes that the certified applicators are appropriately qualified to convey the proper pesticide application techniques and importance of protecting oneself from pesticide exposure to handlers that will be performing similar tasks in areas that have been treated with pesticides.

EPA believes that increasing the qualifications of trainers will increase the value of training sessions by improving the quality of the training. Workers will benefit by improved understanding of the learning objectives and an increased ability to protect themselves and their families.

To ease implementation and ensure a sufficient cadre of qualified trainers is available, EPA proposes to continue allowing certified applicators to conduct worker training until two years following the effective date of the final rule. This transition period would allow time for applicators and other persons that do not meet the current requirements and who wish to conduct worker training to qualify as trainers under the proposed requirements, either by attending an EPA-approved train-the-trainer program or seeking designation as an approved trainer of workers from EPA or the state or tribe, and for all trainers to become familiar with new training materials developed as a result of the finalized rule.

EPA plans to support the development of training materials for workers and handlers that reflect the

new training requirements such as manuals and videos. EPA will work with stakeholders to develop these materials when the amendments to the rule are finalized and plans to have them ready for distribution when the revised training requirements go into effect.

The proposed regulatory text concerning trainer qualifications for workers and handlers appears in §§ 170.101(c)(4) and 170.201(c)(4) respectively of the proposed rule.

5. *Costs.* EPA estimates the cost of revising the standards for worker trainers would be \$1.1 million annually, or about \$3 per agricultural establishment. For a complete discussion of the costs of the proposals and alternatives, see the "Economic Analysis of Proposed Revisions to the Worker Protection Standard," Chapter 3 Cost Analysis (Ref. 1).

EPA cannot quantify the precise benefits associated with this proposal; however, EPA believes requiring trainers to have the ability to convey the pesticide safety information, along with knowledge of adult education principles and how to communicate with low-literacy audiences, would increase overall understanding and retention of the pesticide safety training by workers. This improvement would increase the likelihood that workers and handlers adopt the principles outlined in the pesticide safety training and reduce the potential for exposure to themselves and their family members.

6. *Alternative options considered but not proposed.* EPA considered several options regarding categories of qualified trainers. One option considered by the Agency was to continue to consider applicators certified under 40 CFR part 171 and handlers as qualified to train workers. EPA does not think, however, that a certified applicator's knowledge of pesticide safety and application principles alone is sufficient to qualify the certified applicator as an educator for basic safety principles for workers. As discussed above, teaching an adult population, especially individuals with low-literacy skills, differing cultural norms, and a variety of primary languages, requires trainers with skills in reaching this type of audience. After considering this alternative in light of the demographics of workers and the importance of providing safety information in manner workers can understand, EPA does not consider it reasonable to assume that certified applicators and handlers necessarily have the adult education skills to adequately perform WPS training for workers. Certified applicators and handlers may become trainers if they

complete a train-the-trainer course or are designated as trainers by the EPA or a state or tribal agency.

EPA also considered an option to restrict trainer eligibility to only trainers who have completed a train-the-trainer program. The Agency believes that allowing trainers of applicators and those having completed a train-the-trainer course to train workers, as well as allowing certified applicators to train handlers, will offer continued flexibility for agriculture and result in less burden than restricting the qualifications to a single type of trainer. EPA has confidence that trainers designated as qualified by EPA or the states or tribes would have knowledge of adult education and the safety principles that workers need to know. Requiring all worker and handler trainers to complete a train-the-trainer program would limit the number of eligible trainers and as a result there might not be sufficient numbers to meet employers' training needs.

EPA also considered implementing a test to determine the eligibility of trainers. Though examination would provide a method of evaluating knowledge, safety educators and advocate groups maintained that trainers need skills that cannot readily be assessed by an examination. For example, it would be difficult to assess, through an exam, whether a person has skills in communicating with low-literacy, adult audiences. EPA believes that train-the-trainer courses in which trainers learn and practice interactive and engaging training techniques, in addition to the necessary pesticide safety information, would be more effective than a written exam to prepare educators for an audience of workers and handlers.

7. *Request for comment.* EPA specifically requests comment on the following questions:

- Are there other programs that would prepare trainers to convey pesticide safety information to workers and handlers? Please describe the program and the feasibility of its implementation for affected establishments.
- Should EPA consider requiring trainers of workers and handlers to refresh their qualifications periodically, such as requiring attending a train-the-trainer program every 5 years? Please provide data in support or opposition.
- The current rule requires employers to ensure that the workers and handlers receive information in a manner they understand. Are there any issues with the current requirement for trainers? If so, please describe and provide data to support this position.

#### *E. Expand the Content of Worker and Handler Pesticide Safety Training*

1. *Overview.* The WPS currently requires employers to provide pesticide safety training covering specific content to workers and handlers. EPA proposes to expand the information required to be covered in worker and handler pesticide safety training so that workers and handlers can better protect themselves from adverse effects of pesticide exposures.

Additional content in worker pesticide safety training would include, among other things, information on: how to reduce pesticide take-home exposure, the requirements for early-entry notification, the requirement for emergency assistance for workers, and the availability of hazard communication materials for workers, and informing workers of the obligations of agricultural employers and what workers can expect.

Additional content in handler pesticide safety training would include the handlers' requirement to cease application if he or she observes a person other than another trained and properly equipped handler in the area under treatment or entry restricted area, and a requirement for OSHA-equivalent training on respirator use, fit-testing of respirators, and medical evaluation for respirator users.

EPA expects this additional information provided in the proposed expansions to worker and handler pesticide safety training to better protect workers and handlers from risks associated with pesticides.

2. *Existing WPS regulations.* Under 40 CFR 170.130(d)(4), worker pesticide safety training must include, at a minimum, the following 11 basic safety training points:

- Where and in what form pesticides may be encountered during work activities.
- Hazards of pesticides resulting from toxicity and exposure, including acute and chronic effects, delayed effects, and sensitization.
- Routes through which pesticides can enter the body.
- Signs and symptoms of common types of pesticide poisoning.
- Emergency first aid for pesticide injuries or poisonings.
- How to obtain emergency medical care.
- Routine and emergency decontamination procedures, including emergency eye flushing techniques.
- Hazards from chemigation and drift.
- Hazards from pesticide residues on clothing.
- Warnings about taking pesticides or pesticide containers home.

- Requirements of the WPS designed to reduce the risks of illness or injury resulting from workers' occupational exposure to pesticides, including application and entry restrictions, the design of the warning sign, posting of warning signs, oral warnings, the availability of specific information about applications, and the protection against retaliatory acts.

Under 40 CFR 170.230(c)(4), handler pesticide safety training must include, at a minimum, the following 13 basic safety training points:

- Format and meaning of information on the product label, including safety information.
- Hazards of pesticides from toxicity and exposure.
- Routes through which pesticides can enter the body.
- Signs and symptoms of pesticide poisoning.
- Emergency first aid for pesticide poisoning.
- How to get emergency medical care.
- Routine and emergency decontamination procedures.
- Personal Protective Equipment (PPE).
- Heat-related illness issues.
- Safety requirements for handling, transporting, storing, and disposing of pesticides.
- Environmental concerns.
- Warnings about taking pesticides or pesticide containers home.
- Training on the requirements of the regulation related to handling.

3. *Summary of the issues.* The stakeholder engagement process produced many comments on the content of pesticide safety training for workers and handlers. [See Unit V.B.] Recommendations to improve worker pesticide safety training in the "Report on the National Assessment of EPA's Pesticide Worker Safety Program" included adding elements to training on potential sources of pesticide exposure and preventing family exposure, such as specific information on the need to wash work clothes separately from other clothing (Ref. 17) (Ref. 15). Additionally, farmworker organizations support expansion of the worker pesticide safety training to include general information about pesticide hazards, ways to reduce take-home exposure, and worker rights. In contrast, other stakeholders raised concerns for extending the length of training, increasing the burden on employers, or making the training tedious for workers who may not be paid for time spent in training. Many stakeholders also requested that EPA be mindful when revising the WPS of the burdens faced by workers and some handlers, due to

their low income, low literacy, and limited English language skills.

4. *Details of the proposal/rationale.* EPA is proposing a number of new provisions to be included in the content for worker and handler safety training. Each of these is discussed in greater detail in this section. Where some proposed changes only clarify or enhance an existing training topic, rather than substantially altering the content of the topic, EPA does not discuss the proposed modifications in as great detail as the proposed modifications to existing language that substantially alter the content of the training topic.

EPA proposes to add the following topics to both worker and handler training: protection from pesticide take-home exposure, enhanced emergency assistance provisions in the WPS, and the availability of hazard communication materials.

Additional worker safety training topics would add about 15 minutes to the training and would include, in addition to the points in the current WPS: Handler tasks that employers must not direct or allow workers to do, early-entry notification requirements including age restrictions, hazards of pesticide exposure to children and pregnant women, how to report suspected violations, and the prohibition of employer retaliation for reporting suspected violations or attempting to comply with 40 CFR part 170.

The proposed revised regulation for worker training at § 170.101(c)(2) through (3) would require the following training content:

- Agricultural employers' obligation to provide workers with information and protections designed to reduce work-related pesticide exposures and illnesses. This includes providing pesticide safety training, pesticide safety and application information, decontamination supplies, and emergency medical assistance, and notifying workers of restrictions during applications and on entering pesticide treated areas.
- How to recognize and understand the meaning of the warning sign used for notifying workers of restrictions on entering pesticide treated areas on the establishment.
- How to follow directions and/or signs about keeping out of entry restricted or pesticide treated areas.
- Where and in what form pesticides may be encountered during work activities and potential sources of pesticide exposure on the agricultural establishment. This includes pesticides drifting from nearby applications, and

that pesticide residues may be on or in plants, soil, irrigation water, tractors, application equipment, or used personal protective equipment.

- Potential hazards from toxicity and exposure that pesticides present to workers and their families, including acute and chronic effects, delayed effects, and sensitization.
- Potential hazards from chemigation and drift.
- Routes through which pesticides can enter the body.
- Signs and symptoms of common types of pesticide poisoning.
- Emergency first aid for pesticide injuries or poisonings.
- Routine and emergency decontamination procedures, including emergency eye flushing techniques.
- Wash immediately in the nearest clean water if pesticides are spilled or sprayed on the body and as soon as possible, shower, shampoo hair, and change into clean clothes.
- How and when to obtain emergency medical care.
- When working near pesticides or in pesticide treated areas, wear work clothing that protects the body from pesticide residues and wash hands before eating, drinking, using chewing gum or tobacco, or using the toilet.
- Wash or shower with soap and water, shampoo hair, and change into clean clothes as soon as possible after working near or in pesticide treated areas.
- Potential hazards from pesticide residues on clothing.
- Wash work clothes before wearing again.
- Wash work clothes separately from other clothes.
- Do not take pesticides or pesticide containers used at work to your home.
- Agricultural employers are required to provide workers with pesticide hazard information.
- Agricultural employers must not allow or direct any worker to mix, load or apply pesticides or assist in the application of pesticides unless the worker has been trained as a handler.
- There are minimum age restrictions and notification requirements for early-entry activities.
- Potential hazards to children and pregnant women from pesticide exposure.
- Keep children and nonworking family members away from pesticide treated areas.
- Remove work boots or shoes before entering home.
- After working near pesticides or in pesticide treated areas, remove work clothes and wash or shower before physical contact with children or family members.

- How to report suspected pesticide use violations to the state or tribal agency responsible for pesticide enforcement.

- Agricultural employers are prohibited from intimidating, threatening, coercing, or discriminating against any worker for the purposes of interfering with any attempt to comply with the requirements of this part, or because the worker has made a complaint, testified, assisted, or participated in any manner in an investigation, proceeding, or hearing pursuant to this part.

Additional handler training topics would add about 15 minutes to the existing training and would include: proper removal of PPE; the requirement for handlers to cease application if persons are in the treated area or entry restricted area; the requirement that handler employers must ensure handlers have received respirator fit-testing, training, and medical evaluation if required to wear a respirator; and the minimum age requirement for handlers.

The proposed revised regulation for handler training at § 170.201(c)(2) through (3) would require the following training content:

- Employers' obligation to provide handlers with information and protections designed to reduce work-related pesticide exposures and illnesses. This includes providing pesticide safety training, pesticide safety and application information, decontamination supplies, and emergency medical assistance, and notifying handlers of restrictions during applications and on entering pesticide treated areas.

- How to recognize and understand the meaning of the warning sign used for notifying workers of restrictions on entering pesticide treated areas on the establishment.

- How to follow directions and/or signs about keeping out of entry restricted or pesticide treated areas.

- Where and in what form pesticides may be encountered during work activities and potential sources of pesticide exposure on the agricultural establishment. This includes pesticides drifting from nearby applications, and that pesticide residues may be on or in plants, soil, irrigation water, tractors, application equipment, or used personal protective equipment.

- Potential hazards from toxicity and exposure that pesticides present to workers and their families, including acute and chronic effects, delayed effects, and sensitization.

- Potential hazards from chemigation and drift.

- Routes through which pesticides can enter the body.

- Signs and symptoms of common types of pesticide poisoning.

- Emergency first aid for pesticide injuries or poisonings.

- Routine and emergency decontamination procedures, including emergency eye flushing techniques.

- Wash immediately in the nearest clean water if pesticides are spilled or sprayed on the body and as soon as possible, shower, shampoo hair, and change into clean clothes.

- How and when to obtain emergency medical care.

- When working near pesticides or in pesticide treated areas, wear work clothing that protects the body from pesticide residues and wash hands before eating, drinking, using chewing gum or tobacco, or using the toilet.

- Wash or shower with soap and water, shampoo hair, and change into clean clothes as soon as possible after working near or in pesticide treated areas.

- Potential hazards from pesticide residues on clothing.

- Wash work clothes before wearing again.

- Wash work clothes separately from other clothes.

- Do not take pesticides or pesticide containers used at work to your home.

- Agricultural employers are required to provide handlers with pesticide hazard information.

- Agricultural employers must not allow or direct any worker to mix, load or apply pesticides or assist in the application of pesticides unless the worker has been trained as a handler.

- Early-entry workers must be at least 16 years of age to perform early-entry activities and workers must receive notification prior to conducting early-entry activities.

- Potential hazards to children and pregnant women from pesticide exposure.

- Keep children and nonworking family members away from pesticide treated areas.

- Remove work boots or shoes before entering home.

- After working near pesticides or in pesticide treated areas, remove work clothes and wash or shower before physical contact with children or family members.

- How to report suspected pesticide use violations to the state or tribal agency responsible for pesticide enforcement.

- Employers are prohibited from intimidating, threatening, coercing, or discriminating against any handler for the purposes of interfering with any

attempt to comply with the requirements of this part, or because the worker has made a complaint, testified, assisted, or participated in any manner in an investigation, proceeding, or hearing pursuant to this part.

- Information on proper application and use of pesticides.

- Requirement for handlers to follow all pesticide label directions.

- Format and meaning of all information contained on pesticide labels and in labeling.

- Need for and appropriate use and removal of all personal protective equipment.

- How to recognize, prevent, and provide first aid treatment for heat-related illness.

- Safety requirements for handling, transporting, storing, and disposing of pesticides, including general procedures for spill cleanup.

- Environmental concerns, such as drift, runoff, and wildlife hazards.

- Handlers must not apply pesticides in a manner that results in contact with workers or other persons.

- Handler employers are required to provide handlers with information and protections designed to reduce work-related pesticide exposures and illnesses. This includes providing, cleaning, maintaining, storing, and ensuring proper use of all required personal protective equipment; providing decontamination supplies; and providing specific information about pesticide use and labeling information.

- Handlers must cease or suspend a pesticide application if workers or other persons are in the treated area or the entry-restricted area.

- Handlers must be at least 16 years of age.

- Handler employers must ensure handlers have received respirator fit-testing, training, and medical evaluation if they are required to wear a respirator.

- Handler employers must post treated areas as required by this rule.

- i. *Protection from Pesticide Take-Home Exposure.* Although the current training instructs workers and handlers not to take home pesticide containers and that clothing can carry pesticide residue, the Agency proposes to expand the existing sections to include more specific information in the worker and handler pesticide safety training on ways to reduce take-home pesticide exposure. Specifically, the expanded training content would include the following: Instructions on washing before touching family members, removing soiled work boots or shoes before entering the home, washing clothes that may have pesticide residues

on them before wearing them again and separately from other family clothes, and keeping family members away from treated areas, as well as information on the potential risks to children and pregnant women from pesticide exposure.

Workers and handlers may be exposed to pesticides at work; additionally, they and their families may be exposed to pesticide residues brought into their homes from the workplace. "Take-home" exposure is the movement of agricultural pesticides from the workplace to the home via contact with pesticide-contaminated clothing, dirt tracked into the home, or other pathways. This type of exposure has generated concern among health care professionals and worker advocates. A 1995 study by the Centers for Disease Control (CDC) on worker's home contamination found, in multiple industries, that hazardous chemical contamination of workers' homes is a worldwide problem, resulting in injury and at times, death (Ref. 49 pp. vii, 17–19).

Although EPA does not have conclusive data about the impact of pesticide residue transfer from a worker or handler to his or her home, car, and family members, the Agency recognizes that workers and handlers are exposed to chemicals in the workplace and should be educated on minimizing the transfer of these chemicals to non-work locations. Some studies have been conducted to evaluate whether non-working children in agricultural families may have greater exposure to agricultural chemicals than children of non-agricultural families from the presence of pesticide residue in their home (Ref. 50). Contamination of the home from agricultural pesticides can come from numerous sources, including soil, dust, or other residue on clothing and vehicles and contaminated storage containers (Ref. 49) (Ref. 51). Additionally, agricultural pesticides introduced into the home may persist longer than in outdoor areas, due to the lack of degradative environmental processes, such as those furthered by rain and sun. Peer-reviewed studies have concluded that "farmworker and all rural families must be educated about drift and how to reduce exposure" (Ref. 52 p. 1259) (Ref. 53) and that "pregnant farmworkers and those living with farmworkers need to be educated to reduce potential take-home pesticide exposure" (Ref. 34 p. 491).

Studies have focused on the presence of agricultural pesticides in the homes of workers. Centers for Children's Environmental Health and Disease Prevention Research were established to

explore ways to reduce children's health risks from environmental factors. The program is jointly funded by EPA and the National Institute of Environmental Health Sciences (NIEHS) and also collaborates with the Centers for Disease Control (Ref. 54). Two of the centers, the University of California at Berkeley (UC Berkeley) and the University of Washington, have a number of studies which focus on agricultural pesticides and children, some with a primary outcome of pesticide exposure reduction strategies. The Center for the Health Assessment of Mother and Children of Salinas (CHAMACOS) Study, a longitudinal birth cohort study of children in the Salinas Valley, California, is the largest study administered by UC Berkeley's Children's Center (Ref. 55). California Department of Health Services tested dust in worker and non-worker homes and concluded that there is a greater presence of pesticide residue in the homes of workers (Ref. 56). Additional studies apart from the UC Berkeley activities have also examined the transfer of pesticide residues from pesticide-treated areas to the home and automobiles, i.e., the take-home pathway (Ref. 23) (Ref. 50) (Ref. 51) (Ref. 57) (Ref. 58).

Effective methods of reducing take-home exposure exist. CDC's 1995 study identified worksite behaviors, such as minimizing workplace exposures, storing clean clothes in uncontaminated areas of the worksite, changing work clothes prior to returning home, and showering before leaving the workplace, that are effective means to reduce take-home exposure (Ref. 49). The report also identified methods in the home to reduce contamination, such as laundering work clothes separately from family laundry, preventing family members from visiting the workplace, and informing the workers of risks to family members and how to minimize their exposure. Workers and their families should be familiar with how behaviors such as hand washing, proper laundering, and removing work clothes before entering the home can reduce risk of exposure (Ref. 34).

#### *ii. Training on Reporting Violations and Employer Retaliation Prohibition*

EPA proposes to require that worker and handler pesticide safety training include information on how to report suspected pesticide use violations. EPA also proposes to include a training point explaining that agricultural employers are prohibited from retaliation against workers and handlers for attempting to comply with the WPS or reporting suspected violation of the WPS.

Including this information in the worker and handler training would increase the effectiveness of the existing WPS protections against retaliations.

Under the current 40 CFR 170.7(b) employers are prohibited from taking "any retaliatory action for attempts to comply with this part or any action having the effect of preventing or discouraging any worker or handler from complying or attempting to comply with any requirement of this part." The existing § 170.130(d)(4)(xi) requires employers to provide training on protections against retaliatory acts. Similar protection against retaliation for handlers is covered in § 170.230(c)(4)(xiii).

Farmworker advocacy organizations recommend including in the worker and handler pesticide safety training information on the rights of workers and handlers under the WPS (Ref. 36). The Agency agrees that workers and handlers should be aware of WPS provisions on how to report violations and the prohibition on retaliation by the agricultural employer. Farmworker advocacy organizations indicate that workers and handlers informed of their employers' requirements and the process to report violations and pesticide exposure incidents are more likely to report them. This can lead to a clearer understanding of circumstances leading to WPS violations and pesticide exposure issues by enforcement.

EPA believes it is important for workers and handlers to understand that the WPS provides protections for their safety and that if their employers do not provide the required protections, the government can assist them. By incorporating this information into the WPS training, it is more likely that workers and handlers will understand the information and be aware of the resources available to them in the event of a suspected act of retaliation or noncompliance with the WPS.

Farmworker organizations requested that WPS worker and handler training include contact information for legal representation (Ref. 35). EPA, however, does not agree. EPA does not consider it appropriate to recommend particular attorneys or legal representatives. Moreover, while legal representation may be helpful for a worker or handler who experiences retaliation or a serious pesticide exposure, it is not clear that requiring the requested notification would significantly contribute to the goals of FIFRA.

The proposed regulatory text concerning training in regard to reporting suspected violations and employer prohibition against retaliation

appears in §§ 170.101(c)(3)(viii) through (ix) and 170.201(c)(3)(v) of the proposed rule.

iii. *Training on Hazard Communications Materials for Workers and Handlers.* EPA proposes to require agricultural and handler employers to provide workers and handlers with access to the expanded pesticide application information, the SDS, and the pesticide product labeling upon request for up to two years. [See Unit IX.] EPA proposes to include an overview of the new hazard communication requirements and materials (expanded application information, SDS, and product labeling) in the pesticide safety trainings for workers and handlers.

The proposed regulatory text concerning hazard communication content of worker and handler pesticide safety training appears in §§ 170.101(c)(3)(i) and 170.201(c)(3)(v) of the proposed rule.

iv. *Training on Early-Entry Notification for Workers.* EPA is proposing to add to the worker pesticide safety training points about the minimum age restriction and notification requirements for early-entry work. Workers would learn that entry into a treated area under an REI would be limited to workers 16 years of age or older and what notification requirements must be provided prior to being directed to perform early-entry tasks. EPA expects that providing this information to workers during training would make workers aware of their agricultural employer's obligation to provide information on the protections required when asked to perform early-entry work. EPA believes that workers should be made aware of employer obligations in their training so they will understand the significance of (and, if they fail to receive it, notice the absence of) the information employers would be required to provide. For a complete discussion of the proposed amendments to the early-entry requirements, see Unit XII. The proposed regulatory text concerning early-entry notification and minimum age content of worker and handler pesticide safety training appears in §§ 170.101(c)(3)(iii) and 170.201(c)(3)(v) of the proposed rule.

v. *Handler Responsibilities.* EPA proposes that a handler be required to cease application if the handler observes a person other than another trained and properly equipped handler in the area under treatment or associated entry-restricted area. EPA believes that either the handler would have prior knowledge that another handler would be in the area during treatment, or would cease application until he or she

could verify whether the person(s) in the treated area met the standard as a trained and properly equipped handler. This new requirement would impose additional responsibility on handlers. [See Unit XI.] Therefore, EPA proposes to add to the handler training requirements a point on this specific handler responsibility.

The proposed regulatory text concerning the cessation of application content of handler pesticide safety training appears in § 170.201(c)(3)(i) of the proposed rule.

vi. *Respirator Fit-Testing and Medical Evaluation for Handlers.* Unit XVI.E. discusses EPA's proposal to adopt the OSHA standard (29 CFR part 1910) for respirator use. The OSHA standard requires employers and users to take steps to ensure respirators are used safely, including fit testing the handler's respirator, conducting medical evaluation, and training handlers on proper respirator use.

EPA proposes to require that handler training inform handlers of the new obligations of handler employers regarding proper respirator use. Handler training content is proposed to inform handlers that their employer must ensure they have received respirator fit-testing, training and medical evaluation if they are required to wear a respirator; only those handlers who would use a respirator would need to receive the full OSHA training on respirators. EPA expects this change would inform handlers of the new requirements for respirator use and their importance.

The proposed regulatory text concerning adding to the training the employer's responsibility to provide handlers using respirators with respirator training, fit-testing, and medical evaluation appears in § 170.201(c)(3)(iii) of the proposed rule.

5. *Costs.* The proposed expansions to training content would expand worker training from approximately 30 minutes to 45 minutes, and handler training from 45 minutes to 60 minutes. The Agency believes that the expanded training is necessary for workers and handlers to better protect themselves.

EPA estimates the cost of expanding pesticide safety training for workers would be \$4.3 million annually or about \$11 per agricultural establishment per year. The cost to expand pesticide safety training for handlers would be \$660,000 annually, or about \$3 per agricultural establishment and \$15 per commercial pesticide handling establishment per year. For a complete discussion of the costs of the proposals and alternatives, see the "Economic Analysis of Proposed Revisions to the Worker Protection

Standard," Chapter 3 Cost Analysis (Ref. 1).

EPA cannot quantify the specific benefits associated with this proposal. However, EPA believes that adding information to worker and handler training would assist workers and handlers to mitigate pesticide exposure to themselves and their families. EPA believes this would result in a lower number of occupation-related pesticide exposures and reduce chronic and developmental effects from pesticide exposure.

6. *Alternate options considered but not proposed.* EPA considered various combinations of the additional training content discussed above. For example, EPA considered simply clarifying the training required under the current rule to be more specific about the information to be covered. EPA also considered not adding the information about employers' responsibilities to provide training to early-entry workers and to handlers using respirators in order to shorten the total duration of a training program; however, given the importance of communicating the additional information to workers and handlers to ensure they have the information necessary to protect themselves and their families from pesticide exposure and the relatively low burden associated with extending the training to cover the content, EPA believes that all of the aforementioned points should be added to the training.

While a shorter training program with fewer points would reduce the cost of the proposal slightly, EPA believes the benefits of providing the proposed additional training topics to workers and handlers are reasonably balanced against the cost.

7. *Request for comment.* EPA specifically requests comment on the following questions:

- Are there any training points listed above that EPA should consider not including in the final proposal? If so, which points and why?

- Are there points that EPA should consider adding to the training content? If so, what points should be added? Please provide a rationale for why the additional content would benefit workers and/or handlers.

#### *F. Retain Audiovisual Presentations as Permissible Methods for Pesticide Safety Training*

1. *Overview.* The existing WPS allows trainers to train workers and handlers using a variety of methods, including an EPA-approved video or DVD. EPA recognizes concerns raised by stakeholders that the video/DVD may not be an adequate training tool when

used as a stand-alone training, but EPA has decided to retain the video as a training method and to add requirements for the trainer to be present throughout the presentation, to answer all questions from those participating in the training, and to ensure that the training is reasonably free of distractions.

2. *Existing WPS regulations.* The WPS requires trainers to present the pesticide safety information “either orally from written materials or audiovisually” (40 CFR 170.130(d)(1) and 170.230(c)(1)). EPA developed a variety of training materials, including training videos covering the pesticide safety points specified in 40 CFR 170.130 and 170.230. A worker training video, “Chasing the Sun Pesticide Safety Training” runs for approximately 30 minutes, and a handler training video, “Pesticide Handlers and the WPS” runs for approximately 50 minutes. Each video covers the current training points and both are available in English and Spanish.

3. *Summary of the issues.* Farmworker organizations have voiced opposition to maintaining a video as the training device (Ref. 35), instead recommending that EPA require employers to provide training using methods with greater interaction to better communicate with workers (Ref. 36). A report from EPA’s National Assessment of the Worker Protection Program recommended that training materials encourage interaction and participation, and be both culturally and linguistically appropriate (Ref. 15).

The Agency recognizes the passive nature of video training and understands that some stakeholders believe that a lack of worker or handler engagement during video training may prevent effective transmission of pesticide safety information. Focus-group research, however, indicates that workers prefer to receive training information in a video or provided orally along with simple drawings on paper as visual aids rather than an oral presentation without any visual aids (Ref. 40). Additionally, research has shown that comprehension of pictorials for safety-related information is significantly enhanced when accompanied by even brief trainer involvement (Ref. 59).

4. *Details of the proposal/rationale.* EPA proposes to continue to allow audiovisual training tools, and to add requirements for the trainer to be present during the training, to answer questions from trainees, and to ensure that the training is reasonably free from distractions. [See Unit VII.D.] Combined with more qualified trainers familiar with the principles of adult education,

EPA expects that use of EPA-approved video would enhance, rather than diminish, comprehension of training objectives.

Based on feedback received directly from the affected community of workers, EPA decided to retain the option for trainers to use audiovisual materials, including but not limited to videos, DVDs, and PowerPoint presentations, as part of the training program. EPA believes that allowing use of audiovisual training tools provides flexibility to trainers and employers by allowing them to be present to monitor the audience, to stimulate discussion, and to answer questions, while the video presents the major concepts of the training. This would help small establishments that conduct infrequent trainings to ensure that the training covers all of the major points. In addition, EPA recognizes that some employers and trainers are more comfortable utilizing audiovisual materials as part of training because widely used videos employ actors portraying workers to communicate the messages, which can be more convincing to the training audience.

The proposed regulatory text requiring the trainer to be present throughout the training for workers and handlers appears in §§ 170.101(c)(1) and 170.201(c)(1), respectively, of the proposed rule.

5. *Costs and benefits.* EPA does not estimate any costs associated with this proposal because it retains an existing provision of the rule.

6. *Alternate options considered but not proposed.* EPA considered eliminating the option for trainers to present material audio visually. Based on the rationales discussed above, EPA believes that allowing trainers to use audiovisual training materials and adding a requirement for the trainer to be present and answer workers and handlers’ questions would adequately address the concerns raised by farmworker groups while allowing trainer’s flexibility in how they communicate with workers and handlers.

7. *Request for comment.* EPA specifically requests comment on the following question:

- Please provide any additional information on the efficacy of different methods used to conduct worker and handler training.

#### *G. Eliminate Exception to Handler Training Requirements*

1. *Overview.* Currently, an employer does not have to provide handler training to a person performing handler tasks if the handler has satisfied the

training requirements under the Certification of Pesticide Applicators Regulation (40 CFR part 171). In order to ensure handlers receive the information necessary to understand WPS protections, EPA proposes to eliminate this exception. EPA expects removal of this exception would ensure all handlers receive complete information to protect themselves in situations specific to WPS establishments.

2. *Existing WPS regulations.* Under 40 CFR 170.230, pesticide handlers currently are required to be trained on pesticide safety. Under 40 CFR 170.230(b)(2), employers may be excepted from the requirement to provide handler training when their handlers have satisfied the training requirements in 40 CFR 171. Part 171, however, does not include specific training requirements relevant to WPS; therefore, the exception allows handlers to qualify without learning about part 170 requirements, such as REIs and the prohibition against spraying when anyone is in the treated area.

3. *Details of the proposal/rationale.* EPA proposes to eliminate the exception for handler training for a handler who has been trained in accordance with the requirements in 40 CFR part 171. In essence, this change would require persons who apply pesticides under the direct supervision of a certified applicator to receive handler training under the WPS. As explained in Unit II, the Agency is considering separate revisions to 40 CFR part 171 that could include specific training requirements for persons applying RUPs under the supervision of a certified applicator. Although the training requirements in these two proposed rules overlap substantially (e.g., safe application techniques, understanding label requirements, safe storage and disposal), the training EPA is considering to require under 40 CFR part 171 does not include specific information on WPS requirements, handler responsibilities, and reducing take-home exposure specifically in agriculture. WPS information is critical for handlers so they can protect themselves, their families, workers, the environment, and bystanders.

4. *Alternative options considered but not proposed.* While EPA considered proposing identical training requirements for both § 170.201 and part 171, many RUP users never apply agricultural pesticides, and would not need to know all the detailed requirements related to the WPS protections, such as warning sign postings and specific handler responsibilities. EPA believes the WPS-

specific information is critical to equip a handler to avoid risk of exposure and illness in agricultural situations. Therefore, the Agency does not intend to impose the same training requirements for noncertified applicators under 40 CFR part 171.

5. *Cost.* EPA believes the cost for this requirement would be negligible. Those employers that intend to provide training under 40 CFR part 171 for their handler employees would be able to provide the proposed WPS handler training and satisfy the requirements of both regulations. The estimated training burden for the two requirements is substantially similar.

6. *Request for comment.* EPA requests feedback on the following:

- Should the proposed training under 40 CFR part 171 include a requirement for expanded training on the WPS?
- How would the benefits to employers from giving a single training that would apply to both WPS handlers and applicators using RUPs under the direct supervision of a certified applicator compare to the costs of requiring agricultural applicator training for all applicators using RUPs under the direct supervision of a certified applicator?

## VIII. Notifications to Workers and Handlers

### A. Posted Notification Timing & Oral Notification

1. *Overview.* The current rule allows employers to provide to workers either oral or posted warnings about areas where an REI (regardless of its length) has been in effect within the last 30 days unless required to provide both oral and posted warnings by the specific pesticide label. For farms, forests, and non-enclosed nurseries (what EPA is proposing to define as “outdoor production”), EPA proposes to require that agricultural employers post warning signs regarding the application of a pesticide that has an REI greater than 48 hours, and proposes to allow the option of oral warning or posted notification for products with REIs of 48 hours or less. For greenhouses and indoor nurseries (what EPA is proposing to define as “enclosed space production”), EPA proposes to require that agricultural employers post warning signs according to the current posted warning requirements when the product applied has an REI greater than 4 hours, and proposes to allow the option of oral or posted notification where the product applied has an REI of 4 hours or less. EPA expects the changes to improve worker protection by increasing workers’ awareness of treated

areas and reminding them to take required precautions and to avoid pesticide exposure, leading to an overall reduction in occupational pesticide-related illnesses.

2. *Existing WPS regulations.* Under 40 CFR 170.120, agricultural employers are required to notify workers about pesticide applications and areas on the agricultural establishment subject to an REI. Notification is required when workers or handlers are on the establishment during application or the REI and will pass within one quarter (1/4) mile of the treated area. In greenhouses and some enclosed nurseries, the agricultural employer must post warning signs. On farms, and in forests and non-enclosed nurseries, the agricultural employer may choose either to post warning signs at the usual points of entry around the treated area or to notify workers orally about applications that will take place on the establishment. Both posted and oral worker notification must inform workers about the location of the application and treated areas under REIs so workers do not enter. In cases where the product labeling requires both written and oral notification of workers, the WPS also requires this “double notification.” Part 170 does not currently require the agricultural employer to keep a record of oral warnings.

3. *Summary of the issues.* In 2006, Farmworker Justice sent a letter to the EPA Administrator, signed by more than 50 different farmworker groups, suggesting revisions for making the WPS more protective. The letter states, “Restricted-entry intervals (REIs) are . . . intended to provide a physical barrier, reducing worker exposure to pesticides when and where the risk is greatest. But workers are not effectively warned to keep out of recently treated areas.” (Ref. 35) Farmworker organizations noted three problems with the current requirement: Workers may not remember REI details that span multiple days, oral warnings may not be adequately provided by the employer in the appropriate language or understood and retained by the worker, and compliance with the oral warning requirement is difficult to verify. Farmworker Justice recommended posting areas treated with a pesticide with an REI longer than 72 hours and requiring recordkeeping of oral notifications to workers.

The Farmworker Justice comments are consistent with research showing that oral instruction alone may not be an effective method of safety instruction.

4. *Details of the proposal/rationale.* For “outdoor production,” EPA

proposes to require that agricultural employers post warning signs where the pesticide to be applied has an REI greater than 48 hours, and to allow the option of oral warning or posted notification for products with an REI of 48 hours or less. For “enclosed space production,” EPA proposes to require posting of warning signs where the product applied has an REI greater than 4 hours, and to allow the option of oral warning or posted notification for products with an REI of 4 hours or less.

EPA believes that under the current rule agricultural employers most commonly opt to provide oral notification to their workers because this is less costly and less burdensome than physically posting treated areas. However, workers may not recall oral notifications when REIs are longer than a few days. Adults remember only about 10% of what they hear, but when the information is seen and heard retention improves to about 50% (Ref. 41). Entry into a treated area during an REI presents an elevated risk of pesticide exposure and EPA believes that ensuring that workers are adequately notified of treated areas in a manner they can recall and understand would result in fewer entries into treated areas during the REI without appropriate protection.

A 2008 SENSOR-Pesticides/California Department of Pesticide Regulation publication cites reentry into pesticide-treated areas prior to the end of the REI as the second leading factor contributing to reports of acute occupational pesticide poisoning cases in agricultural workers (Ref. 11). One reason workers may be entering pesticide-treated areas is their lack of awareness that the area has been treated with a pesticide and is under an REI, which EPA believes can be addressed by more robust posting of treated areas.

Because workers face challenges with literacy and understanding English, EPA believes that reducing the reliance on spoken messages to protect workers and increasing reliance on a clear, graphic, posted warning would better protect workers from the risks of entering a treated area before the REI expires without proper protection. The posted warning signs will serve as physical reminders for workers to avoid areas in which the REI has not expired. During pesticide safety training, workers would be informed of the requirement for agricultural employers to provide oral or posted notification for treated areas, in addition to the current requirement to describe the warning signs, which would increase workers’ likelihood of noticing and complying with entry restriction signs. [See Unit VII.E.]

Treated areas under an REI pose elevated risk of exposure; thus, by keeping workers out, negative health effects of pesticide exposure may be avoided. EPA expects the proposed requirement to increase the number of areas posted on agricultural establishments across the nation, thereby increasing the number of workers who are aware of the REI and avoid entering, and ultimately leading to a reduction of incidence of pesticide illnesses related to unintentional entry into treated areas under an REI.

The protective effect of increased posting requirements through subsequent reduction of pesticide illnesses has been shown in Monterey County, California. In response to a series of worker exposure incidents, Monterey County required agricultural employers to post areas treated with a pesticide with an REI of 24 hours or longer. Since its implementation, this county-specific requirement has led to a significant reduction in pesticide-related illnesses caused by entering a treated area before the expiration of an REI (Ref. 60). California cannot provide specific data on the percent reduction, but a 2001 report from the California Department of Pesticide Regulation noted stakeholder consensus on and support for the requirement, stating: "All participants strongly believe that field posting prevents workers from early reentry. Monterey County participants support their 24-hour posting regulations, even though compliance is costly, because field posting prevents both application and reentry errors" (Ref. 60).

EPA believes the proposed posting requirement may also foster compliance and facilitate enforcement because WPS inspectors could readily view posted warning signs. Inspectors who see workers in a treated area while the posted warning signs were displayed could investigate whether the workers received proper early entry protections.

EPA believes posting all treated areas would be a very effective method for ensuring that workers are notified about what areas are under an REI. However, the burden on employers to post all treated areas subject to an REI would be substantial. To treat an area with an REI of 24 hours, the employer would have to post the area, make the treatment, and retrieve the signs the following day. EPA believes that it is reasonable to expect workers to remember oral warnings related to treated areas under REIs for at most 2 work days, or about 48 hours.

EPA is proposing to allow oral or posted warnings for areas in greenhouses treated with an REI of 4

hours or less. Greenhouse production is much more compact than outdoor production. In a row of planting tables, there could be many applications. EPA recognizes the need for workers to have information about the different risks they face; however, EPA also believes that products with an REI of 4 hours or less generally pose lower risks than products with longer REIs.

As noted, EPA believes that workers can retain warning information provided orally for up to 48 hours. However, greenhouses and other enclosed space production establishments have significantly more applications in a smaller space. EPA believes it is unreasonable to expect workers to remember all of the information provided orally about treated areas when each different planting tray could have different requirements, therefore EPA is proposing a lower threshold for posting notification of treated areas on establishments where multiple applications may be conducted in a small area. EPA believes allowing employers the option to provide oral or posted notification of treated areas for a small subset of pesticides provides employers with flexibility while ensuring workers receive the information necessary to protect themselves.

The proposed regulatory text concerning notification appears in the following sections of the proposed rule: outdoor production—§ 170.109(a)(1)(i) and enclosed space production—§ 170.109(a)(1)(ii).

5. *Costs and benefits.* EPA estimates the cost of requiring employers to post all treated areas with an REI longer than 48 hours would be \$11.1 million annually, or about \$28 per establishment per year. EPA estimates that the proposed changes to notification in greenhouses would save about \$10,000 per year, or \$14 per small greenhouse. For a complete discussion of the costs of the proposals and alternatives, see the "Economic Analysis of Proposed Revisions to the Worker Protection Standard," Chapter 3 Cost Analysis (Ref. 1).

EPA cannot quantify the benefits associated with this specific proposal; however, EPA believes requiring employers to post treated areas under an REI of greater than 48 hours would provide workers with more reliable information on treated areas and when to stay out. EPA expects this would result in fewer workers entering treated areas under an REI and therefore reduce the number of pesticide-related illnesses attributable to this cause.

6. *Alternative options considered but not proposed.*—i. *Alternatives to Posting Timeframe.* EPA considered the Farmworker Justice recommendation for EPA to require posted warning signs in treated areas with REIs greater than 72 hours. This option would provide more protection than the current regulation, but not as much as the proposed option which would require the same posting, but for REIs greater than 48 hours. Given the importance to the worker of understanding which areas are under an REI, EPA believes that posted notification for products with REIs over 72 hours would not adequately warn workers to take precautions. EPA believes that it would be unreasonable to expect a worker to retain the information about what areas were treated and when REIs expire for longer than a two day period. EPA estimates the cost of this proposal would be about \$7.9 million, or \$20 per establishment.

EPA also considered requiring agricultural employers to post warning signs in treated areas with an REI of 24 hours or longer, similar to the requirement in Monterey County, California. EPA recognizes the impact of Monterey's posting requirement in reducing exposure to workers. However, EPA also recognizes the need to balance the protection of workers and burden on agricultural employers and applicators. Monterey County represents a small geographical area. EPA believes that while posting of treated areas with an REI of 24 hours or longer may have been practical in this limited region, it would not be practical as a national requirement. Agricultural employers would have a much higher burden to post every treated area with an REI of 24 hours or longer. EPA believes that workers could retain information on treated areas and REIs for up to two days.

Lastly, EPA considered a requirement to post warning signs in all treated areas under REIs for enclosed space and outdoor production. This option would ensure that workers are aware of the status of every treated area and every area without posting would be safe for workers to enter. Posting of all treated areas where an REI is in effect would send a clear message to workers; however, it would be very difficult for agricultural employers to comply with this requirement. Some products have an REI of 4 hours. In essence, an employer would post signs after application and almost immediately take them down. While this task may be easy in enclosed space production, it may be substantially more burdensome for an agricultural employer engaged in outdoor production.

EPA believes that the proposed option to require posting of all areas of outdoor production treated with a product with an REI greater than 48 hours strikes a balance between the three alternatives considered. EPA recognizes the value of allowing oral warning for worker notification of treated areas with REIs less than 48 hours because this option would provide regulatory flexibility (Ref. 18). EPA believes that workers informed orally can remember that an area has been restricted for entry for up to two days. Posting areas treated with a pesticide product with an REI greater than 48 hours would provide workers visual reminders when the REI is sufficiently long that a worker could have difficulty remembering the specific area treated or length of the REI.

ii. *Recordkeeping of Oral Notification.*

To address concerns that workers may not receive oral notifications of treated areas with REIs shorter than or equal to 48 hours, EPA considered adding a requirement for agricultural employers to retain records of the oral warning provided, signed by the workers who received the notification, for 2 years. The required record would contain:

- Location and description of the entry-restricted area and the treated area;
- Date and time the REI starts and ends;
- Date and time the agricultural employer provided the oral warning;
- Name and signature of the person providing the warning; and
- Name and signature of each employee that received notification.

Requiring the employee's signature on the record would provide incentive to the employer to provide the notification in a manner the worker understands in order to obtain the signature. This requirement would impose significant burden on employers. The time required to comply with the recordkeeping would substantially increase the time currently required to provide the oral notification, based on the additional requirement to explain the notification record and secure the signatures of all workers entering or working within 1/4 mile of the treated area.

In addition, workers may have difficulty reading and understanding the record of the notification because many are not literate in English. Workers may sign the notification record because instructed to do so by the employer, not because they understand the information provided and intent of the record of the oral notification, undermining the intent of the record as confirmation of transfer of information to workers.

EPA estimates the cost to collect and retain records for 2 years would be about \$20 million, or about \$51 per establishment. This cost is substantially higher than the cost for recordkeeping of pesticide safety training because pesticide safety training would only occur once annually per worker whereas records of oral notification could be required almost every time an application occurs. EPA has insufficient data to support a claim that the potential benefits of this alternative, i.e., increased enforceability of the WPS, would outweigh the potential burden on agricultural employers to record and maintain the information.

7. *Request for comment.* EPA specifically requests comment on the following questions:

- For outdoor production, EPA proposes to allow the option of oral warning or posted notification for products with an REI of 48 hours or less. Is there a different time period that would better balance the costs of compliance with the expected risk reduction?
- Will the proposed requirements for posting instead of oral warnings provide sufficient benefit for workers to warrant the additional burden placed on agricultural employers?
- Should EPA require recordkeeping for oral notification? If so, why?

B. *Locations of Warning Sign*

1. *Overview.* Where the existing WPS requires a warning sign to be posted, the signs must be placed where they are visible from all usual points of worker entry to the treated area, the corners of the treated area, or an area affording maximum visibility. EPA proposes to revise the required posting locations to include locations visible from a worker housing area if the housing area is within 100 feet of a treated area for outdoor production.

2. *Existing WPS regulations.* The WPS requires employers to post warning signs (40 CFR 170.120(c)). For applications in farms, forests, and non-enclosed nurseries (what EPA is proposing to define as "outdoor production"), the warning signs must be visible from all usual points of worker entry into the treated area, including, at a minimum, each access road, each border with a labor camp (what EPA is proposing be referred to as a "worker housing area") adjacent to the treated area, and each footpath or other walking route that enters the treated area. For applications in greenhouses and indoor nurseries (what EPA is proposing to define as "enclosed space production"), the warning signs must be visible from all usual points of worker entry to the

treated area, including, each aisle or other walking route that enters the treated area. When there are no usual points of worker entry to the treated area (farm, forest, nursery or greenhouse), the employer must post signs in the corners of the treated area or in any other location offering maximum visibility.

3. *Summary of the issues.* During the National Assessment process, stakeholders, including farmworker groups and healthcare organizations, raised concerns about providing notice to worker housing inhabitants when their location is not directly adjacent to the treated area (Ref. 17). Workers and their families housed near treated areas may have a higher likelihood of exposure to pesticides from inadvertently entering a treated area; the increased detection of pesticides in the body has been found to be associated with housing adjacent to treated areas (Ref. 51) (Ref. 57). In order to mitigate the risk associated with walking into a treated area without adequate notification, stakeholders suggested increasing the posting of areas near worker housing areas (Ref. 35).

4. *Details of the proposal/rationale.* To prevent inadvertent entry into treated areas from onsite worker housing areas, EPA proposes to require a posted warning sign visible from a worker housing area if the housing area is within 100 feet of a treated area for outdoor production in addition to the required current locations. EPA expects this requirement would improve notification of workers and their families in worker housing areas, mitigating exposure resulting from entry into a treated area under an REI. This additional posting location should also improve safety of families living on or near agricultural establishments. Individuals in worker housing areas would be able to see the posted warning signs and avoid entry into the area.

EPA considered the demographics of the worker population when developing this proposal. In recognition of their low literacy and limited English language skills, EPA proposes to use the widely recognized warning sign indicating to stay out of a particular area with text in at least two languages. In addition, workers and their families generally live near agricultural areas but may not be aware of when a nearby area has been treated. Children may play around the home in a treated area, increasing the likelihood of exposure to pesticides. By posting information warning of pesticide applications near worker housing for workers and their families to see, EPA believes that they will be less likely to inadvertently enter a

treated area and thereby will reduce overall risk of exposure to pesticides. This proposal supports EPA's commitments to keeping children safe and to take specific measures to protect vulnerable or disadvantaged communities and populations.

The proposed regulatory text concerning the warning sign appears in § 170.109(b)(3)(ii) of the proposed rule.

5. *Cost.* EPA believes the cost of this proposed expansion of the areas that must be posted would be negligible. For a complete discussion of the costs of the proposals and alternatives, see the "Economic Analysis of Proposed Revisions to the Worker Protection Standard," Chapter 3 Cost Analysis (Ref. 1).

6. *Alternative options considered but not proposed.* EPA considered a recommendation offered by Farmworker Justice to require signs to be posted at the usual points of entry and every 100 feet along the perimeter of the treated area (Ref. 35). Many members of the PPDC workgroup, including state regulatory agencies, cooperative extension services, and the agricultural industry, said that posting warning signs every 100 feet around treated areas under an REI would impose unnecessary burdens on the agricultural employer without resulting in additional protections for workers (Ref. 36). Based on anticipated high burden without demonstrable benefits for this option, EPA decided not to propose increasing posting to every hundred feet around the perimeter.

7. *Request for comment.* EPA specifically requests comment on the following questions:

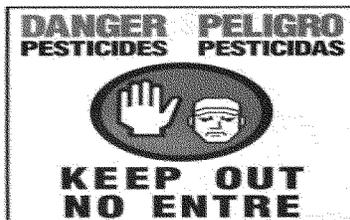
- Are there preferable alternatives to the proposed option for posting locations that EPA has not considered? If so, please describe and provide data to support the alternative.

### C. Warning Sign Content

1. *Overview.* The current WPS warning sign says "Keep Out" and has a picture of a stern-faced man with an upraised hand in a red circle. EPA proposes to require the phrase "Entry Restricted" instead of "Keep Out" on warning signs. EPA also proposes to change the red shape on the sign from a circle to an octagon. EPA believes the text change would more accurately reflect the intended message for workers to be adequately prepared and informed before entering a posted area, and the octagonal shape will provide an effective signal that entry is restricted that does not depend on literacy or language spoken.

2. *Existing WPS regulations.* Under 40 CFR 170.120(c)(1), posted warning signs

must state "Danger, Pesticides" and "Keep Out" in English and Spanish or another language the workers understand and contain the "stern-faced man with the upraised hand" in a red circle as pictured (in black and white) below.



### 3. Summary of the issues.

Stakeholders, including state regulators, educators, and farmworker groups, have noted that the message on the sign can be confusing. Under the WPS, workers can be trained and equipped to enter a treated area during an REI to conduct certain early-entry tasks, such as repairing a clogged irrigation hose. [See Unit XII.B.] Due to these exceptions, including the "Keep Out" text on the warning sign may lead to worker confusion, since workers have been trained to stay out of a treated area posted with the warning sign and also may be directed by their employer to enter the treated area to conduct an appropriate early-entry task.

### 4. Details of the proposal/rationale.

EPA proposes to revise the required text on the warning sign to convey more accurate information to workers. While warning signs would retain the phrase "Danger, Pesticides" text at the top, the message at the bottom of the sign would read "Entry Restricted" instead of "Keep Out". EPA believes this revision to the text more accurately reflects that the sign is a warning to those entering a treated area. "Entry restricted" provides a bold warning for anyone entering a treated area but also allows that some entry may be permitted.

Additionally, EPA plans to replace the current shape of the red circle that contains the stern-faced man with the upraised hand with an octagon. A red octagon is a widely-recognized symbol to stop, and this will provide a stronger signal to workers to be cautious when they encounter the posted warning sign, even if they are unable to comprehend the text. Workers will receive pesticide safety training to reinforce the meaning of the warning signs and help them in determining how to proceed. [See Unit VII.E.] The proposed warning sign is pictured below (in black and white).



EPA specifically considered input received directly from workers in developing this proposal. Workers have indicated that they prefer to get information in simple language and images that communicate the message (Ref. 40). EPA expects that these modifications to the warning sign will provide a clearer, simpler warning to workers. EPA is aware of the importance of conveying clear and simple safety information to worker populations, particularly for workers who may have a low literacy level in English or their native language (Ref. 61, p. 16). NAWs data show that 85% of workers would have difficulty obtaining information from printed materials in any language (Ref. 3, p. 17). The proposed modifications to the warning sign would make it clearer and simpler, which should enhance comprehension by low-literacy adults, and by children of farm workers (Ref. 62).

The proposed regulatory text concerning the content of the warning sign appears in § 170.109(b)(2) of the proposed rule.

5. *Costs and benefits.* EPA estimates the cost of requiring employers to use the revised warning sign would be \$99,000 annually, or an average of \$0.25 per establishment per year. EPA estimates that employers currently purchase new signs every 2 years because weather and outdoor exposure renders the signs unusable after this period. For a complete discussion of the costs of the proposals and alternatives, see the "Economic Analysis of Proposed Revisions to the Worker Protection Standard," Chapter 3 Cost Analysis (Ref. 1).

EPA cannot quantify specific benefits for this proposal. EPA believes that requiring the use of signs that more accurately convey the intended message would lead to better understanding of the sign and its message by workers. This would result in less confusion about what the sign means, which should mean less potential for workers to disregard the sign out of confusion, and thus, fewer workers entering treated areas under an REI which should decrease the number of occupational pesticide-related illnesses.

6. *Alternative options considered but not proposed.* Farmworker Justice

recommended that EPA replace the “stern-faced man with the upraised hand” with the skull and crossbones. They noted that the skull and crossbones is a universally recognized symbol that communicates high risk of danger or death, and suggest that workers would better recognize the risks associated with entering an area posted with the warning sign if it bore this symbol.

EPA considered Farmworker Justice’s recommendation to change the warning sign graphic to the skull and crossbones, but decided against this option. The skull and crossbones symbol is currently used on Toxicity I and II pesticide product labeling and for designation of treated areas for certain extremely hazardous pesticides, for example, fumigants, and using the same symbol in less hazardous conditions would weaken its impact where it is needed most. The skull and crossbones symbol is associated with extreme toxicity or death, which is not always appropriate for every pesticide that has an REI. In contrast, the proposed sign indicates to workers that they should use caution in entering the treated area, but that entry may be permissible with the proper safety equipment. EPA does not want to send workers a mixed message by using the skull and crossbones on the sign. In addition, workers have been trained to recognize the current sign since the rule went into effect. The Agency believes that the “stern-faced man with the upraised hand” is still the most appropriate and well-recognized symbol for workers.

7. *Request for comment.* EPA specifically requests comment on the following questions:

- Should EPA consider replacing the current or proposed general field posting sign with risk-based reentry signs? What would be the costs and benefits of using risk-based signs?

## IX. Hazard Communication

### A. Pesticide-Specific Hazard Communication Materials—General

1. *Overview.* The existing WPS does not require employers to provide workers and handlers with pesticide-specific hazard information on the products they may be exposed to in the workplace. In contrast, OSHA’s Hazard Communication Standard (HCS), which covers most workplaces, requires employers to provide chemical-specific hazard information (i.e., the safety data sheets or SDSs) to workers before they enter an area where they could be exposed and to make the same material available to workers upon request. EPA proposes to require that agricultural and

handler employers provide workers and handlers with access to copies of the SDS and pesticide labeling for products that have been applied on the establishment and to which workers and handlers may be exposed. EPA believes making this information available to workers and handlers may assist them and possibly health care providers in the event of an emergency situation involving pesticide exposure. EPA also believes that providing access to specific hazard information would assist workers and handlers in better protecting themselves and others from pesticide hazards in the workplace.

2. *Existing WPS regulations.* The WPS contains several provisions designed to communicate pesticide hazard information to workers and handlers. By providing workers and handlers with relevant information, these provisions minimize workplace risks associated with pesticide use and mitigate the potential for occupational pesticide exposure. First, the WPS requires employers to train workers and handlers on basic pesticide safety and the general hazards associated with pesticides (40 CFR 170.130 and 170.230). Second, the WPS requires employers to display basic pesticide safety information at a central location on the establishment to remind workers and handlers of safe practices when working with or around pesticides and to provide information about obtaining emergency medical assistance (40 CFR 170.124 and 170.224). Third, the WPS requires employers to provide handlers with access to the pesticide labeling during pesticide handling activities and to ensure that the handler has read the labeling, or been informed in a manner the handler understands, of all labeling requirements related to safe pesticide use (40 CFR 170.232(a)). Lastly, employers must display certain information about pesticide applications made on the establishment whenever workers or handlers will be on the establishment and a pesticide has been applied or an REI has been in effect within the last 30 days (40 CFR 170.122 and 170.222). Although the existing WPS requirements provide workers and handlers with basic safety information on how to protect themselves from general pesticide hazards, and where pesticides have been applied on the establishment, no requirement exists for employers to make pesticide-specific hazard communication materials, such as the SDS and the pesticide labeling, accessible to both workers and handlers.

3. *Summary of the issues.* During the National Assessment meetings, health care, medical, and farmworker organizations urged the Agency to add

pesticide-specific hazard communication provisions to the rule (Ref. 17). They noted that the WPS-required information about pesticide applications that must be displayed at the establishment provides a limited set of information about the pesticides used on the establishment. The information does not provide an explanation of the specific symptoms associated with exposure to a specific product, nor does it provide other use-related information that workers, handlers, and health care providers would benefit from reviewing in the event of a pesticide-related illness or an emergency. To support their request, they noted the disparity between information about chemical hazards required to be provided to workers and handlers covered by the WPS and the information provided to workers in all other industries under the OSHA HCS.

Farmworker organizations suggested that workers and handlers should receive “written information, in a pictorial and low-literacy format, concerning the short- and long-term health effects associated with each pesticide used at their worksite” (Ref. 35, p. 2). Farmworker Justice recommended that growers provide “crop sheets,” i.e., booklets with information on each pesticide used on an establishment, to each worker and handler at the beginning of each work period that involves entry into any treated area. (Crop sheets can take various forms but generally summarize information about the pesticides used on a particular crop, the timing of application, the type of application (for example, air blast or ground boom), and potential symptoms from exposure to the pesticide.) Farmworker Justice suggested that the crop sheets be available in English and Spanish. They believe that information presented in this format would enable workers and handlers to recognize adverse effects and seek medical assistance if they experienced symptoms related to exposure to a specific pesticide (Ref. 35). Other stakeholders have suggested that the detailed health effects information from Safety Data Sheets be provided orally to employees. EPA believes that the benefits of reading this detailed and often lengthy information to workers and handlers are uncertain and such information could confuse workers with complex pesticide hazard information where the level of hazard is different for every situation.

Pesticide safety trainer representatives on the Pesticide Program Dialogue Committee Workgroup suggested that providing simple information on how to prevent potential pesticide exposure is

the most effective way to enable workers and handlers to protect themselves (Ref. 36) (Ref. 39); they did not endorse a specific type of hazard communication information. Health care organizations noted that requiring employers to maintain pesticide labeling or SDS could facilitate quick access to these documents by workers, handlers, or their representatives in the event of an accidental exposure requiring medical attention. These groups noted that health care practitioners can provide more appropriate medical attention if they can review and reference either the label or the SDS. [See Unit XIV.]

#### 4. Details of the proposal/rationale.

EPA proposes to require that agricultural and handler employers make available to workers and handlers SDS and the labeling for pesticides used on the establishment that require WPS compliance. This proposed requirement would be in addition to the existing requirements to notify workers and handlers of the date, time, and location of application, length of REL, and to identify the pesticide product. Employers would be required to maintain the SDSs and the pesticide labeling on the establishment for 2 years from the date of the pesticide application. Workers, handlers or their authorized representatives could request access to the pesticide-specific hazard information during normal business hours. [See Units IX.B. and IX.C. for proposed revisions to employer requirements to provide information about pesticide applications.]

In adopting the Hazard Communication Standard, OSHA said there was evidence to indicate potential for chemical exposure in every type of industry, and that lack of knowledge about those hazardous chemicals puts employees at significant risk of experiencing material impairment of health (52 FR 31852; August 24, 1987) (59 FR 6126; February 9, 1994) (Ref. 63). While the WPS pesticide safety training provides general information about risks associated with pesticide exposure and how a worker or handler can protect himself or herself, the addition of a requirement to provide information about each specific pesticide would provide complete hazard information. The addition of a requirement to provide pesticide-specific hazard information about each pesticide product requiring WPS compliance that is applied on the establishment would provide workers and handlers with more complete information about the chemical hazards they may encounter in the workplace.

Requiring employers to maintain the product labeling and SDSs for products

applied on their establishment would ensure that workers and handlers have access to detailed types of pesticide hazard and emergency response information that would enable them to better protect themselves and respond to emergencies. Additionally, as discussed in Unit XVI., medical personnel are generally able to provide better treatment in the event of a pesticide exposure incident when they have more information about the pesticide product to which the worker or handler may have been exposed. Allowing authorized representatives of workers and handlers to have access to the product labeling and SDSs upon request would assure that the information can be accessed if a worker or handler is incapacitated; in addition, it would help assure that access to this information is not impeded due to employee fears of retaliation. It also increases the likelihood that workers and handlers will receive assistance in reading and understanding these documents in cases where they need such assistance.

EPA believes that imposing this requirement would not be unduly burdensome to employers and would provide workers, handlers, and emergency responders with access to appropriate pesticide-specific hazard information that should meet their needs. The SDS provides succinct information about the known health hazards of the material, providing hazard information that typically is not presented on the product labeling, and it is readily available from pesticide manufacturers and should be provided with the pesticide container at the point of sale. Based on EPA's review of current state pesticide laws and regulations, and labor laws pertaining to agricultural operations using pesticides, 12 states currently require agricultural employers to make SDSs available to employees that may potentially be exposed to pesticides as part of their occupational duties (Ref. 64). Ten of the states implement this requirement under state labor regulations. Florida and California implement it under state pesticide laws.

The use of SDS in hazard communication in all other industries, as well as in agriculture in several states, leads the Agency to believe that it would be the appropriate vehicle to make pesticide-specific hazard information available to workers and handlers.

EPA recognizes that some employers may maintain electronic copies of their records. Under the proposed option, an employer could maintain a copy of the pesticide labeling used for the application and the corresponding SDS

in either paper or electronic form. The employer would need to be able to provide a paper copy of the materials upon request. Employers would not need to update the pesticide labeling on file each time a new version is released; the labeling on file must correspond with the labeling used at the time of application.

The proposed regulatory text concerning the provision of SDSs and pesticide product labeling appears in § 170.11(b) of the proposed rule.

5. *Costs and benefits.* EPA estimates the cost of requiring employers to maintain application information, SDS, and labeling for 2 years would be \$3 million annually, or about \$8 per WPS establishment per year. The cost to obtain the SDS and labeling, as well as the additional information described in unit IX.B., and to make it available would be about \$5.3 million annually, or about \$14 per establishment. For a complete discussion of the costs of the proposals and alternatives, see the "Economic Analysis of Proposed Revisions to the Worker Protection Standard," Chapter 3 Cost Analysis (Ref. 1).

EPA cannot quantify the specific benefits associated with this proposal; however, the Agency believes that workers and handlers would benefit from having access to more complete information about the pesticides to which they may be exposed. The additional information also could be used to assist in more accurately diagnosing and treating pesticide-related illnesses. EPA believes the costs of making more pesticide application information available to workers and handlers are reasonable when compared to the expected benefits associated with the requirement.

6. *Alternative options considered but not proposed.* EPA considered three alternatives to the proposed option: a requirement to make crop sheets available, a requirement to translate SDSs into different languages, and limiting the required pesticide information to the pesticide labeling.

First, the Agency considered requiring employers to provide workers and handlers with a crop sheet in English and Spanish for each pesticide they might encounter, each time they enter the treated area. The Agency is aware of several attempts by state agencies to pilot this use of crop sheets. California and Texas have had requirements for employers to provide crop sheets to those working in pesticide-treated areas. Texas funded the initial development and periodic updating of the crop sheets, but the process became too expensive and labor intensive for the

state to continue. The states reported that the crop sheets were left as litter in the treated area. Texas reported that the redundancy between the requirements under Texas law and the WPS contributed to the decision to discontinue the crop sheet program.

EPA believes that developing crop sheets as recommended by farmworker organizations would be challenging because they suggested simple pictorial descriptions of hazards and symptoms, which would not be accomplished easily with the technical information that is generally included on an SDS. In addition, many agricultural enterprises produce a variety of commodities, increasing the number and complexity of the crop sheets. Agricultural practices differ across regions and according to local conditions, making it difficult to develop a standard set of crop sheets that could be used nationally; a booklet that would be useful for vegetables grown in New England would not be representative of practices in vegetable production in the Southwestern United States. As part of its consideration, the Agency assessed the cost of developing crop sheets based on the assumption that pesticide registrants would develop the crop sheets because they have the most complete knowledge of each pesticide's properties, hazards, and potential health effects. The estimated cost of \$13 million annually does not include copying and distributing the crop sheets to workers and handlers every time they enter a treated area. Copying and distributing the crop sheets would significantly increase the cost of this option.

Based on the experience of states that have attempted to implement crop sheet distribution programs, EPA does not believe that workers and handlers would benefit sufficiently to justify the cost of developing, compiling, translating, and distributing specific crop sheets.

Second, EPA considered requiring pesticide-specific hazard communication materials to be made available in a language that workers and handlers can understand. This would mean translating a copy of the SDS and labeling into each language understood by a worker or handler on the establishment and maintaining copies of the original and translated SDS and labeling, rather than providing the information in English and putting the burden of translation on the worker or handler.

The NAWS estimates that the majority of agricultural workers (83%) are non-English speakers (Ref. 65). Additionally, NAWS data show that 85% of workers "would have difficulty obtaining

information from printed materials in any language" (Ref. 61, p. 16). Additionally, workers and handlers speak a large number of languages and dialects, and the Agency believes it would be impractical to translate and present complex information into so many different languages. This requirement would be complicated further by the fact that some indigenous worker and handler populations do not have a written language. EPA assumes that a majority of requests for the SDS will be made related to a health care incident, which means that either the health care practitioner or a worker advocacy support group would likely receive the information. These groups are more likely to have staff that speak English and are capable of translating the information for the worker or handler if necessary.

All other industries—including the construction, janitorial, and maintenance industries where there are traditionally significant numbers of workers with limited skills reading or understanding English—use SDSs in English to meet OSHA's Hazard Communication Standard requirements to make chemical hazard information available to employees (29 CFR 1910.120(g)). Most readily available sources of pesticide-specific hazard information, such as SDS and pesticide labeling, are in English. EPA did not estimate the cost of translating the SDS and labeling into each language spoken by workers and handlers, but expects that the burden would be extremely high. The burden of producing SDSs in multiple languages would probably fall on registrants, but agricultural and handler employers would bear the burden of obtaining and maintaining a copy of this information in every language spoken by their workers and handlers.

Based on this information, EPA does not believe that the risk reductions expected to result from providing SDSs to workers in their native languages would justify the significant costs of doing so. Medical and legal personnel who would provide assistance to workers in the event of a suspected exposure are proficient in English and could use the SDSs as already developed by the pesticide registrant.

Finally, EPA considered requiring the employer to maintain only labeling for pesticides that require WPS compliance that are applied on their establishments, rather than both the product's labeling and SDS. Pesticide labeling must accompany the product; therefore, employers generally already have a copy of the labeling for products applied on their establishment. When a pesticide is

applied by a commercial applicator or someone other than the agricultural employer, he or she can easily request a copy of the pesticide labeling from the person who made the application. The SDS, on the other hand, does not accompany the product and may require more time to locate, increasing the burden on the agricultural employer. Limiting the requirement to the pesticide labeling could reduce the burden on agricultural employers.

EPA believes that the burden associated with retrieving a pesticide SDS is, however, not substantial because the SDS is readily available online and can be requested from and provided by the pesticide manufacturer and sometimes the pesticide dealer. The SDS contains information necessary for the diagnosis and treatment of certain pesticide-related illnesses. In some instances of pesticide-related illnesses, time is of the essence in determining the course of treatment. In these instances, having the SDS readily available for the worker, handler, and/or treating medical personnel could be essential to ensuring proper treatment. The cost for requiring the employer to collect and make available only the labeling would be about \$1.6 million, or about \$4 per establishment. EPA believes that the additional burden associated with retrieving the SDS for each product is justified by the potential benefit to workers and handlers from having the SDS available in the event of a pesticide-related illness.

7. *Request for comment.* EPA specifically requests comment on the following questions:

- What would be the burden on employers to maintain the SDS and pesticide label for 2 vs. 5 years?
- Do agricultural employers already collect SDSs? If so, how do they obtain them and what burden is associated with retrieving the SDS for one or more products?
- What are the benefits and drawbacks of requiring employers to maintain and provide access to employees and others the proposed pesticide-specific hazard information?
- Are there other approaches for providing workers and handlers with understandable, readily accessible, and relevant information on the symptoms, short-term health effects, and long-term health effects of exposure (including prenatal exposure) to specific pesticides? If so, please describe these approaches, their implementation, and the advantages they provide in comparison to the proposed approach.
- Are there other data on the benefit to workers and handlers from receiving

pesticide-specific information before every entry into a pesticide treated area?

- Does opening access to pesticide-specific information to authorized representatives raise any problems? If so, please describe the potential issues with particularity and provide supporting information where available.

#### *B. Pesticide Application Information—Content and Timing*

1. *Overview.* The existing WPS contains requirements for agricultural employers to record and display information about pesticide applications and to make that information accessible to workers and handlers. However, the existing requirements do not include some key information about pesticide applications that could help workers and handlers better identify treated areas on the establishment and avoid pesticide exposure. EPA proposes to require additional information about pesticide applications to be recorded. EPA also proposes to change the timing of when employers must record the information. EPA believes the additional information would better inform workers and handlers of relevant information about pesticide applications. The more flexible timing requirements for recording application information would reduce burden on employers. [See Unit IX.C. for proposed revisions to requirements for displaying information about pesticide applications.]

2. *Existing WPS regulations.* The existing WPS requires agricultural employers to record and display certain information about pesticide applications at a central location on the establishment. Employers must comply with this requirement when workers or handlers will be on the establishment and an application of a pesticide requiring WPS compliance has been made or an REI has been effect within the last 30 days (40 CFR 170.122 and 170.222). The purpose of this requirement is to communicate information to workers and handlers about the locations of potential pesticide hazards on the establishment, for example, entry restricted areas or areas under an REI. The WPS requires employers to record and display the following information about pesticide applications:

- Location and description of the treated area,
  - Product name,
  - EPA registration number,
  - Active ingredient(s) of the pesticide product,
  - Time and date the pesticide is to be applied, and
  - REI for the pesticide.

The existing WPS requires the application information to be accurate and to be displayed before application takes place if workers are present on the establishment. If no workers or handlers are on the establishment at the time of application, the information must be posted before the first work period when workers or handlers are on the establishment. If warning signs are posted for the treated area before an application, the specific application information for that application must be displayed at the same time or earlier, in accordance with the display requirements. When workers or handlers are present on the establishment, the employer must display the application information for at least 30 days after the end of the REI. Employers may discontinue the information display prior to 30 days after the end of the REI when workers or handlers are no longer on the establishment.

3. *Summary of the issues.* During the National Assessment and SBREFA consultation process, employers and pesticide applicators noted that they had difficulty recording and displaying application information before the application occurs (Ref. 17) (Ref. 18). They cited changes in pesticide application plans, usually to accommodate changing weather conditions, as a primary reason for not being able to accurately record the pesticide application information.

State regulatory agencies noted that the current requirement for providing information about pesticide applications lacked specific information necessary to enable state inspectors to accurately determine the start and end times of the REIs (Ref. 17). As a result of a high-profile pesticide enforcement case and the aforementioned difficulty determining REI start and end times, North Carolina informed EPA that it has taken steps to amend the state pesticide laws. The amended laws would require the end times of pesticide applications to be recorded as part of state pesticide recordkeeping so inspectors could calculate precise REIs (Ref. 66).

4. *Details of the proposal/rationale.* In addition to the pesticide application information currently required to be recorded, the Agency proposes to require agricultural employers to record further specific information about pesticide applications. The proposed information would include the specific crop or site treated, the start and end dates and times of the application, and the end date and duration for the REI. EPA also proposes to revise the requirement for when information must be recorded to allow flexibility for

agricultural employers to record the pesticide application information no later than the end of the day of the application.

An agricultural establishment can grow a variety of crops in specific areas. EPA believes that adding the type of crop site to the record would help workers, handlers, and pesticide inspectors to distinguish the particular treated area to which the information pertains. EPA also believes that including the specific start and end times for the pesticide application, in addition to the date of application, would assist workers, handlers, and inspectors in accurately calculating the date and time the REI ends. The requirement for employers to note the specific date and time when the REI ends would clarify when workers may enter the treated area. The proposed revisions would require agricultural employers to make the pesticide application information (as well as the proposed pesticide-specific hazard information [see Unit IX.A.]) available no later than the end of the day of the pesticide application when workers are on the agricultural establishment that day. By “make available,” the Agency means that the agricultural employer must, at a minimum, have the materials in a place where the workers, upon request, can have access to view them. If workers are not on the establishment on the day of application, the information must be made available at the beginning of the first work period following application. Changing when the application information must be made available allows flexibility if the application schedule changes. Making these changes would allow more realistic timeframes for recording application information and would take into account the realities of fluctuations in application timing. The change also would accommodate the requests to record the end time of the application and timing of REI. Information would be more accurate and the burden of correcting the information would be reduced.

EPA does not believe that allowing the application information to be made available by the end of the day would put workers and handlers at risk because notification of treated areas to workers and handlers must occur before the treatment commences by either oral notification or by the posting of warning signs. Therefore, EPA believes that workers would be protected during application and immediately post-application by the WPS notification provisions.

The proposed regulatory text concerning the timing and content of

pesticide application information required to be displayed appears in § 170.11(b) of the proposed rule.

5. *Costs.* Because the information required in this proposal is linked to the retention of the pesticide labeling and SDS, the costs were calculated together. Therefore, the estimated costs for this proposal are included in the cost discussed in Unit IX.A. For a complete discussion of the costs of the proposals and alternatives, see the “Economic Analysis of Proposed Revisions to the Worker Protection Standard,” Chapter 3 Cost Analysis (Ref. 1).

6. *Request for comment.* EPA specifically requests comment on the following questions:

- Would the additional pesticide application information proposed by EPA impose undue burden on the applicator or the employer?
- Are there benefits or drawbacks to requiring this additional information that EPA has not considered? If so, please describe.

### C. Pesticide Application Information—Location and Accessibility

1. *Overview.* The WPS contains requirements for agricultural employers to record and display information about pesticide applications made on the establishment at a central location on the establishment from the time of the application until 30 days after the REI expires. EPA proposes to replace the current requirement with a requirement for employers to make pesticide application information available on request by a worker, handler, or his or her representative. The proposal would also increase the time employers must maintain the application information on the establishment from 30 days after the REI expires to 2 years. The employer would maintain the pesticide application information in the same location as the SDS and labeling (pesticide-specific hazard communication; see Unit IX.A.). EPA believes this proposal would reduce the overall burden on agricultural employers while still providing workers and handlers with reasonable access to information regarding pesticide applications and pesticide-specific hazard information.

2. *Existing WPS regulations.* As described in Unit IX.B., the WPS requires agricultural employers to record and display certain information about WPS-covered pesticide applications at a central location on the establishment when workers or handlers will be on the establishment and an application of a WPS-covered pesticide has been made or an REI has been in

effect within the past 30 days (40 CFR 170.122 and 170.222).

3. *Summary of the issues.* During the National Assessment meetings, stakeholders, particularly employers, noted the difficulty in maintaining the pesticide application information at a central posting site (Ref. 17). Pesticide application plans frequently change, and keeping a notice board at a central location, which, in some cases, may be a significant distance from the treated area, up to date with those changes presents a challenge to the employer, especially prior to the application.

Agricultural employer stakeholders noted that weathering of the posted information quickly impacts legibility, making it difficult to meet the legibility requirements for the information (Ref. 67). Some states, including Florida, recognize the difficulty facing employers and have developed a portable central location display. Florida’s display includes a laminated metal sign and weatherproof box to contain the necessary WPS information. Florida developed this display to increase compliance, to increase durability of the poster and information, and to provide a solution to the problems noted with maintaining the legibility of information required to be displayed at a central location on large establishments (Ref. 67).

Keeping the information current at the central location has been problematic for agricultural employers, as records of frequent pesticide applications on an establishment with multiple crops can be difficult to maintain accurately during the growing season (Ref. 17). Employers argued that keeping the application information at a central location essentially requires them to maintain two copies of pesticide application records because they cannot rely on the WPS central posting site to be the only copy of application records, imposing a double recordkeeping burden. Keeping two separate sets of application information records with the same information on a busy establishment can be difficult.

4. *Details of the proposal/rationale.* EPA proposes to require the employer to maintain pesticide application information and make it accessible to workers, handlers, or authorized representatives of workers or handlers upon request, and to eliminate the requirement for agricultural employers to display the pesticide application information at a central location. The proposed requirement does not specify a particular location on the establishment where the employer must store records, but does require that pesticide application records must be

maintained on the establishment and must be made available upon request to workers, handlers, or their representative during normal business hours. The application information must be maintained in addition to the pesticide-specific hazard information. [See Unit IX.A.]

The requirement for display of pesticide application information at a central posting site has been the most frequently cited area for non-compliance and violations. Between 2006 and 2008, there was an annual average of 770 WPS violations related to central posting reported by states to EPA’s Office of Enforcement and Compliance Assurance (Ref. 68) (Ref. 69) (Ref. 70). EPA has concerns about the difficulties expressed by stakeholders such as regulators and agricultural employers in maintaining this information at the central posting area, and it is reflected in the violation records. EPA has concerns about the usefulness of the central display to workers and handlers, especially on large establishments, because the worker or handler may be assigned to work miles from the central display and would not encounter it on a routine basis. Moreover, if the information is not accurate or correctly maintained, workers and handlers could be deprived of receiving accurate information about pesticide applications on the establishments. Rather than continue a requirement that burdens employers without clear benefits to workers and handlers, EPA has decided to revise the requirement related to displaying information about pesticide applications.

The proposed requirement for maintaining and making pesticide application information (and the related pesticide-specific hazard communication information as discussed in Unit IX.A.) available to workers and handlers upon request parallels OSHA’s requirement for employers to provide hazard information. EPA recognizes that OSHA’s HCS has been successfully implemented in all other industries, and that employers covered by the WPS struggle with maintaining the central display according to current requirements. The intent of the requirement is to give the workers and handlers access to accurate and legible pesticide application and hazard information. EPA believes that a requirement that allows employers to keep records in a location other than on display at a central location will significantly reduce burden on the employers without sacrificing the

amount or type of information to which workers or handlers have access.

The proposed regulatory text concerning the accessibility of application information appears in § 170.11(b) of the proposed rule.

5. *Costs and benefits.* EPA estimates the cost of requiring employers to make pesticide application information available upon request and eliminating the requirement for central posting would be \$1.1 million annually, or about \$3 per WPS establishment. This estimated cost does not include any additional copies of the pesticide application information necessary because time and weather render the display illegible. The cost estimate includes an assumption that 25% of workers and handlers would request access to the materials, which EPA recognizes is a conservative estimate and drives the cost of the requirement higher. The anticipated benefits of this proposal were discussed in the section above. For a complete discussion of the costs of the proposals and alternatives, see the “Economic Analysis of Proposed Revisions to the Worker Protection Standard,” Chapter 3 Cost Analysis (Ref. 1).

EPA believes that this proposal would reduce the burden on employers by allowing them to maintain the records in a location that is not subject to weathering and would not substantially increase the burden on workers and handlers seeking this information. EPA believes that most workers do not routinely pass the central posting area because their workplace is at a different part of the establishment. The proposed change would continue to make available at a designated location pesticide application information for workers and handlers.

6. *Alternative options considered but not proposed.* EPA considered requiring that employers post specific pesticide application information on the signs used to post each treated area. Under this option, specific information about the pesticide used, date of application, and REI would be included on the bottom of each warning sign posted around a treated area. [See Unit VIII.C. for a discussion of the proposals related to notifications to workers and handlers.] This option would allow early-entry workers to access information about the specific pesticides used in areas where they may be working at the time they enter the treated area. However, this alternative option would substantially increase the burden associated with posting treated areas because employers would have to copy the pesticide and application information onto each warning sign. In

addition, when treated areas are posted for multiple days, the sign could become weathered and illegible, imposing the additional burden on the grower to update the legibility of the sign or negating the intended protection associated with providing the information at the treated area. This option could also reduce information available to workers and handlers because pesticide application information would not be available when the treated area does not require a posted warning sign.

EPA believes that the proposed options to post a general warning sign at pesticide treated areas [see Unit VIII] and to require the employer to maintain and make accessible pesticide-specific application information balance the need for workers and handlers to have access to pesticide hazard information and the burden on agricultural employers. Therefore, EPA decided not to propose this option.

#### *D. Pesticide Application Information and Pesticide-Specific Hazard Communication Materials—Retention of Records*

1. *Overview.* The current WPS requires employers to maintain information about pesticide applications from the time of application until 30 days after the REI expires. The Agency proposes to require employers to retain the pesticide application and related pesticide-specific hazard communication information for 2 years from the date of the end of the REI for each product applied. EPA believes the extended recordkeeping period would ensure that state, tribal and federal agencies, workers, handlers, and health care workers have access to the information when necessary to investigate a health-related pesticide incident or potentially unlawful pesticide application.

2. *Existing WPS regulations.* The existing WPS requires agricultural employers to display information about pesticide applications from the time of application until 30 days after the REI has expired (40 CFR 170.122(b) and 170.222(b)).

3. *Details of the proposal/rationale.* The Agency proposes to require employers to retain and make available for 2 years from the date of the end of the last applicable REI pesticide application information and related pesticide-specific hazard communication information that includes the SDSs and product labeling for pesticides that require WPS compliance. EPA expects the extended recordkeeping period would ensure that application information is maintained

for a sufficient period of time to allow for follow-up in the event of health problems that might be related to pesticide exposure or for investigation of a suspected pesticide misuse. EPA recognizes that some employers may maintain electronic copies of their application records and other documents such as SDS and pesticide labeling. Under the proposed option, an employer could maintain a copy of the application information, the pesticide labeling used for the application, and the corresponding SDS in either paper or electronic form. The employer would need to be able to provide access to the electronic format of the materials or make available a paper copy of the materials upon request. Employers would need to ensure that the copy of the pesticide label on file is the same as the label for the pesticide product at the time it was applied on the establishment. Employers would not need to update the pesticide labeling or SDS on file each time a new version is released; however, if the product used in a subsequent application bears a different version of the labeling, the employer would need to keep both versions of the labeling on file, in a manner identifying which version was used on which occasion.

EPA believes the current 30-day timeframe for retention of the application information is not adequate for workers or handlers to access the information, especially if there has been a delayed health impact from the exposure. It is possible for latent health effects from a pesticide exposure to occur after the 30-day window, necessitating access to information about the potential source of exposure and the types of pesticides that may have been involved. In 2004 and 2005, farmworker women who had worked in Florida, North Carolina, and New Jersey gave birth to babies with birth defects. In 2006, EPA investigated the incidents and sought information about pesticide exposures several months after the women’s employment ended (Ref. 71). The ability to perform a full investigation into the serious health effects was hampered by the 30-day limit for retention of the WPS-required application information (Ref. 72).

The proposed regulatory text concerning the 2-year recordkeeping requirement appears in § 170.11(b)(2) of the proposed rule.

4. *Costs.* The costs of this proposal were discussed in Unit IX.A. in conjunction with the requirement to retain and make available the SDS and pesticide labeling. For a complete discussion of the costs of the proposals and alternatives, see the “Economic

Analysis of Proposed Revisions to the Worker Protection Standard,” Chapter 3 Cost Analysis (Ref. 1).

5. *Alternative options considered but not proposed.* EPA considered requiring application records and hazard information to be maintained for 5 years. The incremental cost between the 2-year and 5-year period is negligible because the principal costs of recordkeeping occur when the record is created. Several states, including California, have required employers to retain WPS records for 2 years. Based on their experience, 2 years is a sufficient time to allow the state to investigate complaints. Therefore, it is not clear that the increased burden associated with requiring employers to maintain records for 5 years would be justified.

6. *Request for comment.* EPA specifically requests comment on the following questions:

- Should EPA consider a different timeframe for recordkeeping for this requirement? If so, what period and why?
- What burdens would be imposed on agricultural employers as a consequence of the proposed two-year record retention requirement?
- How would the burden of the proposal to maintain application records compare with the current requirement to maintain a central display?

## X. Information Exchange Between Handler and Agricultural Employers

1. *Overview.* The current WPS requires handler and agricultural employers to exchange information about pesticide applications. EPA proposes to add to the existing requirement information about the location of the “entry-restricted areas” and the start and end times of pesticide applications. EPA also proposes to require the handler employer to provide any changes to pesticide application plans to the agricultural employer within 2 hours of the end of the application rather than before the application. Changes to the estimated application end time of less than one hour would not require notification. EPA expects these changes to reduce worker pesticide exposure by providing accurate, timely information about applications to the agricultural employer.

2. *Existing WPS regulations.* When handlers are employed by an employer other than the agricultural employer, the existing WPS requires the agricultural employer to provide the handler employer with information about treated areas on the agricultural establishment, including specific

location and description of any such areas and restrictions on entering those areas (40 CFR 170.124).

The WPS requires handler employers to provide agricultural employers with the following information prior to the pesticide application:

- Location and description of the area to be treated,
- Time and date of application,
- Product name, active ingredient(s), and EPA Registration Number for the product,
- REI,
- Whether posting and/or oral notification are required, and
- Any other product-specific requirements on the product labeling concerning protection of workers or other persons during or after application.

Handler employers are currently required to inform agricultural employers when there will be changes to scheduled pesticide applications, such as to give notice of changes to scheduled pesticide application times, locations, and subsequent REIs, before the application takes place (40 CFR 170.224).

3. *Summary of the issues.* State regulatory agencies participating in the IGW raised concerns over the regulation’s silence regarding handler employers’ responsibilities in the event a scheduled pesticide application changes resulting in the original information no longer being accurate (Ref. 14). IGW members questioned field implementation of the provision because the agricultural employer could send a worker into an area that is believed not to be treated while the handler employer changes the application schedule. As a result, the worker would be at risk of being directly or indirectly exposed to pesticides.

4. *Details of the proposal/rationale.* EPA proposes two additions to the information currently required to be exchanged between agricultural and handler employers: the location of the “entry-restricted area” and the start and end times of the pesticide application. This information should help clarify the current rule and assist with field implementation.

First, EPA proposes to expand the agricultural employer’s required information exchange with the handler employer to include the location of the proposed “entry-restricted area,” which EPA proposes to define as the area surrounding a treated area during pesticide application from which workers or other persons must be excluded during the pesticide application.

Second, to clarify and improve handler employer requirements for providing information to the agricultural employer, EPA proposes to require the handler employer to include the proposed start and estimated end times for the application, which are needed to accurately calculate the REI end date and time. EPA proposes to require the handler employer to provide changes to pesticide application plans to the agricultural employer within 2 hours of the end of the application rather than before the application. Changes to the estimated application end time of less than one hour would not require notification. These changes would allow more flexibility for handler employers by reducing the number of times they would have to communicate with the agricultural employer while maintaining communication of important application and safety information. Currently, the handler employer or handler must inform the agricultural employer of all changes to pesticide application timing before the application takes place. For example, if a rain storm delayed the application, this could mean multiple exchanges of information before the application takes place.

EPA expects these changes would make the required information exchange easier for agricultural and handler employers to understand and follow. Providing more accurate information about the timing of applications and subsequent REI would assist employers in ensuring that workers and handlers are kept out of areas being treated or under an REI unless properly protected. Overall, the proposal should reduce the number of incidents resulting from workers or handlers entering treated areas unaware of an ongoing application or existing REI.

The proposed regulatory text concerning the information exchange between agricultural employers and handlers appears in §§ 170.9(k) and 170.13(i)–(j).

5. *Costs and benefits.* EPA estimates the proposed revisions to the information exchange requirements would have no or negligible cost because they clarify the rule and codify existing guidance. For a complete discussion of the costs of the proposals and alternatives, see the “Economic Analysis of Proposed Revisions to the Worker Protection Standard,” Chapter 3 Cost Analysis (Ref. 1).

6. *Request for comment.* EPA specifically requests comment on the following questions:

- Is it reasonable to require the handler employer to notify the agricultural employer of changes to

scheduled pesticide applications within 2 hours of the end of the application?

- What are the benefits to expanding the information to be exchanged between handler and agricultural employers? Are there any drawbacks?
- Would this impose additional burden on employers? If so, what burden and how could it be reduced?

## **XI. Handler Restrictions**

### *A. Suspend Application*

1. *Overview.* EPA proposes to add a provision to the WPS stating that the handler or applicator must “immediately cease or suspend application if any worker or other person, other than an appropriately trained and equipped handler, is in the treated or entry restricted area.” This statement would help to ensure that handlers understand their responsibility to protect workers from pesticide exposure through direct contact or drift.

2. *Existing WPS regulations.* The current rule requires handlers to “assure that no pesticide is applied so as to contact, either, directly or through drift, any worker or other person, other than an appropriately trained and equipped handler.”

3. *Stakeholder information considered by EPA.* WPS inspectors have informed EPA that the current WPS language does not provide sufficient directive for handlers to stop an application if a person, other than a trained and properly equipped handler, enters the treated area and entry-restricted area during application.

4. *Details of the proposal/rationale.* The proposal would require handlers to cease application if they observe any person other than a trained and properly equipped handler to be present in the treated or entry-restricted area. This clarifies and strengthens the current WPS language which does not currently include a “cease application” statement but does require the handler to assure no pesticide is applied so as to contact a worker. This additional “cease application” statement is an important clarification considering the SENSOR-Pesticides/California Department of Pesticide Regulation publication that cites drift as the leading factor contributing to reports of acute occupational pesticide poisoning cases in agricultural workers (Ref. 11). Further, the Washington State Department of Health’s *Pesticide Incident Reporting and Tracking Review Panel 2009 Annual Report* details an incident involving 54 workers exposed to drift from an aerial application where 47 workers sought medical treatment for multiple health symptoms. The adverse

effects of this incident may have been mitigated if the handler acted to cease application when he saw the workers located in the treated or entry-restricted area (Ref. 73).

The regulatory text concerning the suspension of an application appears in § 170.205(a) through (b) of the proposed rule.

5. *Costs and benefits.* EPA estimates the cost of this proposal would be negligible because it clarifies an existing requirement.

6. *Request for comment.* EPA specifically requests comment on the following questions:

- Will this proposal, in combination with the entry-restricted area requirements proposed in Unit XIV., effectively reduce worker exposure to spray drift? Please provide rationale and data to substantiate your response.
- Are there alternatives to this proposal that would better protect workers and others from spray drift, while reserving the flexibility to use pesticides in agriculture? Please provide rationale and data to support your response.

### *B. Establish Minimum Age of 16 for Handling Pesticides*

1. *Overview.* The current WPS does not establish any age restrictions for handlers. EPA proposes to prohibit persons younger than 16 years of age from handling pesticides, with an exception for handlers working on an establishment owned by an immediate family member. See Unit XVIII.A., for a complete discussion of the immediate family exception. EPA expects this change will result in reduced risks to children and improved competency in handling, resulting in reduced exposure to workers, handlers, bystanders, and the environment.

2. *Existing WPS regulations.* The WPS does not establish a minimum age for handlers.

3. *Summary of the issues.* FLSA establishes a minimum age of 16 years for any person employed in agriculture to handle a pesticide designated as toxicity category I or II. The FLSA’s statutory parental exemption in agricultural employment permits a youth under the age of 16 to perform any work if he or she is employed “by his parent or by a person standing in the place of his parent on a farm owned or operated by such parent or person.” 29 U.S.C. 213(c)(2). The CHPAC recommended that EPA establish a minimum age of 16 for pesticide handlers of any agricultural pesticide, based on a recommendation from NIOSH. (Ref. 74). Handlers, compared to workers, face exposure to pesticides at

higher levels as they mix, load, and apply pesticides (Ref. 75). A report from NIOSH compiles studies that demonstrate “[y]outh are at increased risk of injury from lack of experience. Inexperienced workers are unfamiliar with the requirements of work, are less likely to be trained to recognize hazards, and are commonly unaware of their legal rights on the job. Developmental factors—physical, cognitive, and psychological—may also place them at increased risk.” (Ref. 76)

In addition, during the SBREFA consultation described in Unit IV.B., the SERs recommended establishing a minimum age of 16 under the certification of pesticide applicators rule (40 CFR 171), with an exception to the minimum age on family farms (Ref. 42).

4. *Details of the proposal/rationale.* EPA proposes to prohibit a handler employer from allowing persons younger than 16 years old to perform handling tasks. The minimum age would not apply to handlers that fall under the WPS immediate family exception, i.e., working on a farm owned by an immediate family member. As discussed above, the FLSA already establishes 16 as a minimum age for persons using toxicity category I and II pesticides in agricultural employment. This restriction does not extend protection to all handlers under the WPS. Handlers may use pesticides in any toxicity category, from I to IV. EPA recognizes that some states may have additional requirements, such as requiring parental permission for the employment of children ages 16 and 17 in agricultural operations. EPA seeks to ensure that all adolescent handlers receive equal protection, regardless of the toxicity of the pesticide used.

OSHA asked NIOSH to evaluate the existing Hazardous Order regulations and to make recommendations for strengthening the protections provided by these requirements. Among other things, NIOSH responded with rationale for changing the hazardous order related to pesticide use in agriculture to establish 16 as the minimum age for using all pesticides, not only those pesticides in toxicity categories I and II. The NIOSH report cites data from a study which examined pesticide poisoning among working children. A total of 531 children under the age of 18 years were identified to have acute occupational pesticide-related illness. It was estimated that 62% of the cases were children employed in agricultural production and services. Of the 81% of cases where the EPA acute toxicity category was available, 67% of the illnesses were associated with toxicity category III pesticides, which are not

currently prohibited under the hazardous order (Ref. 76, p. 93).

Aside from any increased risks that children may suffer from pesticide exposures, the Agency recognizes that children generally lack the experience and judgment to avoid or prevent unnecessary exposure. A study conducted by the National Institutes of Health also demonstrates that because their brains are still developing, adolescents may have trouble balancing risk-reward decision-making and goal-oriented decision making (Ref. 77 p. 7). Although adolescents may understand the possible consequences of their actions, they are more likely to make decisions based upon their initial emotional responses, which will often lead them to make suboptimal choices (Ref. 77, p. 7). Additionally, younger persons are less likely to be aware of their rights and how to recognize hazards in the workplace (Ref. 76).

The proposed age restriction would include a requirement for the handler employer to record the training and the birth date of all persons trained. It would be possible for someone under 16 years old to receive handler training; however, the trained individual would not be permitted to perform handling tasks until they turn 16. The proposed age restriction advances the Agency's commitment to protecting children.

EPA recognizes the independence of the family farm and believes that farm family parents are in the best position to make decisions about the types of activities in which their children can safely engage. EPA believes that handlers working on an establishment covered by the immediate family exception would be adequately prepared and supervised by family members. Therefore, the minimum age requirement for handlers would not apply to persons performing handling tasks when covered by the immediate family exemption.

The proposed regulatory text concerning the minimum age of 16 for handlers appears in §§ 170.9(c) and 170.13(c) of the proposed rule. The exception for persons covered by the immediate family exemption is found in § 170.301(a)(1)(i).

5. *Costs.* EPA estimates the cost of requiring handlers to be at least 16 years old would be \$466,000 annually, or about \$2 per agricultural establishment per year. It would impose no cost on commercial pesticide handling establishments. The cost of maintaining records of handlers' birth dates is included in the cost of retaining records for handler training. EPA recognizes that the estimated cost of this proposal is conservative because it does not

reflect state requirements for minimum age that exceed the FLSA. For a complete discussion of the costs of the proposals and alternatives, see the "Economic Analysis of Proposed Revisions to the Worker Protection Standard," Chapter 3 Cost Analysis (Ref. 1).

EPA cannot quantify the benefits associated with this proposal. However, EPA believes this proposal would improve the health of adolescent handlers, as well as other workers and handlers on the establishment and the environment. As discussed above, adolescents' judgment is not fully developed. EPA believes that restricting adolescents' ability to handle pesticides would lead to less exposure potential for the handlers themselves, and less potential for misapplication that could cause negative impacts on other handlers or workers on the establishment, as well as the environment.

6. *Alternative options considered but not proposed.* As an alternative, EPA considered proposing a minimum age of 18 for pesticide handlers, which would also include an exception for persons performing handler tasks on a farm owned by an immediate family member. Handlers must exercise good judgment and responsible behavior to best protect themselves and others as they work with these potentially toxic materials. Research shows the differences in the decision-making of adolescents and adults leads to the conclusion that handlers who are adolescents may take more risks than those who are adults. The Department of Labor has established a general rule, applicable to most industries, except agriculture, that workers must be at least 18 years old to perform hazardous jobs (29 CFR 570.120) (75 FR 28458; May 20, 2010). The use of agricultural pesticides presents demonstrable risks of significant harm to the applicator, the public, and the environment, and these risks are significantly influenced by the user's judgment and decision-making skills. Requiring handlers to be 18 years of age or older would prevent youth under 18 from being exposed while performing handling activities and would reduce risks to other persons and the environment from misapplication owing to users' poor judgment or decision-making skills. This option would harmonize the age requirements for pesticide handlers with the minimum age requirements for workers performing hazardous jobs in other industries. This alternative would also align with society's general trend toward increasing the ages at which persons are eligible to do certain things

that present recognized risks, such as consuming alcohol or becoming a licensed driver.

EPA estimates that requiring handlers to be at least 18 years old would cost about \$3.1 million annually, or \$11 per agricultural establishment and \$320 per commercial pesticide handling establishment per year. EPA proposes to follow the existing framework of the FLSA and DOL's rules to propose a minimum age of 16, based on the existing rules and the higher cost of increasing the minimum age for handlers to 18.

7. *Request for comment.* EPA specifically requests comment on the following questions:

- Are there alternatives that have not been considered that would improve protections for adolescent handlers, either those under 16 or 18 years old, while allowing flexibility for pesticide use for agriculture?
- What would be the impact on state programs of establishing a minimum age of either 16 or 18 for handlers?
- Would establishing a minimum age of 16 for handlers have an impact on state requirements for certified applicators to be a minimum age? If so, please provide data to support this position.
- Would establishing a minimum age of 18 for handlers have an impact on state requirements for certified applicators to be a minimum age? If so, please provide data to support this position.
- Are there additional benefits or burdens with establishing a minimum age of 16 or 18 for handlers? If so, please provide data to support either position.

## **XII. Restrictions for Worker Entry into Treated Areas**

### *A. Establish Minimum Age of 16 for Workers Entering a Treated Area under an REI*

1. *Overview.* The existing WPS does not establish age restrictions for workers entering a treated area under an REI. EPA proposes to prohibit any worker under 16 years old from entering a treated area under an REI. This proposal would include an exemption for persons entering a treated area under an REI covered by the immediate family exemption [see Unit XVIII.A].

2. *Existing WPS regulations.* The WPS establishes conditions for when a worker may enter into a treated area under an REI (40 CFR 170.112). The conditions are related to the type of work performed (often referred to as "early-entry" work) and the length of time the worker may be in the treated area. However, the WPS establishes no

minimum age for a worker sent into a treated area under an REI.

3. *Summary of the issues.* In 2009, Earth Justice petitioned EPA to expand the protections of children in agriculture (Ref. 78 p. 23). The petition referenced several studies suggesting negative health impacts on youth workers less than 18 years of age who had been exposed to pesticides (Ref. 78). These references linked pesticide exposure to childhood leukemia and delayed neurological development in youth (Ref. 78 p. 8). The CHPAC also recognized that “growth and development of many organ systems continues into late adolescence” and recommended that EPA enhance protection for workers in the 16–20 year old age group (Ref. 74 pp. 2–3).

4. *Details of the proposal/rationale.* EPA proposes to prohibit employers from directing workers under 16 years old to enter a treated area to perform early-entry activities while an REI is in effect. This prohibition would not apply to persons entering a treated area to perform early-entry activities while an REI is in effect on a farm owned by an immediate family member. To verify compliance with this requirement, EPA also proposes to require the agricultural employer to keep a record of the birth date of each worker trained. [See Unit VII.A.] While EPA believes that the proposed protections required for entry into a treated area during an REI would mitigate risks to the general worker population, concerns remain for children. Children may be more susceptible to pesticides because their systems are developing, so a level of exposure considered safe for an adult may not be safe for a child (Ref. 79 p. 51). See discussion in Unit XI.B.

Due to workers’ low income, farmworker families may face more pressure to have children working in pesticide treated areas. EPA has particular concern for children working in a pesticide-treated area before the REI expires. As discussed earlier, the potential risk for pesticide exposure is elevated when a treated area is under an REI. EPA considered this elevated risk in combination with children’s potentially greater susceptibility to pesticide exposure and developing decision-making capabilities, as well as the demographics of workers when developing this proposal. EPA believes this proposal is necessary to prevent unreasonable risks to children, taking into account the economic needs of farm worker families.

As discussed above, protections already exist under the FLSA for persons under 16 years old working with pesticides in agriculture.

Extending these protections to those who enter a treated area during an REI could mitigate the potential effects of elevated pesticide exposure to children under 16 while their systems are still developing.

EPA recognizes that farm family parents are in the best position to make decisions about the types of activities in which their children can safely engage. EPA believes that persons performing early-entry tasks who are on an establishment covered by the immediate family exception would be adequately prepared and supervised by family members. Therefore, the minimum age requirement for early-entry workers would not apply to persons performing early-entry tasks when covered by the WPS immediate family exemption.

The proposed regulatory text concerning a minimum age of 16 for entering a treated area under an REI appears in § 170.303 of the proposed rule. The exception for persons covered by the immediate family exemption is found in § 170.301(a)(1)(i).

5. *Costs/Benefits.* EPA estimates the cost of requiring early-entry workers to be at least 16 years old would be \$156,000 annually, or less than \$1 per WPS establishment per year. For a complete discussion of the costs of the proposals and alternatives, see the “Economic Analysis of Proposed Revisions to the Worker Protection Standard,” Chapter 3 Cost Analysis (Ref. 1).

EPA cannot quantify the benefits associated with this proposal; however, EPA is committed to protecting the health of children. EPA believes that imposing this requirement would reduce the number of children who suffer occupational pesticide-related illnesses, as well as the chronic and developmental effects that may be associated with children’s exposure to pesticides.

6. *Alternative options considered but not proposed.* EPA considered a minimum age of 18 for workers to enter treated areas under an REI, with an exception for persons covered by the immediate family exception. Studies show that children’s systems continue developing until they reach adulthood, increasing the potential for adverse outcomes from their exposure, as compared to adults. Additionally, data show children’s maturity and comprehension are still developing (Ref. 77 p. 2). Early entry workers are exposed to pesticides before the REI has expired, meaning there may be higher levels of residues and more potential for exposure and negative health impacts. Early entry workers must use PPE properly and comply with additional

measures to ensure they are protected from the higher potential risks. Adolescents may be less likely to comply with these measures and more likely to take risks that put their health at risk because their maturity and comprehension of risk are still developing.

EPA estimates the cost of this option would be about \$723,000 annually, or about \$2 per agricultural establishment. EPA does not have data to indicate that the anticipated additional protection for children support increased costs of the higher minimum age.

7. *Request for comment.* EPA specifically requests comment on the following question:

- Are there other ways EPA could protect children less than 16 years old from pesticide risks associated with entry into a treated area during an REI? If so, please describe.
- What would be the impact on state programs of establishing a minimum age for early entry workers?
- Would establishing a minimum age of 16 or 18 for early entry workers have an adverse impact on state requirements for certified applicators to be a minimum age, generally 16 or 18?
- Are there additional benefits or burdens with establishing a minimum age of 16? If so, please provide data to support this position.
- Are there additional benefits or burdens associated with establishing a minimum age of 18? If so, please provide data to support this position.

#### *B. Requirements for Entry During an REI*

1. *Overview.* The WPS establishes specific exceptions to the prohibition on sending workers into a treated area while an REI is in effect. Workers who enter pesticide-treated areas during an REI (known as “early-entry workers”) without adequate protection may face an elevated risk from pesticide exposure. EPA proposes to require employers (1) to inform workers sent into a treated area while the REI is in effect of the specific exception under which they would enter, (2) to describe the tasks permitted and any limitations required under that exception, and (3) to explain the personal protective equipment required by the labeling. EPA also proposes to require the employer to create a record of the oral notification, to obtain the signature of each early-entry worker acknowledging the oral notification prior to the early entry, and to maintain the record for 2 years.

2. *Existing WPS regulations.* The WPS prohibits employers from directing workers to enter a treated area where an REI is in effect except under specific

early entry exceptions (40 CFR 170.112(a)). Recognizing some circumstances in which there may be a need to have work performed in a treated area during the REI, EPA established exceptions to the general prohibition for “no-contact,” “short-term,” and “agricultural emergency activities” (40 CFR 170.112). EPA later established two administrative exceptions that are not in 40 CFR part 170, for “limited contact” and irrigation activities (60 FR 21955; May 3, 1995) (60 FR 21960; May 3, 1995). Each exception requires specific protective measures or limitations on work to protect early-entry workers from unreasonable adverse effects from pesticide exposure. [For a complete discussion of the exceptions and proposed revisions, see Unit XII.D.] The WPS requires employers to provide workers with PPE, to assure that early-entry workers follow precautions listed on the label, and to provide water and decontamination supplies nearby for when the worker exits the treated area.

3. *Summary of the issues.* Farmworker Justice suggested that workers may not recognize the elevated risk from early entry or understand the requirements of the exceptions, and therefore may fail to appreciate the particular importance of complying with the terms of the early-entry exception. Farmworker Justice recommended that workers receive information about the health effects associated with the pesticides they may encounter while working (Ref. 35 p. 7).

4. *Details of the proposal/rationale.* In addition to what the WPS currently requires, EPA proposes to require that agricultural employers:

- Provide oral notification to early-entry workers prior to each entry into an area under an REI;
- Provide information (in addition to the current requirement to follow product labeling instruction) about the pesticide application, the specific task to be performed, and the amount of time that the worker is allowed to remain in the treated area;
- Collect written acknowledgement of receipt of the oral notification, including the date of birth, printed name and signature of each worker, prior to his or her entry; and
- Retain for 2 years the worker-signed record of this notification.

When entering a treated area during an REI, the worker faces risk of exposure to pesticides at concentrations with the potential for adverse health effects that are of specific concern. Evaluation of incident reports has demonstrated that workers who enter a treated area prior to the expiration of the REI are more adversely affected than those workers

who enter the treated area after the REI has expired, suffering from respiratory issues, rashes, and other illness (Ref. 11). Results from a recent SENSOR-Pesticides/California Department of Pesticide Regulation analysis of the most common factors contributing to incidents of pesticide poisoning indicate that “early reentry into a recently treated area” was the second most common factor (Ref. 11). The report cites early reentry as contributing to 17% (336) of all acute pesticide poisoning cases for which a cause was identified in the agricultural industry between 1998 and 2005 (Ref. 11, p. 891).

EPA expects the proposed requirements to provide early-entry workers information about the pesticide application, the specific task to be performed, and the amount of time that the worker is allowed to remain in the treated area, and to obtain the early-entry worker’s signature to increase the likelihood of those workers understanding and following the applicable risk mitigation measures and assure that workers have information about what early-entry activities they performed in the event they suffer a pesticide-related illness. Sending a worker into a treated area under an REI to perform specific tasks with the appropriate knowledge and equipment to protect him or herself decreases the likelihood that the worker would experience pesticide poisoning. Further, the proposed requirement to create and maintain a record to verify the oral notification would serve as a tool for inspectors to verify rule compliance.

This proposal would work in concert with two other proposed changes: requiring posting of treated areas [Unit VIII.] and enhancing the content of worker training [Unit VII.]. The Agency believes that training early-entry workers on what they should expect if the agricultural employer requests that they enter a treated area under an REI, as well as posting all areas treated with a product that has an REI of 48 hours or longer, would better prepare workers to protect themselves while performing early-entry tasks.

EPA is proposing to require recordkeeping of oral notification to early-entry workers, but not recordkeeping of oral notification of treated areas (discussed above in Unit VIII.A.6.ii.) based on the elevated risks facing early-entry workers and importance of ensuring they have the information necessary to protect themselves during the higher-risk early entry activities. Workers receiving general notification of treated areas do not need to know how long they may be in the area, types of exposure, or how

best to protect themselves; they are instructed to keep out of specific treated areas. EPA believes that the burden on employers to create and maintain a record of the early-entry worker notification is balanced by the increased flexibility to employers, while ensuring sufficient protection for early-entry workers. As discussed above, EPA does not believe that the cost of creating and maintaining records of oral notification of pesticide-treated areas is outweighed by the potential benefits.

Additionally, the cost of creating and maintaining a record of oral notification for early entry workers is substantially lower than the cost of creating and maintaining a record of oral notification when the REI has expired.

The proposed regulatory text concerning early-entry requirements appears in § 170.305 of the proposed rule.

5. *Costs and benefits.* EPA estimates the cost of requiring employers to provide early-entry workers with oral notification would be about \$700,000 annually, or about \$2 per establishment per year.

EPA estimates the cost of requiring employers to maintain records of oral notifications provided to early-entry workers would be \$470,000 annually, or about \$1 per establishment per year.

For a complete discussion of the costs of the proposals and alternatives, see the “Economic Analysis of Proposed Revisions to the Worker Protection Standard,” Chapter 3 Cost Analysis (Ref. 1).

EPA cannot quantify the benefits associated with this proposal; however, EPA recognizes that entering a treated area during an REI is one of the primary identified sources of pesticide-related illness in workers. EPA believes this proposal would provide workers with more information about the risks they may face and how to protect themselves from pesticide exposure, and would ultimately lead to a reduction in the number of pesticide-related illnesses associated with early entry into a pesticide-treated area.

6. *Alternative options considered but not proposed.* Many of the alternative options considered are more fully discussed in other areas of this preamble. EPA considered the option of eliminating early entry for no-contact, limited contact, irrigation and short-term exceptions as recommended by worker advocacy organizations. [See Unit XII.D.] EPA also considered requiring agricultural employers to distribute pesticide hazard information to each worker upon entry into any treated area. [See Unit IX.A.]

EPA also considered requiring employers to keep records of the conditions of the exception claimed and notification to workers for 5 years instead of the proposed requirement of 2 years. Because most of the costs associated with recordkeeping are incurred upon creating the record, the incremental costs of retaining the records for a longer period are minimal. However, as discussed earlier, it is not clear that the potential benefits associated with retaining the records for a longer period justify the increased cost and burden on employers.

7. *Request for comment.* EPA specifically requests comment on the following questions:

- Is there other information related to entry into a treated area under an REI that EPA should require employers to document? If so, what information and why?
- Are there other ways EPA could verify that workers received notification and the proper equipment to work in a treated area under an REI without the proposed recordkeeping?

### C. Clarify Requirement for Decontamination Supplies for Workers Entering a Treated Area Under an REI

1. *Overview.* The existing WPS requires employers to provide early-entry workers with “a sufficient amount of water” for decontamination. EPA proposes to clarify the meaning of “a sufficient amount of water” for decontamination of workers entering a treated area under an REI. EPA expects that the clarification would facilitate compliance and that adequate decontamination supplies would reduce the likelihood that workers would suffer an illness from the exposure during early-entry work and would protect worker families from take-home exposure.

2. *Existing WPS regulations.* The WPS requires the agricultural employers to provide “soap, clean towels, and a sufficient amount of water so that the workers may wash thoroughly” when workers perform tasks in a treated area while the REI is in effect (40 CFR 170.112(d)).

3. *Summary of the issues.* Farmworker Justice and state regulators have requested that EPA clarify what amount of water would be sufficient.

4. *Details of the proposal/rationale.* EPA proposes to require that agricultural employers provide at least 3 gallons of water per worker for decontamination after a worker has performed tasks in a treated area under an REI. This amount is based on the 1993 EPA guidance document, “How to Comply with the Worker Protection

Standard for Agricultural Pesticides: What Employers Need to Know.” (Ref. 80 p. 25) EPA believes this amount of water would be sufficient for a worker to wash exposed areas. This is the same amount of water being proposed for handler decontamination. [See Unit XIV.A.]

The proposed regulatory text concerning the required amount of water appears in § 170.305(j) of the proposed rule.

5. *Costs/Benefits.* EPA estimates the cost of the proposal to increase the quantity of water available for early-entry worker decontamination would be \$2,500 annually, or less than \$0.01 per WPS establishment per year. For a complete discussion of the costs of the proposals and alternatives, see the “Economic Analysis of Proposed Revisions to the Worker Protection Standard,” Chapter 3 Cost Analysis (Ref. 1).

EPA expects that adequate decontamination supplies would reduce instances where workers fail to wash after performing WPS tasks owing to insufficient supplies, thereby reducing the likelihood that workers would suffer an illness from the exposure during early-entry work and would protect worker families from take-home exposure. EPA also expects that the clarification would make it easier for employers to understand and comply with the WPS decontamination supply requirements.

6. *Request for comment.* EPA specifically requests comment on the following questions:

- Is 3 gallons for decontamination a reasonable amount of water for an early-entry worker who has been exposed to a pesticide? If not, why?
- What amount of water would be reasonable, or what other alternative is there?

### D. Exception to the General Prohibition Against Sending Workers Into a Treated Area Under an REI

1. *Overview.* The existing WPS includes specific exceptions to the employer prohibition against sending workers into a treated area during an REI. EPA proposes to clarify these exceptions to make them more understandable and easier for employers to follow.

2. *Existing WPS regulations.* The WPS prohibits employers from directing workers into a treated area while an REI is in effect (40 CFR 170.112(a)). The regulation also provides for exceptions to the entry restrictions so that certain activities considered critical to successful agricultural production can take place during an REI. The

exceptions to the entry restrictions allow entry into an area under an REI for activities with no-contact, certain short-term activities, and certain activities associated with agricultural emergencies (40 CFR 170.112(b)–(d)). EPA added the exception provisions to the 1992 WPS to minimize potential adverse impacts on agriculture that could occur because of the restrictions on entering treated areas while an REI is in effect. The exceptions allow early-entry activities only under very limited circumstances. The exception provisions include specific requirements and limitations intended to ensure that workers are adequately protected during any allowed early-entry activities.

In addition, the WPS includes an administrative process to allow additional exceptions to the prohibition on early entry for activities critical to agricultural production that were not addressed in the existing exceptions (40 CFR 170.112(e)). In 1995, the Agency granted administrative exceptions for irrigation and limited contact activities. The rationale for and terms and conditions of these administrative exceptions were included in the final **Federal Register** notice announcing the Agency’s approval of the request for the exceptions (60 FR 21955; May 3, 1995) (60 FR 21960; May 3, 1995).

3. *Summary of the issues.* In general, USDA has indicated support for revising the regulation to clarify the requirements of the exception to enable worker reentry without compromising human health. USDA said growers need maximum flexibility to direct workers to reenter treated areas to perform tasks in a timely manner (Ref. 81).

EPA received a letter signed by a broad coalition of farmworker organizations that opposed the inclusion of any exception to the prohibition on directing workers to enter a treated area while an REI is in effect (Ref. 35). They suggested that REIs should protect post-application workers by reducing their exposure to pesticides at a time when the residues are hazardous. Farmworker advocates noted that creating exceptions to the REIs substantially weakens this protection and increases the risk of injury to the workers, even if additional personal protective equipment is required and provided. Farmworker organizations asserted that many worker injuries occurred because workers were put back in the treated area before the REI had expired. They also indicated a belief that required PPE is often not worn because it interferes with workers’ ability to perform their tasks in an efficient manner.

4. *Details of the proposal/rationale.* EPA agrees that some of the current exception provisions contain vague or unenforceable language that may be confusing to agricultural employers and the regulated community. Unclear regulations present compliance challenges for employers and, if misunderstood, may place early-entry workers at risk of being sent into treated areas to engage in tasks that should not take place during the REI.

Detailed descriptions of the proposed revisions and specifically related stakeholder input are discussed below.

i. *Clarify conditions of “No Contact” exception.*

a. *Existing WPS regulations.* The no-contact exception permits entry into a treated area under an REI for activities for which workers will have no contact with treated surfaces (40 CFR 170.112(b)). Examples of acceptable “no contact” activities include the following:

- Worker in an open-cab vehicle in a treated area where the plants and other treated surfaces cannot brush against the worker and cannot drop or drip pesticides onto the worker;
- After a pesticide is correctly incorporated or injected into the soil, the worker is performing tasks that do not involve touching or disrupting the soil surface other than walking with shoes on the soil surface; and
- Worker in an enclosed cab vehicle in a treated area.

b. *Summary of the issues.* States and employers requested clarification from EPA on the conditions of the no-contact exception and what tasks constituted no-contact activities. Specifically, they suggested that wearing PPE to prevent contact with pesticide treated surfaces does not constitute no-contact early entry.

A coalition of farmworker advocate groups requested that EPA impose greater restrictions on the no-contact exception (Ref. 35).

c. *Details of the proposal/rationale.* The Agency proposes to clarify that activities reasonably expected to involve contact with treated surfaces cannot be no-contact activities, even if the contact is limited or mediated through the use of personal protective equipment. Wearing PPE reduces exposure to pesticide residues, but it cannot be relied upon to reduce exposure to the same level expected of a no-contact activity. Even with PPE, workers engaged in activities involving treated surfaces still face a risk of greater exposure than they would if they did not contact treated surfaces.

The proposed regulatory text concerning the no-contact exception

appears in § 170.303(a) of the proposed rule.

d. *Costs and benefits.* EPA estimates there are no costs associated with this proposal since it is merely a clarification of the existing regulations.

ii. *Limit “agricultural emergency” exception.*

a. *Existing WPS regulations.* The current WPS permits early entry into a treated area during an REI in the event of an agricultural emergency. The emergency exception provision applies only where a state, tribal or federal agency having jurisdiction has declared the existence of circumstances that could cause an agricultural emergency to exist on the establishment. The existing exception allows early entry for an unlimited duration and does not prohibit hand labor activities. The agricultural emergency exception requires the employer to provide required PPE to all workers who engage in early entry activities.

b. *Summary of the issues.* State regulators, farmworker groups, and agricultural employers raised several concerns about the exception for agricultural emergencies (Ref. 82, p. 6). The primary issues concerned what constitutes an agricultural emergency, whether the state or tribe’s lead agency for pesticide regulation is the only agency that can declare an agricultural emergency, which types of other agencies may be authorized to declare an agricultural emergency, and whether the lead agency may declare in advance conditions that would constitute an agricultural emergency.

EPA has provided guidance through the IGW policy document that any federal agency or state or tribal government may declare an agricultural emergency (Ref. 14). For example, the National Oceanic and Atmospheric Administration (NOAA) may do so indirectly by declaring that specific weather conditions could constitute an agricultural emergency. However, there are no recordkeeping or reporting requirements, so EPA has no data available regarding the number of times agricultural emergencies have been declared by states, tribes, or federal agencies.

A coalition of farmworker advocate groups requested that EPA impose greater restrictions on the agricultural emergency exception (Ref. 35).

c. *Details of the proposal/rationale.* EPA proposes to limit the organizations that can declare an agricultural emergency and to limit the time a worker can be in the treated area in an agricultural emergency exception when a product requiring double notification has been used.

Since issuing the IGW policy document, the Agency has come to doubt that agencies other than EPA and state or tribal pesticide regulatory agencies have the background and technical expertise to adequately assess the potential risks and benefits of early entry into pesticide treated areas during REIs, or that they fully understand FIFRA’s statutory requirements to balance risks and benefits when establishing conditions for workers to enter treated areas while an REI is in effect. EPA therefore proposes to narrow the agricultural emergency exception so that only EPA, a state department of agriculture, or the state or tribal lead agency may declare an agricultural emergency under the WPS to allow early entry into pesticide treated areas during the REI. The Agency has particular concerns about the potential risks to workers entering areas under the agricultural emergency exception when the areas have been treated with a pesticide requiring double notification (i.e., products whose labeling requires both oral and posted notification of pesticide treatments because it presents a heightened risk to worker health). This is especially the case when, as noted above, the current agricultural emergency exception provides no time limits for worker entry and permits hand labor. EPA believes that, when such high toxicity double-notification products are used, the potential pesticide exposure and risk to workers engaging in hand labor activities during an REI is unreasonable.

EPA therefore proposes to limit the amount of time a worker is permitted to spend in an area treated with a double-notification product to no more than 4 hours in any 24-hour period during an agricultural emergency exception situation. EPA believes this change would preserve the needed flexibility for agriculture to address the conditions of the agricultural emergency while offering increased protections for workers potentially exposed to the most highly toxic pesticides. Even though an individual worker is limited to 4 hours of early entry under such a situation, an agricultural employer could rotate workers after each 4-hour interval.

The revised text for the agricultural emergency exception appears in § 170.303(c) of the proposed rule.

d. *Costs and benefits.* EPA estimates the cost for limiting the organizations that can declare an emergency and establishing a 4-hour time limit (in a 24-hour period) for entry into an area treated with a double-notification chemical under an agricultural emergency would be negligible.

e. *Request for comment.* EPA specifically requests comment on the following questions:

- Are there reasons EPA should consider eliminating the agricultural emergency exception?
- What benefits and drawbacks are associated with limiting the agencies that can declare an agricultural emergency?
- Please share any data on the use of the agricultural emergency exception, establishing a time limit, or other restrictions associated with exceptions.
- Should EPA develop guidance on the criteria for declaring an agricultural emergency and/or how a person or organization could request an eligible agency to declare an agricultural emergency?

iii. *Codify “Limited Contact” and “Irrigation” exceptions.*

a. *Existing WPS Regulations.* EPA established two administrative exceptions to the WPS prohibition against entry into treated areas during an REI for “limited contact” and “irrigation” activities. (60 FR 21955; May 3, 1995) (60 FR 21960; May 3, 1995) However, these administrative exceptions, including the terms and conditions of the exceptions, do not appear in part 170. The language in the existing administrative exception for irrigation activities states that the task must be unforeseen to meet the criteria for early entry.

b. *Summary of the issues.* Stakeholders, primarily state regulatory agencies, have raised concerns about the use of the term “unforeseen” in the exception (Ref. 36 p. 27). Irrigation is rarely an unforeseen event in most agricultural areas and it must take place to ensure crop survival. During the National Assessment meetings, state regulatory officials and other stakeholders noted that the need to irrigate is almost always foreseen, so the requirement for the need for irrigation to be unforeseen limits the legitimate use of the exception.

A coalition of farmworker organizations recommended that EPA eliminate the irrigation and limited contact exceptions (Ref. 35). Their recommendation was based on coalition members’ belief that EPA underestimated the level of contact workers would have with treated surfaces and the potential for pesticide exposure through contact with treated surfaces.

EPA’s FIFRA Scientific Advisory Panel said that data generated by the Agricultural Reentry Task Force and peer-reviewed by EPA have shown which activities may be classified as no and low contact activities that do not

jeopardize the well-being of workers (Ref. 83).

c. *Details of the proposal/rationale.* EPA proposes to revise part 170 to codify the two current administrative exceptions for “limited contact” and “irrigation” activities. In addition, EPA proposes to remove the term “unforeseen” from the irrigation exception to make the text more accurately reflect field practices. Finally, EPA proposes to prohibit early entry under the limited contact and irrigation exceptions into areas treated with a pesticide requiring double notification (i.e., products whose labeling requires both oral and posted notification of pesticide treatments), owing to the higher potential for risks to workers’ health.

EPA believes that incorporating these exceptions into the rule, rather than having them in separate **Federal Register** notices that employers may not be aware of, would increase the regulated community’s awareness and understanding of the exceptions.

The proposed regulatory text concerning the “limited contact” and the “irrigation” exceptions appear in § 170.303(d) of the proposed rule.

d. *Costs.* EPA estimates there would be no costs associated with this proposal.

iv. *Eliminate provision for exceptions requiring Agency approval.*

a. *Existing WPS regulations.* The WPS permits persons or organizations to request the Agency to grant an administrative exception to entry restrictions specific to certain crops and activities and pesticide products (40 CFR 170.112(e)). This same type of process was used to develop the “limited contact” and “irrigation” exceptions discussed above.

b. *Details of the proposal/rationale.* EPA proposes to eliminate the administrative exception process. When the WPS was first promulgated, REIs for most pesticides subject to the WPS were established generically through the WPS labeling provision in 40 CFR part 156, and the administrative exception process was included in order to provide product-specific REIs. However, as a result of the Agency’s pesticide reregistration efforts under section 4 of FIFRA, REIs are now established for each individual pesticide product through the registration or re-evaluation processes. Through these processes, the specific needs of crop production are considered in setting REIs for specific products and cropping practices. Accordingly, the Agency believes it is more appropriate that such requests for adjusted REIs be addressed through amendments to the registration of each

specific pesticide product than as administrative exceptions to the WPS.

Additionally, by proposing to codify the existing administrative exceptions as permanent exceptions, the Agency believes that the current suite of available exceptions to the entry restrictions would provide agriculture with the needed flexibility to address the range of potential agricultural production problems that would warrant the need for an exception to the current entry restrictions. The Agency has not received any requests for new administrative exceptions in the last 15 years.

There is no proposed regulatory text associated with the removal of this provision.

c. *Costs and benefits.* EPA estimates there would be no costs associated with this proposal.

5. *Request for comment.* EPA specifically requests comment on the following questions:

- Do you have factual information about the current frequency of use of any of the exceptions? If so, please provide it to the Agency.
- What are the benefits and challenges of the proposed amendments to each of the exceptions?
  - Are there other reasonable alternatives that EPA did not consider? If so, please describe and provide a rationale for their consideration.
  - Should EPA consider a different time limit for the agricultural emergency exception? For other exceptions?
  - Are there any drawbacks to adding the irrigation and limited contact exceptions into the rule?
  - For all comments, please provide factual information in support of your assertions.

#### E. *Expansion of Entry-Restricted Areas*

1. *Overview.* The existing WPS establishes entry-restricted areas adjacent to the treated areas (i.e., adjacent to the areas where pesticides are actually applied) only in nurseries and greenhouses. EPA proposes to establish similar entry-restricted areas during applications on farms and in forests. EPA expects this change would result in reduced incidents of pesticide exposure to workers and other persons from unintentional contact during application.

2. *Existing WPS regulations.* The WPS requires agricultural employers to restrict nursery and greenhouse workers and other persons on those establishments from entry-restricted areas, defined as specific areas adjacent to those targeted for pesticide application (40 CFR 170.110). The size of the entry-restricted area depends on

the type of product applied and the application method. For example, if a pesticide is applied as a mist in a nursery, the rule prohibits the employer from directing any worker or other person from entering the area being treated and within 100 feet of the treated area in all directions from the nursery. The entry-restricted area applies only during application and is distinct from the REI, which limits entry into a treated area for a specific period of time after the application ceases.

Entry-restricted areas are also relevant to handlers and handler employers since the WPS prohibits handlers from applying pesticides in a manner that results in contact with workers or other persons (40 CFR 170.210(a)). The handler and the handler employer are responsible for ensuring that the pesticide application does not contact any person, which effectively requires the handler to cease or suspend application if any persons are in areas where contact is possible.

3. *Details of the proposal/rationale.* EPA proposes to apply to farms and forests the entry-restricted area requirements currently applicable to nurseries so that all production applications are subject to similar requirements. The proposed entry-restricted areas for farms and forests would range from the treated area alone to 100 feet beyond the treated area, depending on the type of product applied and the application method. Fumigation is one of the application methods covered by the entry-restricted area requirements. The proposed WPS entry-restricted areas would still be limited by the boundary of the establishment owner's property, as the establishment owner is subject to the current rule. For example, if the WPS requires the entry-restricted area to extend 100 feet in all directions from the treated area, but there is only 50 feet between the treated areas and the boundary of the owner's property, then the property line would be the extent of the entry-restricted area under the WPS. WPS entry-restricted areas are limited by the boundaries of the agricultural establishment to limit the employer's responsibility under the WPS to the people on his or her establishment. The Agency believes that the proposed creation of entry-restricted areas for all farm and forest applications would reduce risk to workers and other persons from pesticide exposure when they may be working in or nearby an area adjacent to an ongoing pesticide application. The proposed revisions would also provide more consistent protection across all establishments covered by the WPS.

The existing part 170 does not require entry-restricted areas beyond the actual treated area for farms and forests. A worker may be assigned to work in an area immediately adjacent to an area being treated with pesticides. Many incidents of drift and off-target application have resulted in reported worker illnesses. A recent study cited off-target drift as the leading cause of reported agricultural worker exposure incidents, with 1,216 individual worker pesticide exposures reported from 1998–2005 (Ref. 11 p. 891).

The proposed changes do not cover applications of soil fumigants or any other pesticides that have buffer zones intended to protect human health included on the product labeling. Where EPA has established entry-restricted areas for a specific pesticide or group of pesticides through labeling, the labeling-specific restrictions supersede the generic requirements of the WPS.

The proposed entry-restricted areas would complement the existing WPS requirement that prohibits handlers from applying pesticides in a way that results in contact with workers or other persons and the proposal that would require handlers performing an application to cease or suspend the application if workers or any persons are in the entry-restricted areas during application. The proposal also works in concert with the prohibition on the agricultural employer allowing or directing any worker or other person, other than an appropriately trained and equipped handler, to enter or remain in the treated area or any applicable entry-restricted area during application.

The proposed regulatory text concerning entry-restricted areas during applications on farms and in forests and outdoor nurseries appears in § 170.105(a) of the proposed rule.

4. *Costs and benefits.* EPA estimates the cost for restricting entry to areas adjacent to an area being treated would be negligible. There may be instances where worker tasks in these adjacent areas must be stopped until the application is complete, but EPA believes employers can generally reassign workers to other tasks for the duration of the pesticide application.

5. *Request for comment.* EPA specifically requests comment on the following questions:

- Is it reasonable for EPA to assume that workers can be reassigned for the duration of the pesticide application?
- Are there any burdens to applying an entry-restricted area on farms and in forests? Are there any other benefits?

### **XIII. Display of Basic Pesticide Safety Information**

#### *A. Location of Basic Pesticide Safety Information Display*

1. *Overview.* The existing WPS requires employers to post a poster displaying basic safety information in a single location on the establishment. EPA proposes to require that the pesticide safety information also be displayed at the decontamination site(s).

2. *Existing WPS regulations.* The WPS requires agricultural and handler employers to display the pesticide safety poster at a central location on the establishment (40 CFR 170.135(d) and 170.235(d)).

3. *Summary of the issues.* Farmworker organizations recommended additional posting locations with the posted warning signs [see Unit VIII.] or at worker changing areas (Ref. 35) (Ref. 74). They noted that having the pesticide safety poster in multiple places where workers are likely to see it increases the chances for workers to absorb the messages and to know how to contact emergency personnel.

4. *Details of the proposal/rationale.* EPA proposes to require that employers display pesticide safety information at decontamination sites in addition to a place on the agricultural establishment where workers and handlers are likely to pass by or congregate and can be readily seen and read. Adding the display of pesticide safety information to decontamination sites improves workers' and handlers' access to the self-protective and decontamination information. EPA believes that providing the pesticide safety information at the decontamination sites will not only remind workers and handlers about self protection but will also ensure that emergency contact information is immediately accessible at each decontamination site. It is likely that an exposed worker or a colleague providing assistance would visit the nearest decontamination site.

Agricultural employers have told EPA that they generally have a set of materials, sometimes on the back of a truck or on a mobile cart, for decontamination. Displaying the pesticide safety information on such an apparatus would not seem to impose significant additional burden. The current WPS requires employers to move the decontamination supplies to locations where workers or handlers are engaged in WPS activities. Once added, the pesticide safety information would move along with the decontamination supplies, imposing minimal additional burden on the employer.

The proposed regulatory text concerning the locations to display pesticide safety information appears in § 170.11(a)(3) of the proposed rule.

5. *Costs and benefits.* EPA estimates the cost of requiring the basic pesticide information display at decontamination sites for workers would be \$2 million, or about \$5 per agricultural establishment per year. EPA estimates the cost of requiring the basic pesticide information display at decontamination sites for handlers would be \$780,000, or about \$2 per agricultural establishment per year. For a complete discussion of the costs of the proposals and alternatives, see the “Economic Analysis of Proposed Revisions to the Worker Protection Standard,” Chapter 3 Cost Analysis (Ref. 1).

EPA cannot quantify the benefits associated with this proposal. However, EPA believes that providing a reminder of basic hygiene principles at places where workers and handlers wash before leaving the treated area to eat and use the bathroom would increase the number of workers and handlers following proper decontamination principles. Emergency response information would have the maximum benefit if it is immediately available where workers and handlers would go for decontamination supplies. EPA believes that displaying pesticide safety information at decontamination sites would reduce the number of occupational pesticide-related illnesses.

6. *Alternative options considered but not proposed.* Farmworker organizations recommended two alternate options in addition to the current requirements for posting the pesticide safety poster: requiring the pesticide safety poster with all posted warning signs or requiring the pesticide safety poster at worker changing sites. Requiring that the pesticide safety poster be displayed wherever a warning sign is posted would impose significant burden on employers. The pesticide safety poster is much larger than the warning sign, so it would be difficult for employers to put up and take down the pesticide safety poster with the same ease as they handle the warning sign. In addition, because the poster is much less durable than the warning sign, EPA believes that employers would have to replace the poster periodically when the treated area has to be posted for more than a few days. EPA expects that employers would need to obtain multiple copies of the poster and would have to replace them frequently.

The WPS does not require employers to provide facilities for workers to change clothes. A requirement to place the pesticide safety poster at a site that

may not exist at all establishments would not be practical or feasible.

For the reasons described above, EPA decided not to propose requirements for employers to display the pesticide safety poster with all posted warning signs or at worker changing sites. EPA believes that it is more important and practical for workers to review the pesticide safety poster at the site of the decontamination supplies, where they can be reminded of safety and hygiene principles while cleaning themselves after working in a treated area.

7. *Request for comment.* EPA specifically requests comment on the following questions:

- What additional burden would employers face if the proposed option to require pesticide safety information to be displayed at decontamination sites is implemented? Would there be benefits to employers?
- Do data exist that show that access to information such as that on the pesticide safety poster at the same location as decontamination supplies leads to more workers adopting hygiene practices, thereby reducing the number of workplace illnesses?

#### *B. Content of Basic Pesticide Safety Information Display*

1. *Overview.* The existing WPS mandates specific content for the pesticide safety poster. EPA proposes to require additional information so workers and handlers can contact the state or tribal enforcement agency.

2. *Existing WPS regulations.* Under 40 CFR 170.135(b)(1) through (2) and 170.235(b)(1) through (2), the pesticide safety poster must include the following content:

- Avoid getting on your skin or into your body any pesticides that may be on plants and soil, in irrigation water, or drifting from nearby applications.
- Wash before eating, drinking, using chewing gum or tobacco, or using the toilet.
- Wear work clothing that protects the body from pesticide residues (long-sleeved shirts, long pants, shoes and socks, and a hat or scarf).
- Wash/shower with soap and water, shampoo hair, and put on clean clothes after work.
- Wash work clothes separately from other clothes before wearing them again.
- Wash immediately in the nearest clean water if pesticides are spilled or sprayed on the body. As soon as possible, shower, shampoo, and change into clean clothes.
- Follow directions about keeping out of treated or restricted areas.

- There are federal rules to protect workers and handlers, including a requirement for safety training.

The WPS also requires the employer to provide contact information for the nearest emergency medical care facility and to update workers and handlers if the information changes. EPA has developed a poster that complies with the requirements of the regulation (except for the site-specific information requirements) and makes it available to agricultural employers free of charge.

#### *3. Details of the proposal/rationale.*

The Agency proposes to amend the basic pesticide safety content required to be displayed on an agricultural establishment to clarify the emergency medical information section, and to include contact information for contacting the state or tribal regulatory agency. The proposal no longer refers to a “pesticide safety poster.” Instead, the proposed regulatory text refers to “pesticide safety information” to allow some flexibility in how all the required information is displayed. EPA believes that most agricultural establishments will choose to use EPA’s free pesticide safety poster to comply with the WPS pesticide safety information; EPA would update the poster to include the proposed changes to the information. However, the information does not have to be displayed as a poster as long as the display includes the required information and meets the requirements of the section.

Finally, the Agency proposes to require that the pesticide safety information display contain contact information for the state or tribal regulatory agency for pesticide enforcement. EPA believes that workers and handlers should have the opportunity to ask questions about protections offered by the WPS and to report pesticide exposure incidents or suspected non-compliance that may endanger them.

The proposed regulatory text concerning the additional required content of the pesticide safety information display appears in § 170.11(a)(1) of the proposed rule. The text concerning requirements when there are changes to the pesticide safety information appears in § 170.11(a)(2).

4. *Costs and benefits.* EPA estimates the cost to revise the contents of the basic pesticide safety information display would be \$108,000 annually, or about \$0.30 per WPS establishment per year. EPA included in this estimate the cost for employers to purchase the poster. However, EPA believes that many would obtain the updated poster free of charge from the Agency; as a result the actual cost of this requirement

may be lower. For a complete discussion of the costs of the proposals and alternatives, see the "Economic Analysis of Proposed Revisions to the Worker Protection Standard," Chapter 3 Cost Analysis (Ref. 1).

5. *Request for comment.* EPA specifically requests comment on the following questions:

- What additional burden would employers face if the proposed option to require pesticide safety information to be displayed at decontamination sites is implemented? Would there be benefits to employers?
- Should EPA consider other changes to content of the pesticide safety information display? If so, what changes and why?

#### XIV. Decontamination

Unit XII discussed proposed decontamination requirements specifically for workers who enter a treated area in which an REI is in effect as part of a suite of proposed changes to the protections for early entry workers. This Unit discusses routine and emergency decontamination for workers and handlers. The proposals in this Unit would cover handlers and workers who are not entering a treated area in which an REI is in effect.

##### A. Clarify the Quantity of Water Required for Decontamination

1. *Overview.* The existing WPS requires employers to provide water for decontamination. EPA proposes to clarify the quantity of water required for decontamination from "enough water for routine washing and emergency eyeflush" to a specific quantity.

2. *Current WPS regulations.* The WPS requires agricultural employers to provide decontamination supplies, including "enough water for routine washing and emergency eyeflush," when workers are performing activities in areas where a pesticide was applied or an REI was in effect at any point in the last 30 days and come in contact with anything that has been treated with a pesticide (40 CFR 170.150). The WPS also requires handler employers to provide decontamination supplies, again including "enough water for routine washing, for emergency eyeflushing and for washing the entire body in case of an emergency," for handlers (40 CFR 170.250). Part 170 does not specify how much would constitute enough water to meet the decontamination supplies requirement.

3. *Summary of the issues.* Agricultural employers have reported difficulty in ensuring that they provide an adequate amount of water because the amount of water needed for each worker or handler

is not stated in the current regulation. When EPA implemented the WPS, state regulatory agencies requested that the EPA clarify the quantity of water necessary to satisfy the decontamination requirement. In guidance published in 1993, "How to Comply with the Worker Protection Standard for Agricultural Pesticides: What Employers Need to Know," EPA recommended that employers provide 1 gallon of water per worker for routine decontamination and 3 gallons per handler for routine washing and emergency decontamination (Ref. 80, p. 25). This guidance was developed by experts from EPA's program and enforcement offices and state regulatory agencies. Further discussion about the amount of water required can be found in "How to Comply with the Worker Protection Standard for Agricultural Pesticides: What Employers Need to Know."

4. *Details of the proposal/rationale.* EPA proposes to require that employers must provide 1 gallon of water per worker for routine decontamination and 3 gallons of water per handler for routine washing and emergency decontamination. By codifying the guidance discussed above, EPA believes that employers would have no difficulty in determining the amount of water for routine and emergency decontamination required for their workers and handlers. This specificity would assist in providing workers and handlers with the amount of water necessary for routine washing and provide handlers with a sufficient amount of water should a pesticide emergency occur. Employers could be confident that they are complying with the regulation and keeping their workers and handlers safe in the event of an exposure by providing adequate supplies.

The proposed regulatory text concerning the required quantities of decontamination water appears in the proposed rule § 170.111(b) for workers and § 170.209(b) for handlers.

5. *Cost.* EPA estimates the cost of this proposal would be negligible because it is a codification of existing EPA policy interpretations of the WPS.

6. *Request for comment.* EPA specifically requests comment on the following questions:

- Is 1 gallon for routine washing for workers and 3 gallons for handler emergency decontamination, reasonable amounts of water for workers or handlers who have been exposed to pesticides? If not, why?
- What amount of water would be reasonable, or what other alternative is there?
- Would waterless cleansing agents used in lieu of soap, water, and towels

effectively remove pesticide residues from workers' and handlers' hands? Should EPA consider allowing the employer to substitute waterless cleansing agents for the currently required decontamination supplies? If so, why? Please provide data on the efficacy of waterless cleansing agents for removing pesticide residues.

##### B. Eliminate the Substitution of Natural Waters for Decontamination Supplies

1. *Overview.* The existing WPS permits employers to substitute clean, natural waters from springs, streams, lakes or other sources for contained water supplies at decontamination sites in specific circumstances. EPA proposes to eliminate the option to substitute clean, natural waters for the potable water required for decontamination. The proposal would allow the employer to supplement the required water supplies with clean, natural waters if necessary.

2. *Current WPS regulations.* The WPS allows employers to substitute clean waters from springs, streams, lakes, or other sources for decontamination at remote work sites if such water is more accessible than the water located at the nearest place of vehicular access (40 CFR 170.150 and 170.250). Generally, the WPS requires agricultural and handler employers to provide decontamination supplies no farther than one quarter mile away from where workers are working or from where handlers are performing handling activities. One exception to this requirement is that if worker and handler activities occur more than one quarter mile from the nearest point of vehicular access, soap, single-use towels, and water may be located at the nearest point of vehicular access, but the employer may allow workers or handlers to use clean water from springs, streams, lakes, or other sources if more accessible than the decontamination supplies.

3. *Details of the proposal/rationale.* The Agency proposes to eliminate the exemption that allows agricultural and handler employers to use clean, natural bodies of water in lieu of the required decontamination supplies. Employers would need to ensure that workers and handlers have access to sufficient quantities of potable water for decontamination; however, employers would be permitted to supplement the required quantities of potable water with natural waters in the event of an emergency. The Agency believes that vehicular access to worker and handler sites is common and not likely more than a quarter mile distance from the worker location. Modern agriculture is highly mechanized, and the Agency

believes that workers and handlers are routinely transported close to their work areas by vehicles.

EPA believes that workers and handlers would be better protected by ensuring access to the required amount of potable water for routine and emergency decontamination, and allowing the option to supplement those supplies with clean, natural waters in the event of an emergency.

4. *Costs and benefits.* EPA did not estimate the cost for this proposal because EPA believes that a negligible number, if any, employers would be impacted by this proposal. However, EPA has no data on the number of employers that may use this option and is seeking data below.

5. *Request for comment.* EPA specifically requests comment on the following:

- Please provide information on situations, if any, in which the proposed change would significantly increase the burden on agricultural employers and offer alternative proposals.
- Please provide any information on the cost associated with the current situation and proposed change.
- Would using natural waters for decontamination worsen a worker's or handler's situation after pesticide exposure?
- Would it be beneficial to use any water in the event of a pesticide emergency or when decontamination supplies cannot be located within one quarter mile because of limited vehicular access?

### C. Requirements for Ocular Decontamination in Case of Exposed Pesticide Handlers

1. *Overview.* The existing WPS requires employers to provide a specific amount of water to handlers that they can carry for use in the event of an ocular pesticide exposure. EPA proposes to require employers to provide clean, running water at permanent (i.e., plumbed and not portable) mixing and loading sites for handlers to use in the event of an ocular pesticide exposure.

2. *Current WPS regulations.* The WPS requires handlers to carry water for eyewashing to use in case of an ocular exposure if the pesticide label mandates the use of eye protection (40 CFR 170.250). The handler employer must assure that 1 pint of water is available for each handler who is performing the tasks for which the pesticide label requires protective eyewear.

As discussed in Unit XIV.A., the WPS requires employers to provide water sufficient for handlers to perform routine decontamination in addition to

the requirement discussed in this section to provide water for handlers' eye washing in case of an ocular exposure.

3. *Summary of the issues.* Farmworker Justice provided the Agency with information about several incidents of accidental ocular exposure (Ref. 36). They noted that even when handlers use the PPE required on the label, they may be accidentally exposed to the pesticide. For example, a pesticide may splash into a handler's eye even if he or she wears proper PPE. The eyes can suffer serious damage if exposed to certain pesticides. Farmworker Justice noted that the WPS requirement for 1 pint of water would not satisfy EPA's own current recommendations in the Label Review Manual, which calls for a person who suffers ocular pesticide exposure to "hold eye open and rinse slowly and gently with water for 15–20 minutes" (Ref. 84, pp. 7–12). In addition, the American National Standards Institute standard for eyeflushing calls for a sufficient quantity to rinse eyes continuously for 15 minutes (ANSI Z358.1–2009). Therefore, Farmworker Justice recommended that EPA adopt a standard for ocular decontamination more protective than the WPS's current one pint requirement.

4. *Details of the proposal/rationale.* In addition to the 1 pint of water already required to be carried by the handler, the Agency proposes to require that at permanent mixing and loading sites handler employers provide clean, running water sufficient to provide at a minimum of 1.5 liters (0.4 gallons) per minute for 15 minutes for handlers to use for eye flush purposes in the event of an ocular pesticide exposure. EPA expects that adopting this standard would improve the ability of handlers to mitigate damage to their eyes from accidental exposure. EPA expects that most permanent mixing sites are plumbed to facilitate the dilution of concentrated pesticides and to load application equipment and have the potential to provide clean water flowing at the appropriate rate to comply with this requirement. For those handlers who may be exposed while not working at the permanent mixing loading site, EPA believes the 3 gallons of water required for routine decontamination would provide 7.5 minutes of rinsing, sufficient to clear the eyes immediately at which point the handler can continue rinsing his or her eyes for the full 15 minutes at a permanent site.

The Agency based the proposed requirement on OSHA's standard for ocular decontamination. OSHA's requirement for general industry states,

"where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use" (29 CFR 1910.151(c)). Based on the OSHA standard, the American National Standards Institute developed a water flow standard to address minimum operating requirements for an eye flush. These operating standards establish a minimum of 1.5 liter (0.4 gallons) per minute of flushing fluid, such as water, for 15 minutes (ANSI Z358.1–2009) (Ref. 85). Some states have required handler employers to provide ocular decontamination conforming to the OSHA standard. For example, Oregon implemented the same requirement proposed here in 2006 (OSHA 437–004–1305 K(5)). In FY 2007, Oregon reported 23 instances of non-compliance. By FY 2010, only 5 establishments were cited for non-compliance (Ref. 86, p. 6).

The proposed regulatory text concerning ocular decontamination for handlers appears in § 170.209(d) of the proposed rule.

5. *Costs and benefits.* EPA estimates that the cost of this proposal would be minimal because mixing pesticides at a permanent site generally involves substantial quantities of water and EPA believes that plumbed water is almost always available at those sites. EPA's proposal would not require employers to purchase a metered eyewash station; any water supply that meets the proposed standards would comply.

6. *Alternative options considered.* EPA considered requiring portable eyewash stations at all mixing or loading sites as an alternative to the proposed option. EPA believes that most establishments mix and load at various sites and may move from day to day. The cost of equipping each potential mixing or loading site (permanent and non-permanent) with a portable eye wash station would be about \$14 million per year for agricultural establishments and commercial pesticide handling establishments.

As discussed above and in Unit XIV.A., handler employers are required to provide 3 gallons of water per handler for decontamination. EPA believes that if necessary, handlers could use this decontamination water for about 7 minutes at the recommended rate of 1.5 liter (0.4 gallons) per minute, which would give them time to get to a location with sufficient water to rinse their eyes for the recommended amount of time. EPA does not intend for the routine decontamination water to be used for emergency eyeflush on a regular basis. However, the Agency

believes that it is appropriate to consider the existing availability of clean water where the handler may be exposed as well as new requirements when considering alternatives to the current eyewash requirement. EPA believes that most handlers will have access to either a permanent mixing or loading site or to the routine decontamination water. EPA believes the benefits associated with a requirement to have a portable eyewash station at each mixing or loading site is not reasonable in comparison with the cost and alternatives available.

Therefore, EPA decided not to propose a requirement for portable eyewash stations at all mixing or loading sites.

7. *Request for comment.* EPA specifically requests comment on the following questions:

- Is it reasonable to require that clean, running water be present and flowing at a minimum of 1.5 liter (0.4 gallons) per minute for 15 minutes at permanent mixing and loading stations? If not, why?
- Should EPA consider other ways to provide ocular decontamination for handlers? If so, please provide specific details, including rationale and cost.
- Do data exist on the relative number of mixing and loading activities that occur at permanent sites and away from permanent sites?
- Are there other ways in which ocular decontamination might reasonably be improved at temporary mixing and loading sites?

#### D. Showers for Handler Decontamination

1. *Overview.* The existing WPS establishes specific requirements for routine and emergency handler decontamination supplies, but these requirements do not include shower facilities. EPA considered but is not proposing adding a requirement for handler employers to provide shower facilities.

2. *Current WPS regulations.* As discussed above in Unit XIV.A., the WPS specifies the types and amounts of supplies handler employers must provide. The WPS does not require handler employers to provide shower facilities.

3. *Summary of the issues.* Farmworker organizations have requested that EPA require employers to provide showers for handlers to facilitate decontamination at the end of the work day. They suggest that the use of showers after pesticide handling activities could decrease pesticide exposure to handlers. Representatives of agricultural employers, the agricultural employers, and others from the SBAR

panel process, noted that in their experience even when showers are available, handlers do not use them (Ref. 18, p. 21) (Ref. 87). Some stakeholders reported that many workers may be reluctant to shower at the workplace because they believe that showering immediately after work is detrimental to their health (Ref. 88).

As an alternative to imposing a requirement to provide showers, the SBREFA SERs suggested that EPA expand training for pesticide handlers to include how to minimize take-home exposure and how to use additional personal protective equipment (Ref. 18).

4. *Rationale for not proposing.* The Agency considered requiring showers but decided to not propose it because EPA believes that the additional training content for handlers (Unit VII.E.) and clarified decontamination provisions in Unit XIV.A., provide handlers with adequate information on how to reduce take-home exposure and sufficient supplies for routine washing.

5. *Costs and benefits.* EPA estimates that installing a shower on a single establishment would cost about \$105,000. Nationally, this would cost about \$22.7 billion dollars for construction. This estimate does not include future costs of maintenance. For a complete discussion of the costs of the proposals and alternatives, see the “Economic Analysis of Proposed Revisions to the Worker Protection Standard,” Chapter 3 Cost Analysis (Ref. 1).

6. *Request for comment.* EPA specifically requests comment on the following questions:

- Is it reasonable to assume a significant percentage of handlers would not use a permanent shower facility at a worksite?
- Would increased handler training, clarified amounts of water for routine decontamination, and/or the use of additional PPE for handlers be sufficient to protect handlers and their families from occupational and take-home pesticide exposure? If not, why?
- Are there other preventative measures that would provide comparable protection to handlers and their families without incurring the same cost as requiring installation of shower facilities? If so, please describe the preventative measures, estimated cost, and implementation.
- What other alternatives exist?

#### XV. Emergency Assistance

A. *Overview.* The existing WPS requires employers to provide “prompt” transportation to an emergency medical facility to workers or handlers who may have been exposed to pesticides. EPA

proposes to require employers to make transportation to a medical facility available to workers and handlers within thirty (30) minutes of learning of the exposure. EPA also proposes to require the employer to provide to the worker or handler or to treating medical personnel the SDS and pesticide label, or all of the pertinent information in an alternate form.

B. *Existing WPS Regulations.* The WPS requires employers to make transportation available promptly to workers or handlers that have been “poisoned or injured by exposure to pesticides” (40 CFR 170.160 and 170.260). Employers must provide the following information, if available, to the exposed person or the treating medical personnel: name of the product, EPA registration number, active ingredient, medical information from the label, circumstances of the pesticide application (or the handling of the pesticide), and circumstances of the pesticide exposure.

C. *Summary of the issues.* State enforcement agents have reported to EPA that the vague timeframe has prevented them from verifying whether a worker was provided transportation to the medical facility in conformance with the WPS, and recommended that EPA adopt a more specific timeframe for transportation. They contend that the existing requirement is vague and leads to various interpretations of the timeframe. Without a formal definition of “prompt,” compliance and enforcement become more difficult for inspectors. In addition, varying interpretations of “prompt” could lead to conflict between employers, agricultural workers and handlers, and medical personnel about how quickly necessary information and transportation must be provided in an emergency situation.

Farmworker advocacy organizations have noted the difficulty in obtaining proper medical treatment for workers and handlers without all of the relevant information from the label and circumstances of the incident. Given the difficulty of diagnosing an illness or injury related to a pesticide exposure, treating physicians need information related to the pesticide products potentially involved and circumstances of the incident to initiate proper treatment. In addition, the sooner a person exposed to pesticides is transported for, and thus receives, treatment, the more likely the diagnosis and treatment will lead to a successful medical outcome. Farmworker advocacy organizations recommended that EPA require the employer to provide the information whether requested or not.

They also recommended adding an option for the employer to satisfy the requirement by providing the information in the current regulations, a copy of the label, or a copy of the SDS.

#### D. Details of the Proposal/Rationale.

EPA proposes to require agricultural employers and handler employers to provide emergency medical assistance within thirty (30) minutes after learning that an employee has been poisoned or injured by exposure to pesticides as a result of his or her employment, replacing the current standard of "prompt." The emergency medical assistance includes both providing the required information and making transportation to a medical facility available to the affected worker or handler. Although the intent of the proposal is for the injured party to receive medical attention as soon as possible, this requirement does not establish a timeframe for reaching the medical facility.

The proposal would require employers to provide to the worker, handler, or treating medical personnel information on each pesticide to which the worker or handler might have been exposed. The employer could satisfy this requirement by providing copies of both the SDS and the pesticide labeling. Alternatively, the employer could provide all of the following information: product name, EPA registration number, active ingredient(s), antidote, first aid, and any other medical treatment information from the label or the SDS. The employer would also be required to provide to the worker, handler, or treating medical personnel the circumstances of the pesticide application(s) or use(s) and the circumstances of the pesticide exposure.

Pesticide workers and handlers are instructed to wash their bodies and clothing immediately if they come into contact with a pesticide. The existing regulation requires agricultural employers and commercial pesticide handler employers to provide sufficient water and soap to workers and handlers for routine and emergency decontamination. In the event of a more serious illness or injury that requires immediate medical attention, however, it is critical for the worker or handler to be evaluated and treated quickly. When medical treatment is provided soon after the illness or injury, the effects of the pesticide exposure can be minimized. The longer the illness- or injury-causing exposure persists, the more likely the worker or handler will suffer more severe effects. EPA believes that requiring transportation and information about the pesticide(s) and circumstances of the exposure to be

provided within thirty minutes after learning of the exposure would reduce the effects of pesticide exposure and improve the ability of the medical personnel to provide appropriate treatment.

EPA does not have data on the number of requests for information in the event of an accidental pesticide exposure by exposed persons or treating medical personnel. Medical personnel need relevant information to treat people who may have been exposed to pesticides. Treatment protocol varies by pesticide and type of exposure; for example, the recommended treatment for one pesticide may be to induce vomiting immediately, while for another pesticide this treatment could do more harm to the exposed person. Many of the recommendations for medical care listed in the "Recognition and Management of Pesticide Poisoning" manual depend on the time between initial exposure and medical treatment (Ref. 12). Some treatments are not effective unless provided within a specific timeframe of exposure (generally 1 hour). In addition, recommended treatments for different types of exposure vary and sometimes conflict with each other; therefore, it is essential that the medical personnel have as much information as possible about the likely pesticide(s) to which the patient may have been exposed in order to provide the proper treatment.

Amending the existing regulation to require provision of information relevant to the exposure circumstances and pesticide's properties would ensure that medical personnel are properly informed at the time of beginning treatment or soon afterward. With timely and proper treatment, many acute pesticide exposures may be mitigated before they cause more long-lasting effects.

Providing workers transportation to a medical facility in the event of a workplace injury is the responsibility of employers in almost all industries. OSHA requires that a worker injured on the job receive medical treatment, clarifying the requirement to mean within 3–4 minutes if the injury is life-threatening or 15 minutes if it is not life-threatening (29 CFR 1926.50(a)). OSHA requires employers in all industries to provide transportation for emergency medical assistance if it is not possible to use public services, for example, an ambulance (29 CFR 1926.50(e)). EPA recognizes the differences between agriculture and other industries. WPS establishments can be very large compared to the types of locations covered by OSHA standards, for example, factories, office buildings, and

similar self-contained areas. Whereas the foreman or manager at a factory is likely to be on site or nearby at the time of an employee's injury, an agricultural or commercial pesticide handler employer could be significantly farther away. Based on the physical differences between a WPS establishment and typical industrial locations covered by OSHA, EPA believes it is reasonable to allow agricultural employers and handler employers a longer timeframe to reach an exposed worker or handler to provide transportation.

In developing this proposal, EPA was mindful of the demographics of the worker and handler populations. Some do not have their own vehicle and rely on an employer, co-worker, or labor contractor to provide transportation to and from the agricultural establishment. Some may not be able to secure transportation to a medical facility outside of working hours. The injured person may be too compromised to safely drive to the medical facility. Without a requirement for the employer to provide transportation, some workers and handlers might be stranded in the treated area or might wait longer than necessary or advisable to seek medical attention.

The regulatory text concerning emergency assistance appears in the proposed rule at § 170.9(f) for workers and handlers and at § 170.13(k) for handlers employed by a commercial pesticide handling establishment.

E. *Costs.* When compared to current practices, the Agency estimates the cost of complying with the proposed requirements to provide the information and to transport exposed workers or handlers within thirty minutes of learning of the exposure would be negligible. The Agency believes that many agricultural employers and commercial handler employers already meet this standard. Under other proposed changes, agricultural employers and commercial handler employers would be required to maintain copies of the SDS or pesticide label in an office for the workers to review. [See Unit IX.] Agricultural employers and commercial handler employers are also required to maintain copies of the application records. Providing these documents, copies, or information from them, would impose minimal additional burden on the employer. Agricultural employers and commercial handler employers are already required to provide transportation to a medical treatment facility for workers or handlers who are exposed to pesticides. Changing the timeframe for providing transportation from "prompt" to within 30 minutes is

a technical clarification and EPA believes it would impose minimal burden. For a complete discussion of the costs of the proposals and alternatives, see the “Economic Analysis of Proposed Revisions to the Worker Protection Standard,” Chapter 3 Cost Analysis (Ref. 1).

*F. Alternative Options Considered but Not Proposed.* The Agency considered two alternative options to the timeframe for providing transportation. First, the Agency considered replacing “prompt” with “immediate.” Using “immediate” might convey the urgency of the situation and encourage agricultural employers and commercial handler employers to transport exposed workers or handlers as quickly as possible. However, this change would not address the vagueness in the regulation or impose a timeframe in which the agricultural employer or commercial pesticide handler employer must make available the proposed required information and transportation to a medical facility. Second, the Agency considered imposing a timeframe of one hour for the agricultural employer or commercial pesticide handler employer to make transportation available. Based on the guidance under OSHA for providing medical treatment to an injured employee, the Agency believes that an hour would be too long to allow a worker or handler to wait for transportation to a medical treatment facility to be made available to worker or handler.

*G. Request for Comment.* EPA specifically requests comment on the following questions:

- Is 30 minutes a reasonable timeframe for an agricultural employer or commercial handler employer to make transportation available to a worker or handler who has been exposed to pesticides to a medical treatment facility? If the timeframe is too long or short, please explain why. What would be a reasonable alternative?
- Do medical personnel treating a worker or handler for occupational pesticide exposure need more information than what is proposed to evaluate, diagnose, and treat the patient? If so, what additional information would be necessary?
- If time is of the essence in determining the proper course of treatment, should EPA consider requiring the agricultural employer to report the estimated time of the incident in addition to the information proposed above?

## **XVI. Personal Protective Equipment**

### *A. Chemical-Resistant PPE*

1. *Overview.* The existing WPS requires employers to provide “chemical-resistant” PPE in certain circumstances but does not provide a practical method for evaluating whether the material meets the standard. EPA proposes to clarify how to determine whether PPE is “chemical-resistant.” This clarification would ensure that compliance with the WPS chemical-resistant garment standard can be objectively determined and would provide appropriate protection to workers or handlers.

2. *Existing WPS regulations.* Under the WPS, “chemical-resistant” material means a “material that allows no measurable movement of the pesticide being used through the material during use” (40 CFR 170.240(c)(1)).

3. *Summary of the issues.* State agencies have informed the EPA that they cannot enforce the current standard. It can be difficult to determine, without significant and costly testing, whether a material is permeable to a pesticide. Inspectors noted that they cannot verify compliance at the time of a field inspection. Similarly, employers attempting to comply with the requirement face difficulty in determining whether a garment meets the criteria.

4. *Details of the proposal/rationale.* The Agency proposes to redefine “chemical-resistant” to mean that the PPE must be identified by the manufacturer as chemical resistant. EPA believes that PPE manufacturers will only identify items as chemical resistant if they provide a significant barrier to chemicals.

Changing from the current standard to one that requires the employer to provide PPE that the manufacturer calls “chemical-resistant” would allow employers and enforcement personnel a clear standard for determining compliance with the WPS.

The proposed regulatory text concerning chemical-resistant PPE appears in § 170.207(b)(1) of the proposed rule.

5. *Costs.* The estimated cost of this clarification is considered to be negligible. The EPA believes most employers currently purchase garments labeled as chemical-resistant for their employees.

6. *Request for comment.* EPA specifically requests comment on the following question:

- Are there alternatives to this proposal for determining chemical resistance of a garment that are both

cost-effective and protective? Please provide details and any data that may apply.

### *B. Closed Systems*

1. *Overview.* The existing WPS permits exceptions to the label-specified PPE when using a closed system for certain handling activities. A closed system is an apparatus designed for mixing and loading pesticides that enables transfer of a pesticide from its original container into a new container, mix tank, or application equipment, while limiting the handler’s exposure to the pesticide. But the existing WPS fails to provide specific criteria for an acceptable closed system, thereby limiting the practical availability and utility of the exception. EPA proposes to establish specific criteria for closed systems based on California’s existing standard that would ensure protections for handlers, bystanders, and the environment during mixing and loading. EPA expects that this change would increase the number of establishments that use closed systems for pesticide mixing and loading activities because employers would have a clear description of the requirements on which to rely, thereby decreasing the potential for exposure.

2. *Existing WPS regulations.* The existing WPS provides only a description of a closed system as one that “. . . enclose[s] the pesticide to prevent it from contacting handlers or other persons.” Use of a properly functioning closed system that meets this description allows handlers to substitute the label-required PPE with alternative PPE when the system is used and maintained in accordance with the manufacturer’s written operating instructions (40 CFR 170.240(d)(4)). The existing description does not adequately describe the specific characteristics of a closed system.

3. *Summary of the issues.* State regulators have reported problems with the ability to determine compliance with WPS requirements for closed systems. The current description lacks specific criteria for the characteristics necessary for a protective enclosed system, inhibiting the ability of inspectors to ensure that the system is in compliance. State regulators have asked EPA to establish practical, enforceable criteria for closed systems that will enable them to better determine which types of systems qualify for the exception.

California is the only state with specific closed system standards. The California Department of Pesticide Regulation requires applicators to use a closed system when handling products

with a signal word of “Danger” or “Warning” (Ref. 89). The closed system standards are required for liquid pesticides and may be used, but are not required, for other pesticide formulations. The definition of a “closed system” references a “Director’s Memo,” which outlines the standards for closed systems (Ref. 90). The Director’s Memo establishes the following criteria:

1. The liquid pesticide must be removed from its original shipping container and transferred through connecting hoses, pipes, and/or couplings that are sufficiently tight to prevent exposure of any person to the concentrate, use dilution, or rinse solution.

2. All hoses, piping, tanks, and connections used in conjunction with a closed system must be of a type appropriate for the pesticide being used and the pressure and vacuum of the system.

3. All sight gauges must be protected against breakage. Sight gauges must be equipped with valves so the pipes to the sight gauge can be shut off in case of breakage or leakage.

4. The closed system must adequately measure the pesticide being used. Measuring devices must be accurately calibrated to the smallest unit in which the material is being weighed or measured. Pesticide remaining in the transfer lines may affect the accuracy of measurement and must be considered.

5. The movement of a pesticide concentrate beyond a pump by positive pressure must not exceed 25 pounds per square inch (psi) of pressure.

6. A probe must not be removed from a container except when:

a. The container is emptied and the inside, as well as the probe, have been rinsed in accordance with item 8.

b. DPR has evaluated the probe and determined that, by the nature of its construction or design, it eliminates significant risk of worker exposure to the pesticide when it is withdrawn from a partial container.

c. The pesticide is used without dilution and the container has been emptied.

7. Shut-off devices must be installed on the exit end of all hoses and at all disconnect points to prevent the pesticide from leaking when the transfer is stopped and the hose is removed or disconnected.

a. If the hose carried pesticide concentrate and has not been rinsed in accordance with item 8, a dry break coupler that will minimize pesticide loss to not more than two milliliters per disconnect must be installed at the disconnect point.

b. If the hose carried a pesticide use dilution or rinse solution, a reversing action pump or a similar system that will empty the hose may be used as an alternative to a shutoff device.

8. When the pesticide is to be diluted for use, the closed system must provide for adequate rinsing of containers that have held less than 60 gallons of a liquid pesticide. Rinsing must be done with a medium, such as water, that contains no pesticide.

a. The system must be capable of spray-rinsing the inner surfaces of the container and the rinse solution must go into the pesticide mix tank or applicator vehicle via the closed system. The system must be capable of rinsing the probe, if used, and all hoses, measuring devices, etc.

b. A minimum of 15 psi of pressure must be used for rinsing.

c. The rinsing must be continued until a minimum of 10 gallons or one-half of the container volume, whichever is less, has been used.

d. The rinse solution must be removed from the pesticide container concurrently with introduction of the rinse medium.

e. Pesticide containers must be protected against excessive pressure during the container rinse operation. The maximum container pressure must not exceed five psi.

9. Each commercially produced closed system or component to be used with a closed system must be sold with:

a. Complete instructions consisting of a functional operating manual and a decal(s) covering the basic operation. The decal(s) must be placed in a prominent location on the system.

b. Specific directions for cleaning and maintenance of the system on a scheduled basis.

c. Information on any restrictions or limitations relating to the system, such as pesticides that are incompatible with materials used in the construction of the system, types (or sizes) of containers or closures that cannot be handled by the system, any limits on ability to correct or over measurement of a pesticide, or special procedures or limitations on the ability of the system to deal with partial containers.

#### *Operating Requirements:*

10. The system must be cleaned and maintained according to the manufacturer’s instructions. If the system is not a commercially produced system it must be maintained on a regular basis. A record of cleaning and maintenance must be maintained.

11. All labeling required personal protective equipment (PPE) must be present at the work site. Protective eyewear must be worn while using a

closed system that operates under pressure. While using a closed system, PPE requirements may be reduced or modified as provided in Title 3 California Code of Regulations, section 6738.

Information about closed systems which have been evaluated and found to meet these criteria is available from DPR (Ref. 91).

California’s standard also allows for PPE to be modified or substituted when using a closed system that meets the established criteria.

#### *4. Details of the proposal/rationale.*

EPA proposes to adopt the California closed system standards as outlined in the Director’s Memo, except where there are specific references to California-specific information. The proposed criteria are based on research by the California Department of Pesticide Regulation. California has indicated that it is considering changes to the Director’s Memo criteria. EPA will consider any changes made to California’s standard and the supporting rationale when developing a final standard for closed systems in the WPS.

In addition to establishing standards for the system, the proposal establishes requirements for the use of the closed system. To be eligible for the exceptions to the label-specified PPE requirements when a handler uses a closed system, EPA proposes to require that the handler employer ensure that the handler receives training on use of the closed system, perform maintenance according to the manufacturer’s written instructions, and maintain records of all maintenance for 2 years.

The proposed rule would retain the following current requirements: (1) Label-mandated PPE must be immediately available for use in an emergency; (2) handlers must use protective eyewear for closed systems that operate under pressure; and (3) a respirator must be worn if required by the label.

EPA believes that the existing WPS standard for closed systems, if applied strictly, may be difficult to meet and could limit the exception from being used because it requires that no pesticide escape during the transfer. As a result, some agricultural establishments may be forgoing the WPS closed system exception, despite the availability of closed systems that can be reasonably expected to meet the performance criteria. Additionally, other establishments may be employing systems that they believe qualify as closed, yet nevertheless expose handlers to elevated risk because the criteria for closed systems have not been adequately described. EPA is aware of

closed systems currently manufactured and available to agricultural and handler employers that meet the California closed system criteria.

EPA believes a properly designed and functioning closed system provides benefits to the pesticide handler, bystanders, and the environment. Studies show that PPE may be discarded if uncomfortable, such as when temperatures are high, or may be worn when contaminated or damaged, reducing its protective value. Additionally, PPE can only protect the wearer, but pesticide exposure to bystanders and the environment can be minimized through the use of a closed system. Industrial hygiene principles detail the use of the “hierarchy of controls” to manage chemical exposure. The hierarchy includes controlling chemical exposures from the source as a preferred approach, through substitution of a safer chemical or process, mechanizing the process, or isolating/enclosing the process. The use of closed systems fits this latter category by enclosing the chemical and substantially reducing the potential for exposure at the source, thereby reducing the potential for subsequent exposure to handlers, other people, and the environment.

Closed systems are considered an important protection against hazards in other industries. For example, health care workers working with hazardous drugs can experience exposures to those drugs that can result in illness. In 2004, CDC–NIOSH published an alert to healthcare workers, identifying the risks of exposure to these drugs (Ref. 92). The alert recommended a closed system drug transfer device (CSTD) to reduce exposure. CDC–NIOSH defines a CSTD as a system that “mechanically prohibits the transfer of environmental contaminants into the system and the escape of hazardous drug or vapor concentrations outside the system,” thereby limiting the occupational exposure to a healthcare provider (Ref. 92).

The proposed rule would replace the current performance standard with a set of specific criteria that a closed system would be required to meet. Because it will be easier to demonstrate compliance with these criteria, EPA expects this proposed revision to increase the number of establishments that use sufficiently protective closed systems for pesticide handling tasks involving mixing and loading, thereby reducing the potential for handlers and others to be exposed to pesticides during such activities.

The proposed regulatory text concerning closed systems appears in § 170.307(d) of the proposed rule.

5. *Costs and benefits.* EPA estimates the cost of the proposed standards for closed systems would be \$6.9 million annually, or about \$25 per agricultural establishment per year and about \$48 per commercial pesticide handling establishment per year. The cost estimate is based on conservative estimates of the number of establishments that currently use closed systems. EPA believes that some establishments that currently use closed systems that do not meet the proposed standards would upgrade and some would elect not to use a closed system, reverting to the label-required PPE. The Agency is not aware of sources of information that provide estimates of the number of establishments that use these systems for pesticide handling. Therefore, EPA has made assumptions about their numbers. The Agency believes these assumptions are conservative and that the actual cost of implementing this clarification of the requirements would be significantly lower.

The proposed requirement would not require employers to use closed systems if they have not already chosen to use closed systems in their operation, but will allow more flexibility for employers to use a broader range of closed systems. EPA believes that more closed systems will now be able to meet the criteria for the exception because it is proposing to replace language that implies a complete prohibition of exposure with more practical criteria that will enable more closed systems to meet the requirements for the exception. For a complete discussion of the costs of the proposals and alternatives, see the “Economic Analysis of Proposed Revisions to the Worker Protection Standard,” Chapter 3 Cost Analysis (Ref. 1).

6. *Alternative options considered but not proposed.* The Agency considered eliminating the exception for closed systems based on reports of improper uses of the closed system exception. However, EPA expects that properly defined and employed closed systems afford superior protection for handlers, other individuals, and the environment. In order to support the use of properly designed and operated closed system, EPA instead proposes to clarify the WPS criteria for closed systems.

7. *Request for comment.* EPA specifically requests comment on the following questions:

- Are the proposed standards for closed systems reasonable and achievable?

- Are the proposed standards for closed systems too specific? If so, please describe what aspects are too specific, why, and how to achieve sufficient protection while reducing the specificity.

- Do data exist on the number of establishments that use closed systems, the number that do not use closed systems because the current standard is not clear, and/or the number of establishments that use closed systems that meet the California criteria?

- Would people who currently use closed systems that do not meet the proposed standard upgrade their closed system or opt to use the label-required PPE? What information would impact this decision?

- What would be the cost to convert an existing system that does not meet the proposed standard to one that does?

- Should EPA consider eliminating any of the criteria listed in the proposal? If so, which criteria and why?

- What would be the benefits and draw backs of the requirement for the closed system to triple rinse the container? Is the technology available to provide this element at a reasonable cost?

- Would it be possible for agricultural and handler employers, handlers, and inspectors to measure the closed system’s PSI while the system is in use? If it would not be possible, should EPA consider eliminating this element?

### C. Contaminated PPE

1. *Overview.* The current WPS requires employers either to clean or properly dispose of contaminated PPE. EPA proposes to require that contaminated PPE be rendered unusable before disposal.

2. *Existing WPS regulations.* The WPS requires employers either to clean contaminated PPE or to dispose of it properly (40 CFR 170.240(f)). PPE can become contaminated with pesticides from routine use or spills, and if re-worn, can expose the wearer to those pesticide residues.

3. *Summary of the issues.* State agencies have raised concerns that contaminated PPE may be reused if not destroyed.

4. *Details of the proposal/rationale.* EPA proposes to require employers to render unusable before properly disposing of PPE that cannot be decontaminated according to the manufacturer’s instructions. This would protect workers, handlers and others from unnecessary exposure resulting from the wearing of contaminated garments. For example, if absorbent coveralls contaminated from overuse or soaked in pesticide from a spill are

accidentally placed in a laundry bin instead of the trash bin, a person in need of protective clothing may find the discarded garment and attempt to wear it. Cutting the garment apart would make it less likely that a person would attempt to wear it and be exposed to the pesticide residues.

The proposed regulatory text concerning rendering PPE unusable before disposal appears in § 170.207(d)(2) of the proposed rule.

5. *Costs and benefits.* The cost of this proposal is expected to be negligible, because employers are required to dispose of contaminated PPE under the existing requirement. There is expected to be minimal additional burden on the employer to render the PPE unusable. For a complete discussion of the costs of the proposals and alternatives, see the "Economic Analysis of Proposed Revisions to the Worker Protection Standard," Chapter 3 Cost Analysis (Ref. 1).

6. *Request for comment.* EPA specifically requests comment on the following question:

- Are there better ways to mitigate the risks associated with reuse of discarded PPE? Please provide rationale and data, as applicable, with your response.

#### D. Eyewear Protection for Open Cockpits

1. *Overview.* The existing WPS allows pilots applying pesticides from an open cockpit aircraft to substitute a visor for label-required eye protection. The Agency proposes to replace the option to use visors in open cockpit aerial applications with the option of using a helmet with the face shield lowered as a substitute for the eye protection required on the label. EPA expects this proposal would balance the needs for adequate eye protection and suitable visibility among handlers that apply pesticides aerially from open cockpit aircraft.

2. *Existing WPS regulations.* 40 CFR 170.240(d)(6)(ii) requires that pilots applying pesticides from an open cockpit wear PPE in accordance with the label but allows pilots to substitute a visor for label-required eye protection. Depending on the particular pesticide product, the label-required eye protection might be goggles; a face shield; safety glasses with front, brow, and temple protection; or a full-face respirator.

3. *Details of the proposal/rationale.* The Agency intended the existing open cockpit exception to relax certain PPE requirements, but EPA nevertheless intended to convey that some covering extending over the eyes was necessary. While a face shield might be characterized as a visor, the term can

also reasonably be interpreted as the brim of a cap that provides the eyes shade and protection from rain, but little other protection. Such a visor does not provide meaningful protection against pesticide sprays or spills. This protection is especially important for pilots applying in an open cockpit because they may be exposed to drift while making aerial applications. In order to assure aerial applicators have adequate eye protection, the Agency proposes to replace the option to use visors in open cockpit aerial applications with the option to use a helmet with the face shield lowered.

The proposed regulatory text concerning eyewear protection for open cockpits appears in § 170.307(f)(2) of the proposed rule.

4. *Costs and benefits.* EPA expects this proposal to have negligible costs because the pesticide label already mandates that employers provide specific PPE. This proposal merely changes the option for what PPE can be substituted for the label-mandated PPE. For a complete discussion of the costs of the proposals and alternatives, see the "Economic Analysis of Proposed Revisions to the Worker Protection Standard," Chapter 3 Cost Analysis (Ref. 1).

5. *Request for comment.* EPA specifically requests comment on the following question:

- Is the estimate of the cost reasonable? Please provide rationale and data to support your information.

#### E. Respirators: Fit Testing, Training, and Medical Evaluation

1. *Overview.* The existing WPS requires handler employers to ensure that handlers' respirators fit correctly. EPA proposes to clarify this requirement to expressly include medical evaluation, fit testing, and training for respirator users. In addition, EPA proposed to require that handler employers retain records of compliance with these requirements. EPA expects that these changes will result in fewer incidents of exposure and improvements to the health of respirator-wearing handlers covered by the WPS.

2. *Existing WPS regulations.* The WPS requires handler employers to ensure that each handler's respirator fits correctly (40 CFR 170.240(c)(9)). However, part 170 does not provide specific details on how to ensure that a respirator fits properly, conducting medical evaluation, periodically refitting the handler for respirator use, training requirements for proper use of respirators, or retaining fit test records.

3. *Summary of the issues.* The CHPAC, a Federal Advisory Committee,

and Farmworker Justice noted that OSHA's standards for respirator fit testing, training, and medical monitoring are absent from part 170 and recommended incorporating the OSHA requirements (Ref. 74) (Ref. 35, p. 2). They expressed concern that the level of protection for handlers using respirators under the WPS requirements is inadequate.

#### 4. Details of the proposal/rationale.

EPA proposes to require handler employers to comply with the respirator fit testing, training, and medical evaluation requirements set by OSHA at 29 CFR 1910.134 whenever a respirator other than a dust or mist filtering mask is required by the labeling. The OSHA standard includes a specific standard for fitting a user for respirator use, training on recognizing when the respirator seal may be broken, and what steps to take to properly use and maintain respirators. OSHA also requires respirator users to be medically evaluated to ensure the respirator use does not cause undue stress on their bodies. The adoption of the OSHA standard into part 170 would ensure that handlers understand how to wear respirators properly, are medically fit to use respirators, and receive training on respirator use. It would also ensure that if technology advances lead OSHA to amend its standard, the change would automatically apply to pesticide uses subject to the WPS as well. EPA believes this proposal would better protect handlers from respiratory hazards. This requirement would be limited to products covered by the WPS.

In order for respirators to provide the intended protection, they must be fitted to the specific user. Fit testing ensures that the respirator seals completely on the face. Respirator wearers must be able to recognize when the seal is broken so that they may correct the fit or remove themselves from the exposure area.

The respirator wearer's respiratory system can be stressed because intake of breath is more difficult while wearing a respirator. For example, persons with medical limitations may be at risk of cardiac problems from the stress of the additional effort to inhale. Other potential negative impacts for respirator wearers include stress on the pulmonary system and even claustrophobia (Ref. 93). These potential negative health impacts can be avoided by doing a fit test of the respirator and if necessary, a medical evaluation.

In other industries where respirators are required for work around hazardous chemicals, OSHA requirements ensure that users wear them appropriately. Because pesticide use in agriculture is

outside of OSHA's scope [see Unit IV.D.], handlers of pesticides who use respirators are not protected to the same degree as workers in other industries although they face similar risks. Handlers can be exposed to significant inhalation risks during pesticide mixing, loading, and application.

EPA believes incorporation of the OSHA standard will provide employers and handlers with more specific information on what it means to ensure that a respirator fits correctly and ensure that respirators are maintained properly to protect handlers.

The proposed regulatory text concerning respirator use requirements appears in § 170.207(b)(9) of the proposed rule.

5. *Costs and benefits.* EPA estimates the cost to employers of complying with the clarification of the WPS respirator requirements to reference the OSHA standard would be \$10.6 million annually, or about \$54 for agricultural establishments per year and \$3 for commercial pesticide handling establishments per year. The cost to commercial pesticide handling establishments only reflects the cost of recordkeeping because EPA assumes that they already comply with OSHA's respirator requirements because they engage in activities outside of the scope of the WPS that are covered by OSHA. EPA believes the cost estimates for agricultural establishments are very conservative because EPA believes that many establishment owners already are required to comply with OSHA requirements related to respirator use for other reasons. This proposal clarifies the existing requirement, which requires employers to ensure that handlers' PPE fits properly and to perform proper maintenance.

EPA cannot quantify the benefits associated with this proposal. However, EPA believes ensuring that handlers can safely use respirators and those respirators fit properly would increase effectiveness of the protections offered by respirators. This would ultimately lead to a reduction in occupational pesticide-related illnesses.

6. *Alternative options considered but not proposed.* The Agency considered amending 40 CFR part 156, which addresses labeling requirements, to require respirator fit testing, training, and medical evaluation requirements in accordance with OSHA standard 29 CFR 1910.134 on all labeling for pesticide products that require respirators other than filtering face pieces or dust masks. This proposal, however, would go beyond the scope of the WPS rule amendments, which focuses on agricultural pesticide use. Implementing

this option would require changes to all pesticide labeling with respirator requirements and would likely take over three years to implement, based on necessary rulemaking for all labeling and the process for realizing changes on labeling of products in the field. The relabeling process would significantly delay protections to handlers. EPA may consider whether to take this action independently from the changes proposed in this proposed rule.

The Agency also considered the option of only establishing these requirements on individual WPS product labeling, on a product-by-product basis. Some proportion of the products covered by the WPS may already have these requirements on their labeling. For those products that lack the requirements, EPA recognized that it may take significantly longer for these protections to be added to labeling, and so opted to propose the revisions in part 170, where adherence to the OSHA standard would have the legal effect of labeling instructions without the need for re-labeling.

#### **XVII. Monitoring Handler Exposure to Cholinesterase-Inhibiting Pesticides**

1. *Decision Not to Propose.* EPA considered proposing cholinesterase (ChE) monitoring of handlers to support mitigation of handlers' exposure to ChE-inhibiting pesticides. Currently, part 170 has no requirement to monitor ChE levels in workers or handlers. EPA believes that its product-specific risk assessment and registration process described in Unit III establishes adequate protections for handlers from undue risk of pesticide exposure. Additionally, other proposed changes proactively address some of the risks to handler health that have been identified by state-based ChE monitoring programs. The Agency does not believe that the anticipated benefits of a ChE monitoring program would justify the costs to handlers and employers and would be reactive, catching incidents after they occur rather than working to stop them from happening. Therefore, the Agency is not proposing to add a requirement for monitoring ChE inhibition in handlers at this time.

2. *Background.* ChE refers to a family of enzymes that are critical to proper nerve function in insects and humans. ChE permits the transmission of signals across the space between the nerves called the synapse. ChE-inhibiting pesticides block the transmission of these signals, resulting in adverse symptoms. Acute poisoning symptoms include nausea, dizziness, shortness of breath, fatigue, excessive salivation, and, in extreme cases, death. Except in

severe cases, the treatment for persons who have been exposed to ChE-inhibiting pesticides usually involves removal from the work activities that result in the exposure.

Organophosphate (OP) and N-methyl carbamate (carbamate) pesticides, which are widely used in agriculture, are known inhibitors of ChE levels in humans. The OPs and carbamate pesticides that present the highest acute toxicity are in EPA's Toxicity Categories I and II, indicated by the signal words "DANGER" and "WARNING", respectively, on the product's label. Tests for ChE depression exist only for these types of pesticides; therefore, the development and implementation of a monitoring system would only provide information related to the use of a small subset of products, not a general workplace hazard monitoring program.

An individual's ChE level can be determined with a blood test. There is no universal normal range for ChE levels because baseline levels vary widely between individuals; therefore, it is important that an individual's initial baseline level be established before exposure to ChE-inhibiting pesticides. Comparison of this baseline level to the ChE level from the handler post-exposure can determine the level of inhibition.

Stakeholders have recommended ChE monitoring for handlers. In a 2006 letter to the Administrator, Farmworker Justice recommended medical monitoring of pesticide handlers who mix, load or apply Toxicity Category I or II OPs or carbamates for 30 hours or more in a 30-day period (Ref. 35).

Some states, including California and Washington, have adopted rules to require ChE monitoring. EPA reviewed California and Washington State's ChE monitoring rules when considering ChE monitoring on a national level.

Established in 1974, the California Department of Pesticide Regulation program requires monitoring for handlers of OPs and carbamate products with the signal word "DANGER" or "WARNING" on their labels (Ref. 94 p. Section 6728). For handlers who work with the types of pesticides listed above for more than 6 days in a 30-day period, California's regulations require that employers have the handlers tested to establish baseline ChE levels and to monitor any change after handling activities. Employers must retain records of handler activities related to these pesticides as well. To avoid the expense of sending a handler for blood testing, California believes that many employers limit handlers' exposures to these pesticides to less than six days in a 30-day period.

Washington State's Department of Labor and Industries established a voluntary ChE monitoring system for handlers in 2004. Employers must offer the option of monitoring to the handlers, who may decline after they have received training on the hazards posed by ChE inhibition and a consultation with a health care practitioner. In addition, for handlers who use Toxicity Category I or II OP or carbamate pesticides, employers must:

- Record the number of hours employees spend handling these pesticides.
- Implement a medical monitoring program for handlers who could meet or exceed the handling threshold of 30 or more hours in any consecutive 30-day period.
- Identify a medical provider to provide medical monitoring services.
- Make baseline and periodic ChE testing available to employees who could meet or exceed the handling threshold.
- Investigate work practices when a handler's red blood cell (RBC) or serum ChE level drops more than 20 percent below the employee's personal baseline.
- Remove employees from handling and other exposures to organophosphate and N-methyl-carbamate pesticides when recommended by the health care provider.
- Provide training on ChE monitoring to covered employees.
- Report employee handling hours to the medical provider with each periodic test.
- Maintain medical monitoring and other records for seven years (Ref. 95).

For those handlers who opt for monitoring, the rule also requires that handlers with red blood cell ChE depressions of greater than 30% or serum depressions greater than 40% from their personal baseline be removed from handling the listed pesticides until the handler's ChE levels have returned to within 20% of his or her personal baseline and that the employer conduct a work practice investigation.

Washington State provides reimbursement to agricultural employers for testing services and related administrative program costs. In 2009, Washington State reimbursed 61 employers with \$129,000 of costs (Ref. 96 p. 3). The reimbursement costs included baseline testing for 2,060 handlers and at least one additional test for 249 of the handlers who had a baseline test (Ref. 96, p. 3).

Washington State's Department of Labor and Industries ChE monitoring Cost Benefit Determination and Small Business Impact Statement identified

the following benefits of ChE monitoring:

- Prevention of illness after over-exposure.
- Increased hazard awareness and improve workplace safety related to pesticide use.
- Improved pesticide illness diagnosis and reporting.
- Greater certainty about frequency of pesticide over-exposure.
- Decreased risk of unintended exposures to handlers' families.

### 3. *Details of decision not to propose.*

After reviewing the experiences of Washington State and California, as well as the estimated costs of a national ChE monitoring program, the Agency has decided not to propose establishing a ChE monitoring program for handlers. EPA believes that the existing risk assessments and label-based risk mitigation measures, in combination with the proposed changes to expand handler training and to adopt OSHA respirator standards, would be sufficient to prevent unreasonable adverse effects to handlers working with OPs and carbamates.

The Agency believes that Washington State's efforts have identified the primary reasons for ChE inhibition among pesticide handlers. In Washington State, the Department of Labor and Industries conducts follow up investigations when monitoring indicates ChE inhibition is greater than 20%. Review of pesticide worker protection programs highlighted potential exposure scenarios and violations of the WPS requirements including areas such as decontamination, PPE, and respiratory protection (Ref. 97). The findings from the follow-up suggest that in many cases ChE depression was caused by handlers not following basic safety and hygiene procedures, e.g., not wearing the label-required PPE and failing to wash before meals or bathroom breaks (Ref. 97, pp. 10–11). Additionally, several handlers, who did wear respirators as required by labeling, had beards, which compromised the seal between the face and the respirator and reduced the protection intended to be afforded by the equipment. Using this information, Washington State developed training for handlers specifically on decontamination and proper use of PPE.

This proposed rule would address Washington State's findings by requiring expanded handler training that covers reducing take-home exposure, proper use and decontamination of PPE, and more frequent handler training. [See Unit VII.E.] The Agency is also proposing requirements for fit testing and training

on proper respirator use for handlers. [See Unit XVI.E.]

As a result of the reregistration process for the OPs and carbamates, revised labeling with increased protections is replacing the older labeling in the field. EPA expects that many of the new mitigation measures will result in lowered handler exposure. Key improvements include requirements for closed system mixing and loading, additional PPE, and reductions to rates of application and number of annual applications permitted. Moreover, the uses of some highly acutely toxic OPs are being phased out (Ref. 98). EPA recognizes that some products with the most current label language have not yet reached field users. For example, in the first years (2004 and 2005) of the Washington State program, many applicators were not wearing respirators when applying the OP pesticide Lorsban via air blast (Ref. 99) (Ref. 100). Inspectors learned that applicators were still using old product and the corresponding labeling, which did not require respirator use for handlers. This use resulted in higher exposure to the pesticide handlers as a result. EPA expects that as product labeling with additional risk mitigation measures reaches the field handlers complying with the new requirements would have a lower potential for exposure.

EPA believes that product-specific risk mitigation measures combined with increased handler protections outlined in this proposal would appropriately address the elevated potential for ChE inhibition in handlers. Moreover, the training and PPE elements of the proposed rule are expected to have the combined effect of providing important protective benefits to all pesticide handlers through increased knowledge of exposure risks and prevention strategies, ultimately leading to a reduction of pesticide exposures. EPA favors this approach over ChE monitoring because it prevents handler exposure rather than addressing it after it occurs. EPA does not believe that the cost and burden of implementing a national ChE monitoring program, which would only identify a problem after the exposure has occurred, would be justified by the limited benefits achieved by removing a handler from the treated area once pesticide exposure has inhibited ChE levels.

4. *Costs and benefits.* In 2003, Washington State developed a Benefit-Cost Determination document to estimate the costs of implementing their ChE monitoring program. The central estimated compliance cost in year one was \$848,490, and \$1,272,487 in year

two (Ref. 101 p. 23). The costs for which employers can be reimbursed under Washington's program include medical (consultations, follow-up visits and procedures, and blood draws), recordkeeping to record handling hours for monitored handlers, wages for time spent in training for ChE monitoring, and mileage for travel costs associated with evaluations and training. The expenses for which employers are reimbursed by Washington State provide insight as to the costs and activities of the employers and handlers participating in the ChE program, but do not estimate the cost of a national ChE monitoring program.

In the proposal's "Economic Analysis of Proposed Revisions to the Worker Protection Standard," the incremental cost of a monitoring program, based primarily on California's and Washington's programs, is estimated to be \$15.2 million annually, or about \$53 per agricultural establishment per year and \$120 per commercial pesticide handling establishment per year. The requirements of a national ChE monitoring program have not been developed sufficiently to provide a precise cost analysis, but it would likely include program components such as training, recordkeeping, clinical testing, and field investigations. The estimated costs do not include the states' costs to build infrastructure to support ChE monitoring or to cover continued laboratory costs such as equipment maintenance and administrative support.

For more discussion of the costs of the proposal, see the "Economic Analysis of Proposed Revisions to the Worker Protection Standard," Chapter 3 Cost Analysis (Ref. 1).

The proposed handler training and PPE requirements are proactive and are expected to prevent handler exposure whereas cholinesterase monitoring would only identify a problem after the exposure has occurred. As a result, EPA concludes that the cost of implementing a national cholinesterase monitoring program is not justified by its limited benefits for a subpopulation of the nation's pesticide handlers. The training and PPE elements of the proposed rule, however, are expected to have the combined effect of providing important protective benefits to all pesticide handlers through increased knowledge of exposure risks and prevention strategies, ultimately leading to a reduction of pesticide exposures.

5. *Alternative options considered.* EPA considered restricting the number of hours handlers may work with OPs and carbamates in a given timeframe (for example, no more than 30 hours of

handling these pesticides over a 30-day period). However, EPA is not aware of data that would provide a basis for establishing this type of proposal.

6. *Request for comment.* EPA specifically seeks feedback on its decision not to propose a requirement for mandatory ChE monitoring, including comment on the following questions:

- Do you believe the costs and burdens of a national ChE monitoring program would be justified by the protections to handler health? If so, please provide justification.
- Do you agree that it is more protective to prevent handler exposure than to address it after it occurs? If so, why? If not, do you have an alternative proposal to address handler exposure?
- Does other information exist on the benefits or challenges of ChE monitoring that the Agency has not presented in this proposal? If so, please provide.

## VIII. Exemptions and Exceptions

### A. Immediate Family

1. *Decision not to propose.* EPA considered eliminating the existing exemption for workers and handlers under age 16 employed (receiving a wage or salary) by immediate family members; however, the available information may not be sufficient to support this option. Accordingly, EPA is not proposing to amend the immediate family exemption to impose any age requirements on establishments that qualify for the immediate family exemption to the WPS. Although the WPS exempts owners and their immediate family members from many provisions of the rule, EPA provides the exemption based upon assurances that owners voluntarily provide to immediate family members essentially the same protections required for workers and handlers covered by the WPS. [Note: EPA is proposing to expand the definition of "immediate family" to better reflect the range of familial relationships that could occur. See Unit XIX.A., for a discussion of the revised definition.]

2. *Existing WPS regulations.* The WPS exempts the owners of agricultural establishments from providing certain WPS protections to themselves and their immediate family members (40 CFR 170.104(a) and 170.204(a)). Specifically, the agricultural establishment owner is exempt from complying with the following requirements for immediate family members performing tasks as workers: Sections of the early-entry restrictions; providing pesticide safety training or other safety information; cleaning, storing, and maintaining PPE;

maintaining decontamination sites and supplies; providing notice of and specific information about applications; and providing emergency assistance. Similarly for immediate family members performing handler tasks, the agricultural establishment owner is exempt from the following requirements: Providing pesticide safety training and other safety information such as restrictions during applications, knowledge of labeling and site-specific information, and safe operation of equipment; ensuring proper use, cleaning, and maintenance of PPE and avoiding heat-related illness while using PPE; maintaining decontamination sites and supplies; and providing emergency assistance. The agricultural establishment owner must comply with all other sections of the WPS. The immediate family includes only the spouse, parents, stepparents, foster parents, father-in-law, mother-in-law, children, stepchildren, foster children, sons-in-law, daughters-in-law, grandparents, grandchildren, brothers, sisters, brothers-in-law, and sisters-in-law of the owner of the agricultural establishment.

In addition, the definitions of workers and handlers require that they are employed for compensation in order to receive protection under the WPS. Therefore, any person performing worker or handler tasks who does not receive a wage or salary is not covered by any aspect of the WPS.

3. *Summary of the issues.* Stakeholder feedback, reports from the GAO, the CHPAC and recent research have indicated an increased awareness of the need to protect all children from adverse health effects of pesticide exposure (Ref. 20) (Ref. 74) (Ref. 102) (Ref. 103). [See Unit V.C. and V.E.] During the National Assessment, EPA did not seek specific stakeholder feedback on the existing immediate family exemption and whether it should be amended.

Input from the agricultural community indicates that emergency assistance and other protections are among the reasonable steps an owner of an agricultural establishment would take to protect family members.

4. *Options considered and not proposed.* The Agency considered narrowing the immediate family exemption in two ways: (1) Limiting it only to immediate family members of an owner of an agricultural establishment who are at least 16 years old, and (2) modifying the scope of the requirements that are exempted by eliminating from the list emergency assistance for workers and handlers and handler monitoring during fumigant application.

Limiting the exemption to employed family members who are at least 16 years old would not prohibit agricultural establishment owners from allowing their immediate family members under 16 years old to perform WPS tasks. The proposed definition of “employ” specifies salary or wages;

other forms of compensation are not included in the definition. Therefore, immediate family members who are compensated in other ways besides salary or wages, but not “employed” by the WPS definition, would continue to be exempted from certain specified provisions of the WPS. As under the

current rule, any person, including immediate family members under 16 years old, who does not receive a wage or salary would not be covered by any provisions of the WPS. See tables 1 and 2.

TABLE 1—CONSIDERED CHANGES TO THE WPS IMMEDIATE FAMILY EXEMPTION—MINIMUM AGE, EMERGENCY ASSISTANCE AND HANDLER MONITORING DURING FUMIGANT APPLICATIONS

If the immediate family members are:	Then under the considered changes, the employer:
<ul style="list-style-type: none"> <li>• Under 16 years old AND .....</li> <li>• Employed on the agricultural establishment to perform WPS tasks (receiving a wage or salary).</li> </ul>	<ul style="list-style-type: none"> <li>• Would have to comply with all relevant provisions of the WPS (no immediate family exemption) for those immediate family members</li> <li>• Would no longer have an exemption from providing emergency assistance to workers and handlers and monitoring handlers during fumigant applications</li> </ul>

EPA acknowledges requests from a range of stakeholders to ensure protection of all children working with or around pesticides. Recent findings suggest that working with or around pesticides may increase potential risks of harm to children’s developing systems and that children’s maturity and decision-making skills are not fully developed. EPA believes that owners of agricultural establishments generally protect family members independent of government regulation. EPA believes that owners of agricultural establishments who employ only members of their immediate families have access to a variety of sources of information, outside the scope of the WPS, on how to provide adequate protections from pesticide exposure to their family members. Programs such as 4–H and Future Farmers of America provide information to youth. The USDA’s Cooperative Extension System, based out of land grant universities, operates agricultural outreach programs in every state. The Cooperative Extension System offers formal outreach, such as county or state farm safety days, and informal outreach and advice to individual farmers. The American Farm Bureau Federation and affiliated state farm bureau operations also provide outreach on topics including pesticide safety to farmers and their families. Finally, some farm owners may be certified as pesticide applicators. Certified pesticide applicators must pass an exam or attend a training program at the state level to demonstrate they are competent to use and manage pesticides safely. In addition, certified applicators are required to complete continuing education, which includes information and reminders about using pesticides safely and protecting others from

pesticide exposure. It is not clear from the available information that the burdens associated with narrowing the existing exemption would produce commensurate risk reductions. Although EPA has not proposed changing the existing exemption from the requirement to provide certain WPS protections to immediate family members, EPA is requesting comment on this issue.

EPA also considered eliminating the current exemption at § 170.204(a)(i) in the case of immediate family members who are handling highly toxic pesticides or working in enclosed fumigated areas. EPA believes that owners of agricultural establishments generally protect family members independent of government regulation. It is not clear from the available information that the burdens associated with narrowing the existing exemption would produce commensurate risk reductions. Although EPA has not proposed eliminating the current exemption in the case of immediate family members who are handling highly toxic pesticides or working in enclosed fumigated areas, EPA is requesting comment on this issue.

Lastly, EPA considered eliminating the exemption for establishment owners to provide emergency assistance for immediate family members who are workers or handlers. In the event of a pesticide poisoning, certain symptoms, such as respiratory distress, need to be addressed promptly to avoid more serious problems, such as heart failure or an inability to breathe. Again, the Agency recognizes that establishment owners working with immediate family members have a vested interest in their family members’ well being. EPA believes that additional regulation is not necessary to ensure that immediate

family members who are workers or handlers receive assistance in the event of a pesticide-related emergency. It is not clear from the available information that the burdens associated with narrowing the existing exemption would produce commensurate risk reductions. Although EPA has not proposed eliminating the current exemption to providing emergency assistance to workers and handlers, EPA is requesting comment on this issue.

5. *Request for comment.* EPA specifically requests comment on the immediate family exemptions in the WPS.

- Would this requirement have a different impact on small farms than on larger establishments? If so, please explain the likely impact.
- Does exempting agricultural establishment owners from the requirements to provide certain protections to immediate family members present unreasonable risks to family members who are under 16 years old?
- What would be the impact of limiting the immediate family exemption to family members who are at least 16 years old and who are employed by the owner?
- How many agricultural establishments would be affected if EPA decided to limit the exemption to immediate family members at least 16 years old?

*B. Crop Advisors and Employees*

1. *Overview.* The existing WPS allows exemptions from some requirements for crop advisors and their employees. The Agency proposes to eliminate exemptions from protections for employees directly supervised by certified or licensed crop advisors. The Agency also proposes to eliminate the

exemption from the worker decontamination and emergency assistance provisions for certified or licensed crop advisors employed as workers on agricultural establishments.

2. *Existing WPS regulations.* The WPS allows crop advisor tasks to be conducted during pesticide application and during subsequent REIs.

As outlined in 40 CFR 170.5, crop advisor tasks include assessing pest numbers or damage, pesticide distribution, or the status or requirements of agricultural plants, but not performing hand labor tasks. When performing crop advising tasks after the REI has expired or performing hand labor tasks, and employed by the agricultural establishment, a crop advisor is considered a worker under the WPS. A person employed by a commercial pesticide handling establishment performing crop advising tasks after expiration of an REI is not subject to any provisions of the rule.

The WPS exempts the employer from complying with some handler requirements when the employee performs crop advising tasks during an REI and that is a certified or licensed crop advisor or directly supervised by a certified or licensed crop advisor. To qualify for this exemption, the crop advisor certification or licensing program must include, at a minimum, all information listed under handler training, 40 CFR 170.230(c)(4). Under the current WPS, the certified crop advisor must make specific determinations regarding the appropriate PPE, decontamination and safe method of conduct for those working under his or her direct supervision. This information, as well as information regarding the product, method and time of application, REI, tasks, and contact information, must be conveyed by the certified crop advisor to each person under his supervision. Currently, the WPS exempts employers from complying with worker requirements such as providing decontamination supplies and emergency assistance for certified or licensed crop advisors and persons they directly supervise.

3. *Summary of the issues.* State regulatory agencies and their representatives have expressed concerns with the current crop advisor exemptions, noting that those working under the supervision of the crop advisors may be unaware of the risks posed by pesticides.

4. *Details of the proposal/rationale.* The Agency proposes to limit this exemption to crop advisors only, eliminating from the exemption employees directly supervised by

certified or licensed crop advisors. The Agency believes employees who are not certified or licensed as crop advisors but who are performing crop advising tasks may be unable to make appropriate judgments regarding personal risk because they are not required to receive information about the risks of working around pesticide-treated areas and how to protect themselves from exposure.

If a person performs crop advising activities under the supervision of a certified crop advisor, he or she may not understand the factors influencing the risks well enough to take appropriate protective measures or to alert the supervising crop advisor to observations that could alter the initial decisions about the protective measures to be taken.

The Agency also proposes to eliminate the exemption for certified or licensed crop advisors employed as workers on agricultural establishments from the worker decontamination and emergency assistance provisions. While EPA believes this exemption applies to a small number of people it is important that all workers on agricultural establishments have access to decontamination supplies and emergency assistance.

The rule would retain the exemption for certified or licensed crop advisors to enter and perform crop advising tasks during an REI.

The Agency has discussed these exemptions with the National Alliance of Independent Crop Consultants (NAICC). NAICC representatives indicated that entry to perform crop advising tasks during an REI is a rare event, especially for persons who are not certified or licensed crop advisors (Ref. 104). Overall, the Agency believes that the proposed revision would not have a significant impact on the majority of crop advisors.

The proposed regulatory text concerning the crop advisor exemption appears in § 170.301(b) of the proposed rule.

5. *Costs and benefits.* EPA estimates the cost of amending the exemption for crop advisors would be \$1,400, or less than \$0.01 per establishment. NAICC representatives noted that there may be some cost to provide the WPS protections to currently-exempt supervised employees. The Agency believes that there are few certified crop advisors retained directly by agricultural establishments. For a discussion of the costs of the proposals and alternatives, see the "Economic Analysis of Proposed Revisions to the Worker Protection Standard," Chapter 3 Cost Analysis (Ref. 1).

6. *Request for comment.* EPA specifically requests comment on the following questions:

- Should EPA consider an alternative to this proposal? If so, what alternative and why?
- Should EPA require specific training for the employees of crop advisors to ensure that they understand the risks of entering and working in areas treated with pesticides? If so, please provide specific information on the type of training and anticipated benefit to crop advisor employees. Also, please comment on whether a crop adviser's employees, who have received such training, should be exempt from the WPS requirements for provisions for decontamination supplies and emergency assistance and from following the labeling requirements for PPE for early entry.

### *C. Revise the Exception to the Requirement for Workers To Be Fully Trained Before Entering Pesticide-Treated Areas*

1. *Overview.* For workers who are not performing early-entry activities, the existing WPS allows employers to delay training until before work begins on the 6th day of entry into a treated area providing the full required pesticide safety training to workers performing WPS-covered activities (referred to as the "grace period"). During the grace period, the current WPS requires agricultural employers to provide an abbreviated training covering two major points: Where pesticides may be encountered and how to prevent pesticides from entering a worker's body. In order to balance the need for workers to receive sufficient information to protect themselves and the need for agricultural employers to have flexibility in employing workers, EPA proposes to shorten the grace period to two days and to require that workers receive training on protecting themselves and their families from pesticide exposure prior to entering a pesticide-treated area during the grace period. In essence, this exception to the general requirement that all workers be fully trained prior to entering a pesticide-treated area to perform WPS tasks would allow agricultural employers who have provided workers with certain essential safety information to direct those workers to perform WPS tasks for no more than 2 days before providing them with the full WPS pesticide safety training, and require the employer to maintain records of the information transfer for 2 years. The agricultural employer would be required to provide each such worker full pesticide safety training before allowing

the worker to enter a treated area for a third day. This proposal would provide the agricultural employer with the flexibility to choose whether to provide workers with full pesticide safety training immediately upon employment or to utilize the 2 day grace period, provided they comply with the conditions of the exception. EPA expects this change would improve workers' understanding of the risks they may face and how to protect themselves when they work in areas treated with WPS-covered pesticides, while maintaining flexibility for agricultural employers.

2. *Existing WPS regulations.* When EPA was developing the 1992 WPS, agricultural employers argued that they needed a training grace period because qualified trainers were not available in sufficient numbers to meet the need for worker training. To accommodate the need for flexibility for agricultural employers and in recognition of the high turnover in the workforce on some establishments, EPA adopted the grace period. The 1992 rule allowed agricultural employers to direct workers to perform work in pesticide-treated areas for up to 15 days before the employer was required to provide the full pesticide safety training outlined in § 170.130 (57 FR 38151; August 21, 1992). On January 1, 1996, EPA reduced the grace period to 5 days (60 FR 21944; May 3, 1995).

Under 40 CFR 170.130(a)(3)(ii), agricultural employers may direct workers to perform work (except for early-entry activities) in areas that, within the last 30 days, have been treated with a pesticide bearing a label requiring compliance with the WPS or have been under an REI for such pesticide for up to 5 days before the employer must provide the full pesticide safety training outlined in 40 CFR 170.130. During the grace period, employers must inform workers of the following points:

- Pesticides may be on or in plants, soil, irrigation water, or drifting from nearby applications;
- Prevent pesticides from entering your body by:
  - Following directions and/or signs about keeping out of treated or restricted areas.
  - Washing before eating, drinking, using chewing gum or tobacco, or using the toilet.
  - Wearing work clothing that protects the body from pesticide residues.
  - Washing/showering with soap and water, shampoo hair, and put on clean clothes after work.

—Washing work clothes separately from other clothes before wearing them again.

—Washing immediately in the nearest clean water if pesticides are spilled or sprayed on the body. As soon as possible, shower, shampoo, and change into clean clothes.

- Further training will be provided within 5 days.

See 40 CFR 170.130(c). Before the 6th day that workers remain on the establishment working in areas that, within the last 30 days, have been treated with a pesticide bearing a label requiring compliance with the WPS or have been under an REI for such pesticide, the agricultural employer must provide the full pesticide safety training.

### 3. *Summary of the issues.*

Stakeholders, including Farmworker Justice and Migrant Clinicians Network, have repeatedly raised concerns for workers entering the pesticide-treated areas without receiving the full pesticide safety training (Ref. 35). They noted that the basic safety information provided prior to entry into a treated area does not describe the hazards associated with pesticides, how to recognize pesticide poisoning symptoms, or how to access emergency medical care. The lack of information may be of particular concern for workers performing tasks in recently treated areas or adjacent to an area being treated because they may not know what to do if they are sprayed or feel sick. Stakeholders also noted that a worker may be employed for fewer than 5 days on each of a series of farms and, as a result, may be at risk of significant pesticide exposure without ever receiving the full pesticide safety training. This situation is especially likely to occur during harvest periods, as workers may move from one farm to another as the harvest is completed, resulting in potentially large numbers of workers exposed to pesticides without full safety training.

Many of the SERs consulted by the SBAR panel requested that EPA retain the current 5 day grace period (Ref. 18, p. 21). They noted that employers have many legal obligations related to hiring a new employee, and pesticide worker safety training is just one element. In comments submitted to EPA, SERs informed EPA that the grace period offered agricultural employers flexibility about when to provide full training to workers without negatively impacting the performing of WPS tasks essential to agricultural production.

OSHA requires that employers provide training on potential chemical

hazards that employees may face in the workplace before allowing employees to enter the area to begin work. These standards require employers to provide hazard information to workers before they begin any tasks that may expose them to a hazardous material or activity, rather than allowing them to work for a period before receiving the hazard information. See, e.g., the training requirements for employees that may encounter lead, 29 CFR 1962.62(l)(1), asbestos, 29 CFR 1926.1127(m)(4), and cadmium, 29 CFR 1926.1101(k)(9).

4. *Details of the proposal/rationale.* The exception would allow agricultural employers to postpone providing full pesticide training for up to 2 days after the worker begins work in WPS-covered areas. In order to qualify for the exception, agricultural employers would be required to provide certain safety information, which would incorporate both the information currently required by the regulation and additional content, to workers in a language and manner they understand before workers perform any WPS tasks in a treated area. Agricultural employers would also be required to maintain records of the information provided to workers for 2 years. Finally, agricultural employers would be required to provide the full pesticide safety training to workers before sending them into any treated area for a third day where within the last 30 days a pesticide product bearing a label requiring compliance with the WPS has been used, or an REI for such a pesticide has been in effect.

EPA believes that if the shortened grace period is adopted, it is likely to reduce the number of workers that may be exposed to pesticides without having the benefit of the full safety training. EPA proposes to re-characterize the grace period as an exception to the requirement that employers provide workers the full pesticide safety training before the worker may enter a pesticide-treated area. EPA believes that the shortened grace period and the requirement that employers provide certain basic safety information to workers before they enter a treated area (detailed below), and requiring recordkeeping would balance the need for workers to be informed about risks to which they may be exposed and the need for agricultural employers to have some flexibility regarding pesticide safety training. EPA believes re-characterizing the grace period as an exception would also make the regulation easier to understand.

In order to utilize the proposed exception, agricultural employers would need to provide certain safety information to the workers in a language

and manner they understand before the workers enter any pesticide-treated area. The required information would cover four areas: (1) Employer responsibilities for providing worker protections, (2) information about potential hazards in the workplace, (3) how to protect oneself from pesticide exposure and hazards in the workplace, and (4) emergency first aid procedures for pesticide poisonings or injuries. Under the four areas, the full list of topics to be conveyed to workers would be:

#### Employer Responsibilities for Providing Worker Protections

- Agricultural employers are required to provide workers with information and protections designed to reduce work-related pesticide exposures and illnesses. This includes providing pesticide safety information to workers before being directed to work in pesticide treated areas if they have not received full pesticide safety training; providing full pesticide safety training to workers before their 3rd day of work in pesticide treated areas; providing pesticide hazard information for products used on the establishment, decontamination supplies, and emergency medical assistance, and notifying workers of restrictions during applications and on entering pesticide treated areas.
- Agricultural employers must inform workers how to recognize and understand the meaning of the warning sign used for notifying workers of restrictions on entering pesticide treated areas on the establishment. Workers must follow employer directions and/or signs about keeping out of entry restricted or pesticide treated areas.
- Agricultural employers must not allow or direct any worker who has not received full pesticide safety training and additional early entry worker notification to work in any area that is currently under an REI. Employers must comply with minimum age restrictions and notification requirements in order to direct workers to perform early-entry activities.
- Agricultural employers must not allow or direct any worker to mix, load, or apply pesticides or assist in the application of pesticides unless the worker has been trained as a handler.
- Agricultural employers are prohibited from intimidating, threatening, coercing, or discriminating against any worker for the purposes of interfering with any attempt to comply with the requirements of this part, or because the worker has made

a complaint, testified, assisted, or participated in any manner in an investigation, proceeding, or hearing pursuant to this part.

#### Information About Potential Pesticide Hazards in the Workplace

- There are potential sources of pesticide exposure on agricultural establishments and pesticides and/or pesticide residues may be encountered during work activities. This includes pesticides drifting from nearby applications, and that pesticide residues may be on or in plants, soil, irrigation water, tractors, application equipment, or used personal protective equipment.
- Pesticides can cause illness or injury if they enter your body. Pesticides can enter the body by getting them on your skin or in your eyes, by swallowing them, or by breathing in their vapors.
- There are potential hazards from toxicity and exposure that pesticides present to workers, including acute and chronic illnesses/effects, delayed effects, and sensitization.
- There are potential hazards to children and pregnant women from pesticide exposure.

#### How to Protect Yourself From Pesticide Exposure and Hazards in the Workplace

- When working near pesticides or in pesticide treated areas, wear work clothing that protects the body from pesticide residues and always wash hands before eating, drinking, using chewing gum or tobacco, or using the toilet.
- Wash or shower with soap and water, shampoo hair, and change into clean clothes as soon as possible after working near or in pesticide treated areas.
- There are potential hazards from the pesticide residues that may be on work clothing. Wash work clothes before wearing them again, and always wash work clothes separately from other clothes.

#### Emergency First Aid Procedures for Pesticide Poisonings or Injuries

- Pesticides may cause skin rashes or hurt your eyes, nose or throat. Pesticides can make you feel sick in different ways, such as headache or dizziness, muscles pain or cramps, nausea or vomiting, sweating, drooling, fatigue, or trouble breathing.
- Wash immediately in the nearest clean water if pesticides are spilled or sprayed on the body and as soon as possible, shower, shampoo hair, and change into clean clothes. If a pesticide gets in your eyes, hold them

open and rinse with a gentle stream of cool water. Rinse eyes for 15 minutes if possible.

- If you or someone you work with gets sick while working, tell your employer right away. If you suspect you have been injured or made ill from pesticides, get medical help as soon as possible. If you have been injured from pesticides while working, your employer must provide emergency transportation to a nearby medical facility and provide information about the pesticide or pesticides that may have made you sick.

After the employer provides the workers with the safety information in a language and manner they understand, the employer must create a record of the information provided and provide a copy of the record to the worker. The record would include the safety information conveyed to the worker, an affirmation that the worker has been provided a copy of the safety information sheet and that the information was communicated to the worker orally in a language the worker understands, the worker's name, signature, date of birth, the date the information was provided, the employer's name, and employer's phone number or phone number of the establishment. The employer can have all workers sign the record and acknowledgement before providing copies to each worker.

Finally, EPA is committed to protecting vulnerable populations. Workers face risk of occupational exposure to pesticides. Through this proposed change, EPA seeks to mitigate the elevated risk associated with entering a treated area without training on what pesticide risks may be encountered in the workplace and how to protect oneself from pesticide exposure. EPA believes this proposal is consistent with the principles of environmental justice, providing a population that may face disproportionate risks of exposure based on the nature of their tasks, limited understanding of English, low literacy, and low education level with information in advance of the potential for exposure.

The proposed regulatory text establishing a 2 day grace period, altering the requirements for training under the grace period, and establishing a requirement to maintain records for 2 years appears in § 170.309 of the proposed rule.

5. *Costs and benefits.* EPA estimates that replacing the current 5-day grace period with the proposed 2-day exception to the requirement for

employers to provide full pesticide safety training to workers before directing workers to enter a pesticide treated area would cost \$2.3 million, or about \$6 per agricultural establishment. This cost estimate does not include recordkeeping; the cost of the recordkeeping for worker training is discussed in Unit VII.B. For a complete discussion of the costs of the proposals and alternatives, see the “Economic Analysis of Proposed Revisions to the Worker Protection Standard,” Chapter 3 Cost Analysis (Ref. 1).

EPA could not estimate specific benefits associated with this proposal. However, EPA believes that providing certain safety information to workers before they perform WPS tasks and shortening the interval before they receive full training would decrease the number of occupational pesticide-related illnesses because workers would be better informed on how to protect themselves before entering a pesticide-treated area.

6. *Alternative options considered but not proposed.* As an alternative, EPA is considering eliminating the grace period. Under this option, agricultural employers would be required to provide all workers with full pesticide training before sending them into any treated area where within the last 30 days a pesticide product bearing a label requiring compliance with the WPS has been used, or an REI for such a pesticide has been in effect. Eliminating the grace period would ensure that all workers are fully trained on how to protect both themselves and their family members before entering an area covered by the WPS. The estimated cost for eliminating the grace period for worker training would be \$2.8 million, or about \$7 per establishment. The increased cost comes from the employer having to provide full pesticide safety training sessions every time workers enter the establishment to perform WPS tasks, rather than waiting and holding a larger training session for workers hired over a period of a few days. EPA does not have sufficient data to compare the benefits of providing the pesticide safety training before workers enter the treated area to ensure that workers are fully prepared and aware of the potential risks they may encounter in the workplace, and the costs that agricultural employers might incur if the grace period were eliminated.

Information exists that supports the alternative option to eliminate the grace period entirely. First, the number of trainers may be sufficient. EPA reduced the grace period from 15 to 5 days over 10 years ago in recognition that employers had less difficulty finding

someone to provide pesticide safety training to workers. Based on significant outreach and support provided by EPA to training organizations, such as AFOP, sufficient trainers may be available nationally to meet the needs of agricultural employers without a grace period. Second, 90% of workers report employment by 1 or 2 establishments a year (Ref. 3, p. 23). Employers now may deal with less worker turnover and therefore may not need to provide multiple trainings throughout the year. The lower burden on employers makes the call for a grace period less compelling. Lastly, small business representatives advised EPA that they generally provide training to workers upon employment to comply with other regulations or for general orientation (Ref. 18). Under the proposal for worker pesticide safety training, once a worker is trained in a particular year, he or she would receive a record of the training to show subsequent employers, thereby eliminating the need for subsequent employers to repeat the training.

EPA notes that OSHA requires employers in almost all industries to notify their workers of the hazards that may be encountered in the workplace before the work begins (29 CFR 1910.1200(h)). This requirement has been in place since 1983. OSHA established the standard based on the belief that, without adequate knowledge of the potential dangers in the workplace, workers would not be able to take protective measures or avoid hazards (52 FR 31852; August 24, 1987)(59 FR 6126; February 9, 1994) (Ref. 63).

7. *Request for comment.* EPA specifically requests comment on the following:

- Supply of trainers and how quickly they can be available.
- Frequency of hiring new workers during the year.
- Evidence about the frequency of illness for workers who receive basic vs. full pesticide safety training.
- Should EPA eliminate the grace period? Why or why not?
- What would be the impact of eliminating the grace period on agricultural employers, trainers, and/or workers?
- What would be the impact of a shorter grace period on agricultural employers and trainers?
- Would retaining a shorter grace period as proposed negatively impact workers? If so, how?
- Should EPA retain the current 5 day grace period or reduce the grace period to 3 or 4 days? If EPA reduces the grace period to 3 or 4 days, what would be the relative impacts on agricultural

employers and workers as compared to the proposed reduced grace period of 2 days?

## **XIX. General Revisions to the WPS**

### *A. Improved Definitions*

The Agency proposes to revise 40 CFR 170.3 by revising certain definitions to provide greater clarity, by adding several new definitions, and by eliminating several unnecessary definitions. EPA believes that improved definitions would reduce the likelihood of alternative interpretations, while improving compliance and enforceability.

The Agency believes these proposed revisions to the definitions adopt more widely used and commonly accepted “plain English” language, and add clarity and consistency to the rule. The proposed revisions to the definitions also help address regulatory or policy issues raised by state regulatory partners and other program stakeholders. The Agency does not believe the proposed revisions to the definitions will add new regulatory requirements on the regulated community or substantially increase regulatory burden.

The following definitions appear in § 170.5 of the proposed rule.

1. *Revised definitions.* The Agency proposes to revise the following existing definitions: “agricultural employer,” “agricultural establishment,” “agricultural plant,” “commercial pesticide handling establishment,” “crop advisor,” “farm,” “hand labor,” “handler,” “handler employer,” “immediate family,” “nursery,” and “worker.”

The Agency proposes to change the existing definition of “immediate family” as follows: “. . . includes only spouse, parents, stepparents, foster parents, father-in-law, mother-in-law, children, stepchildren, foster children, sons-in-law, daughters-in-law; grandparents, grandchildren, brothers, sisters, brothers-in-law, and sisters-in-law.” The remaining revisions to the existing definitions are simply intended to clarify those terms, rather than substantively alter them. Substantive changes to the immediate family exemption considered but not proposed are discussed in Unit XVIII.A.

2. *New definitions.* The Agency also proposes to add the following new definitions: “authorized representative,” “closed system,” “commercial pesticide handler employer,” “commercial production,” “enclosed space production,” “employ,” “enclosed cab,” “entry-restricted area,” “forest operation,” “labor contractor,” “outdoor production,” “personal protective

equipment,” “safety data sheet,” “use,” and “worker housing area.”

As an example of the changes to the definitions, the Agency proposes to define “employ” as the receipt of either wages or salary for work. Under the current rule, a person is covered by the WPS if he or she receives any type of compensation. Current interpretations of compensation include students receiving credits and garden club members receiving benefits such as coffee and cake at meetings. The proposed definition would limit WPS coverage to only those who receive pay and perform worker or handler tasks when a pesticide has been applied or an REI in effect on the establishment within the past 30 days.

3. *Definitions to be deleted.* The Agency proposes to delete the definition of “greenhouse” because it is no longer necessary as a result of the proposed addition of “enclosed space production.” The agency also proposes to delete the definition of “forest” because it is being replaced with “forest operation.” Additional details regarding significant proposed definition changes are discussed above.

4. *Request for comment.* EPA specifically requests comment on the following questions:

- What impact do you expect on employers, workers, handlers, or other stakeholders as a result of replacing the terms “farms,” “forests,” “nurseries,” and “greenhouses” with the terms “outdoor production” and “enclosed space production”?
- What are the impacts of revising the definition of “immediate family”?
- Should EPA consider including cousins in the definition of immediate family? Why or why not?
- What are the impacts of adding a definition of “employ”?
- What are the impacts of adding a definition of “authorized representative”?
- Are there other terms that the Agency should consider clarifying, redefining, or eliminating from the rule? If so, please provide detail about the term(s) and rationale for change.

#### B. Restructuring of Part 170

In order to improve clarity and implement the principles of using plain language in regulations, EPA proposes to reorganize the structure of part 170 and to rename the rule. EPA expects the revised part 170 will be easier to read and understand, thereby improving compliance by worker and handler employers.

1. *Existing part 170.* Part 170, the Worker Protection Standard, is organized into three subparts: “General

Provisions,” “Standard for Workers,” and “Standard for Handlers.” Often, content that applies to both workers and handlers is repeated in two sections. The exemptions and exceptions are listed throughout the rule. EPA has received feedback from states, farmworker groups, employers, trainers, and other stakeholder groups that part 170 is difficult to follow (Ref. 44).

2. *Details of the proposed rule.* EPA proposes to rename the regulation “Requirements for Protection of Agricultural Workers and Pesticide Handlers.” The proposal would reorganize the rule into four subparts: “General Provisions,” “Requirements for Protection of Agricultural Workers,” “Requirements for Protection of Pesticide Handlers,” and “Exemptions and Exceptions.” The “General Provisions” subpart would describe certain obligations for agricultural employers, handler employers, and those requirements that apply to both. The subparts “Requirements for Protection of Agricultural Workers” and “Requirements for Protection of Pesticide Handlers” would provide information that supplements the general duties and obligations for employers and outline the content of the training and decontamination supplies that the employer must provide for workers and handlers respectively. Finally, EPA consolidated most of the exceptions and exemptions into a separate subpart to make them easier to find and reference.

EPA believes that the restructured rule will facilitate better understanding of the rule by employers and state and tribal regulatory agencies. EPA specifically requests comment on the following questions:

- Is the restructuring clearer and easier to read and understand?
- Are there other ways that part 170 could be simplified or made clearer? If so, please provide suggested language and rationale.

#### XX. Implementation of this Proposal

EPA proposes to make the final rule effective 60 days after the date of publication in the **Federal Register**; however, compliance with certain provisions, including the additional pesticide safety training content and pesticide safety information and new signs for posting, would not be required until 2 years after the publication date of the final rule. The 2 year delay between publication of the final rule and the effective date of the changes would give state and tribal regulators, employers, trainers, and other stakeholders time to make the necessary changes to their daily activities and for

materials and signs to be developed and made available. EPA expects that employers would need new signs and training materials to transition to new requirements. State regulators would need to become familiar with the new regulation and conduct outreach to the regulated community.

Trainers would have to become familiar with the additional training content, to ensure that they meet any eligibility requirements, and to obtain new training materials. EPA recognizes that training materials that comply with the proposed expanded content must be available before the effective date of the new training requirements. Therefore, EPA has linked the effective date of the implementation of the proposed additional pesticide safety training requirements for workers and handlers to an announcement of availability of materials that satisfy the new requirements in the **Federal Register**. If EPA announces the availability of the materials sooner than 18 months after the effective date of the final rule, then the new training requirements would go into effect 2 years after the effective date of the final rule. If EPA announces the availability of materials that comply with the proposed requirements more than 18 months after the effective date of the final rule, then the proposed training requirements would not take effect until 180 days after the announcement of availability publishes in the **Federal Register**.

To facilitate implementation, EPA plans to issue a “how to comply” guidance document at the time the final rule is published, to develop and disseminate new training materials, to conduct outreach to all potentially affected parties, and to provide assistance to states.

EPA specifically requests comment on the following questions:

- Please provide input on how to measure the efficacy of the revised WPS once implemented. Describe specific data elements and how EPA could use them to determine whether the revised regulation is effective.
- What data would help to evaluate the impacts (costs) and benefits of the rule after implementation? Describe specific data elements and how EPA could use them to evaluate the costs and benefits of the rule.
- If EPA evaluates the effectiveness and/or the impacts and benefits of the rule, what timeframe should be used to conduct the evaluation, e.g., should EPA begin a review after the rule is fully implemented or a specific time period after full implementation? For how long should EPA conduct the evaluation? Please provide additional information

on methodology that could be used to conduct any evaluation.

## XXI. Reference List

1. U.S. Environmental Protection Agency. Office of Pesticide Programs. 2013. *Economic Analysis of Proposed Revisions to the Worker Protection Standard*. Washington, DC.
2. Lee, S-J, Mehler, L, Beckman, J, Diebolt-Brown, B, Prado, J, Lackovic, M, et al. "Acute Pesticide Illnesses Associated with Off-Target Pesticide Drift from Agricultural Applications." *Environ Health Perspect* 119 (2011):1162-1169.
3. U.S. Department of Labor. Office of the Assistant Secretary for Policy. Office of Programmatic Policy. 2005. *Findings From the National Agricultural Workers Survey (NAWS) 2001-2002: A Demographic and Employment Profile of United States Farm Workers*. Research Report No. 9.
4. S. Rep. No. 92-883 (Part II), 92nd Congress, 2nd Session at 43-46 (1972). U.S. Code Congressional and Administrative News 1972, p. 4063.
5. Rosenbaum, S and Shin, P. "Migrant and Seasonal Farmworkers: Health Insurance Coverage and Access to Care." *The Kaiser Commission on Medicaid and the Uninsured*. May 3, 2005. Pub no. 7314.
6. Kandel, W. 2008. *Profile of Hired Farmworkers, A 2008 Update*. Economic Research Report No. 60. U.S. Department of Agriculture. Economic Research Service.
7. U.S. Environmental Protection Agency. Office of Pesticide Programs. 2007. *OPP Report on Incident Information: The Baseline*.
8. Harchelroad, F, et al. "Treated vs. Reported Toxic Exposures: Discrepancies Between a Poison Control Center and a Member Hospital." *Vet Hum Toxicol* 32 (1990): 156-159.
9. Chafee-Bahamon, C, Caplan, DL and Lovejoy, Jr, FH. "Patterns in Hospitals' Use of a Regional Poison Information Center." *Am J Public Health* 73 (1983): 396-400.
10. Veltri, JC, McElwee, NE and Schumacher, MC. "Interpretation and uses of data collection in poison control centers in the United States." *Med Toxicol Adverse Drug Exp* 2 no.6 (1987): 389-397.
11. Calvert, G M, et al. "Acute pesticide poisoning among agricultural workers in the United States, 1998-2005." *American J Ind Med* 51, no. 12 (December 2008): 883-898.
12. Reigart, JR and Roberts, JR. 1999. *Recognition and Management of Pesticide Poisonings*. 5th Ed. U. S. Environmental Protection Agency. Office of Pesticide Programs. EPA# 735-R-98-003.
13. Occupational Safety and Health Administration. *Inspection Procedures for the Hazard Communication Standard*, 29 CFR 1910.1200, 1915.99, 1917.28, 1918.90, 1926.59, and 1928.21. March 20, 1998. CPL 02-02-038.
14. U.S. Environmental Protection Agency. "Agricultural Worker Protection Standard 40 CFR Parts 156 & 170 Interpretive Policy, Question and Answers Web site." Retrieved August 25, 2011. <http://www.epa.gov/pesticides/safety/workers/wpsinterpolicy.htm>.
15. ARI/EPA General Training Issues Workgroup. 2003. *Recommendations to the U.S. Environmental Protection Agency for Improving Farmworker Pesticide Safety Training From the ARI/EPA General Training Issues Workgroup*.
16. Council for Agricultural Sciences and Technology and U.S. Environmental Protection Agency. Office of Pesticide Programs. 2004. *Train the Trainer Pilot Project Final Report*.
17. U.S. Environmental Protection Agency. Office of Pesticide Programs. 2005. *Report on the National Assessment of EPA's Worker Safety Program*.
18. U.S. Environmental Protection Agency. Office of Pesticide Programs. 2008. *Small Business Advocacy Review Panel on EPA Planned Revisions to Two Related Rules: Worker Protection Standard for Agricultural Pesticides (RIN 2070-AJ22); and Certification of Pesticide Applicators (RIN 2070-AJ20)*. Washington, DC.
19. U.S. Government Accounting Office. 1992. *Hired Farmworkers: Health and Well-Being at Risk*. Report to Congressional Requesters. GAO/HRD-92-46.
20. U.S. Government Accounting Office. 2000. *Pesticides: Improvements Needed to Ensure the Safety of Farmworkers and Their Families*. Report to Congressional Requesters. GAO/RCED-00-40.
21. Ward, MH, et al. "Proximity to Crops and Residential Exposure to Agricultural Herbicides in Iowa." *Environ Health Perspect* 114, no. 6 (2006): 893-897.
22. McCauley, LA, et al. "Work Characteristics and Pesticide Exposures Among Migrant Agricultural Families: a Community-based Research Approach." *Environ Health Perspect* 109, no. 5 (2001): 533-538.
23. McCauley, L A, et al. "Pesticide Exposure and Self Reported Home Hygiene: Practices in Agricultural Families." *AAOHN Journal*. 51, no. 3 (2003):113-119.
24. Rao, P, et al. "Pesticide Safety Behaviors in Latino Farmworker Family Households." *Am J Ind Med*. 49, no. 4 (2006): 271-280.
25. Bradman, A, et al. "Community-Based Intervention To Reduce Pesticide Exposure to Farmworkers and Potential Take-Home Exposure to Their Families." *J Expo Sci Environ Epidemiol* 19, no.1 (2009):179-189.
26. Natural Resources Defense Council. *Comments from the Natural Resources Defense Council on the Revised Risk Assessment Methods for Workers, Children of Workers in Agricultural Fields, and Pesticides With No Food Uses (EPA-HQ-OPP-2009-0889-0002)*. April 2010.
27. Human Rights Watch. *Fingers to the Bone: United States Failure To Protect Child Farmworkers*. 2000. Washington, DC.
28. Children's Health Protection Advisory Committee. 1998. *Report of the Children's Health Protection Advisory Committee to the U.S. Environmental Protection Agency Regarding the Selection of Five Regulations for Re-Evaluation*.
29. Calvert, GM, et al. "Acute Pesticide-related Illnesses Among Working Youths, 1988-1999." *Am J Public Health* 93, no. 4 (2003): 605-610.
30. Curl, CL, et al. "Evaluation of Take-home Organophosphorus Pesticide Exposure Among Agricultural Workers and Their Children." *Environ Health Perspect* 110, no. 12 (2002): A787-A792.
31. Coronado, GD, et al. "Agricultural Task and Exposure to Organophosphate Pesticides Among Farmworkers." *Environ Health Perspect* 112, no. 2 (2004): 142-147.
32. Sánchez Lizardi, P, O'Rourke, MK and Morris, RJ. "The Effects of Organophosphate Pesticide Exposure on Hispanic Children's Cognitive and Behavioral Functioning." *J Pediatr Psychol* 33, no. 1 (2007): 91-101.
33. Das, R, et al. "Pesticide-Related Illness Among Migrant Farm Workers in the United States." *Int J Occup Environ Health* 7, no. 4 (2001): 303-312.
34. Goldman, L, et al. "Risk Behaviors for Pesticide Exposure Among Pregnant Women Living in Farmworker Households in Salinas, California." *Am J Ind Med*. 45, no. 6 (2004): 491-499.
35. Davis, S., et al. *Letter to U.S. Environmental Protection Agency Administrator Stephen Johnson*. On behalf of Farmworker Justice et al. December 15, 2006.
36. U.S. Environmental Protection Agency. Office of Pesticide Programs. 2007. *Compiled Comments of the Pesticide Program Dialogue Committee on May 2007 Issue Papers*. Washington, DC.
37. U.S. Environmental Protection Agency. Office of Pesticide Programs. 2007. *Pesticide Program Dialogue Committee Worker Safety Regulation Change Subgroup, Summary of PREP and PPDC Comments*. Washington, DC.
38. Calabro, K, Bright, K and Kouzekanani, K. "Long-Term Effectiveness of Infection Control Training among Fourth Year Medical Students." *Medical Education Online*. 5, no. 1, (2000): 1-7. <http://www.med-ed-online.org>
39. Spradley, Ples. *Correspondence to Kathy Davis, U.S. Environmental Protection Agency on Pesticide Worker Safety Program Enhancement*. American Association of Pesticide Safety Educators. June 7, 2007.
40. Glasnapp, J. and Nakamoto, J. 2007. *Hazard Communications for Agricultural Workers*. JBS International, Inc. Aguirre Division.
41. Adams, S. "Improving safety instruction and results: Five principles of sound training. Professional Safety." *Professional Safety*. December 1, 2000. Article available at <http://www.allbusiness.com/education-training/employee-training-assistance-employee/11442447-1.html>.
42. U.S. Environmental Protection Agency. Office of Pesticide Programs. 2008. *Summary of Potential SER Written and Oral Comments Received in Response to Small Business Advocacy Review Panel Outreach Meetings*. Washington, DC.
43. U.S. Environmental Protection Agency. Office of Pesticide Programs. 2010. *Worker Pesticide Safety Training Verification Card Order Report*. Washington, DC.
44. U.S. Environmental Protection Agency. Office of Pesticide Programs. 2000. *The National Assessment of the Worker Safety Program, Stakeholder Workshop #1*.
45. Dubberly, D. *Email correspondence to Elizabeth Evans, U.S. Environmental Protection Agency*. Florida Department of Agriculture and Consumer Services. July 18, 2006.
46. American Association of Pesticide Safety Educators. 2006. *FL SDA Comments*

on EPA's Plans for Proposed C&T and WPS Rule Changes. Washington, DC.

47. NASDAF Workgroup. *National Worker Safety Trainer Handbook: Pesticide Safety for Agricultural Workers*. (Washington, DC: National Association of State Departments of Agriculture Foundation, 2008). EPA Cooperative agreement no. X8-83235401.

48. Wallerstein, N and Rubenstein, H. *Teaching about Job Hazards, A Guide for Workers and Their Health Providers*. (Washington, DC, American Public Health Association, 1993.)

49. U.S. Department of Health and Human Services. Centers for Disease Control and Prevention. The National Institute of Occupational Safety and Health. *Report to Congress on Workers' Home Contamination Study Conducted Under the Workers' Family Protection Act (29 U.S.C. 671a)*. September 1995. Publication No. 95-123.

50. Lu, C, et al. "Pesticide Exposure of Children in an Agricultural Community: Evidence of Household Proximity to Farmland and Take Home Exposure Pathways." *Environmental Research* 84, no. 3 (2000):b290-302.

51. Lambert, W E, et al. "Variation in Organophosphate Pesticide Metabolites in Urine of Children Living in Agricultural Communities." *Environ Health Perspect* 113, no. 4 (2005): 504-508.

52. Arcury, T A, et al. "Pesticide Urinary Metabolite Levels of Children in Eastern North Carolina Farmworker Households." *Environ Health Perspect* 115, no. 8 (2007): 1254-1260.

53. Liebman, A K, et al. "A Pilot Program using Promotoras de Salud to Educate Farmworker Families About the Risks from Pesticide Exposure." *J Agromedicine* 12, no. 2 (2007):33-43.

54. U.S. Environmental Protection Agency. "Children's Environmental Health Centers (CEHCs) Web site." Retrieved April 21, 2011. <http://www.epa.gov/ncer/childrenscenters/>.

55. U.S. Environmental Protection Agency. "Children's Environmental Health Centers (CEHCs): University of California at Berkeley Center for Children's Environmental Health Research Web site" Retrieved August 5, 2011. <http://www.epa.gov/ncer/childrenscenters/berkeley.html>.

56. Bradman, M A, et al. "Pesticide Exposures to Children From California's Central Valley: Results of a Pilot Study." *J Expo Anal Environ Epidemiol* 7, no. 2 (1997): 217-234.

57. Quandt, S A, et al. "Agricultural and Residential Pesticides in Wipe Samples From Farmworker Family Residences in North Carolina and Virginia." 112, no. 3 (2004): 382-387.

58. Coronado, G D, et al. "Organophosphate Pesticide Exposure and Work in Pome Fruit: Evidence for the Take-home Pesticide Pathway." *Environ Health Perspect* 114, no. 7 (2006): 999-1006.

59. Wolgalter, S, Sojourner, J and Brelsford, J. "Comprehension and retention of safety pictorials." *Ergonomics*. 40, no. 5 (1997): 531-542.

60. Spencer, J R. November 2, 2001. *Health and Safety Report: Analysis of the Impact of the Federal Worker Protection Standard and Recommendations for Improving California's*

*Worker Protection Program Regarding Field Posting*. California Environmental Protection Agency Department of Pesticide Regulation. HS-1819.

61. U.S. Department of Labor. Office of the Assistant Secretary for Policy. Office of Program Economics. 2000. *Findings From the National Agricultural Workers Survey (NAWS) 1997-1998*. Research Report No. 8.

62. Davis, TC, et al. "Low Literacy Impairs Comprehension of Prescription Warning Labels." *J Gen Intern Med* 21, no. 8 (2006): 847-851.

63. U.S. General Accounting Office 1992. *Employers' Experiences in Complying with the Hazard Communication Standard*. Briefing Report to Congressional Requesters. GAO/HRD-92-63BR.

64. U.S. Department of Labor. Occupational Safety and Health Administration. "State Occupational Safety and Health Plans Web site." Retrieved September 14, 2011. <http://www.osha.gov/dcspp/osp/index.html>.

65. U.S. Department of Labor. Employment and Training Administration. "The National Agricultural Workers Survey Web site." Retrieved January 11, 2011. <http://www.doleta.gov/agworker/naws.cfm>.

66. North Carolina Administrative Code, Title 2, Chapter 9, Subchapter L, Part 1807. 2009.

67. Cotto-Febo, S. "Portable Central Location Project." (Presentation, Presented October, 3, 2007 at Worker Safety and Health Symposium, U.S. Environmental Protection Agency, Arlington VA. October 3, 2007.)

68. U.S. Environmental Protection Agency. Office of Enforcement and Compliance Assurance. 2006. *Overview of WPS Violations During 2006 Inspections*.

69. U.S. Environmental Protection Agency. Office of Enforcement and Compliance Assurance. 2007. *Overview of WPS Violations during 2007 Inspections*.

70. U.S. Environmental Protection Agency. Office of Enforcement and Compliance Assurance. 2008. *Overview of WPS Violations during 2008 Inspections*.

71. Calvert, G M, et al. "Case Report: Three Farmworkers Who Gave Birth to Infants With Birth Defects Closely Grouped in Time and Place—Florida and North Carolina, 2004-2005." *Environ Health Perspect* 115, no. 5 (2007): 787-791.

72. Cline, JS. *Letter to Jim Jones, Director of the Office of Pesticide Programs, U.S. Environmental Protection Agency*. On behalf of North Carolina Department of Health and Human Services. February 2007.

73. Washington State Department of Health. 2010. *2009 Annual Report: Pesticide Incident Reporting and Tracking Review Panel*.

74. Children's Health Protection Advisory Committee. *Letter to Administrator Stephen J. Johnson, Administrator, U.S. Environmental Protection Agency: Recommendations Regarding Protecting Farmworker Children*. November 15, 2005.

75. Krieger, R, et al. "Gauging Pesticide Exposure of Handlers (mixers/loaders/applicators) and Harvesters in California Agriculture." *Med Lav* 81, no. 6 (1990): 474-479.

76. U.S. Department of Health and Human Services, Public Health Service, Centers for

Disease Control and Prevention, National Institute for Occupational Safety and Health. *National Institute for Occupational Safety and Health (NIOSH) Recommendations to the U.S. Department of Labor for Changes to Hazardous Orders*. May 3, 2002.

77. Casey, BJ, Jones, RM and Hare, T A. "The Adolescent Brain." *Ann N Y Acad Sci* March (2008): 111-126.

78. Farmworker Justice et al. *Pesticides In the Air—Kids at Risk: Petition to EPA to Protect Children From Pesticide Drift*. October 13, 2009.

79. Young, M and Rischeitelli, D G. "Occupational Risks and Risk Perception among Hispanic Adolescents." *McGill J Med* 9, no. 1 (2006): 49-53.

80. U.S. Environmental Protection Agency. *How To Comply With the Worker Protection Standard for Agricultural Pesticides: What Employers Need To Know*. Revised 2005.

81. U.S. Environmental Protection Agency. 2007. *USDA Comments for the PPDC Worker Safety Regulation Change Subgroup*. Washington, DC.

82. Freeman Adcock, R, McAllister, R and Kelly, A. *Letter to Kathy Davis, Certification and Worker Protection Branch, U.S. Environmental Protection Agency; Comments on Position Papers Relating to Worker Protection Standards (WPS)*. Pesticide Policy Coalition. August 31, 2007.

83. U.S. Environmental Protection Agency. *Transmittal of Meeting Minutes of the FIFRA Scientific Advisory Panel Meeting Held December 2-5, 2008 on the Scientific Issues Associated with Worker Reentry Exposure Assessment*. February 19, 2009.

84. U.S. Environmental Protection Agency. Office of Pesticide Programs. Updated August 2010. *Label Review Manual Chapter 7: Precautionary Statements*.

85. American National Standards Institute. *American National Standard for Emergency Eyewash and Shower Equipment*. ANSI Z358.1-1990.

86. Cooke, G, et al. 2011. *Oregon OSHA Pesticide Emphasis Program Annual Report: Federal Fiscal Year 2010*. Oregon Department of Consumer and Business Services. Information Management Division.

87. Matoian, R. *Letter to Joe Hogue, U.S. Environmental Protection Agency: Small Business Representative comments on WPS*. July 14, 2008.

88. Arcury, T A, et al. "Farmworker reports of pesticide safety and sanitation in the work environment." *Am J Ind Med* 39, no. 5 (2001): 487-498.

89. California Department of Pesticide Regulation. *California Code of Regulations*. Title 3. Food and Agriculture. Division 6. Pesticides and Pest Control Operations; Section 6746. 2012.

90. California Department of Pesticide Regulation. *California Code of Regulations*. Title 3. Food and Agriculture. Division 6. Pesticides and Pest Control Operations; Section 6000. 2012.

91. California Department of Pesticide Regulation. Worker Health and Safety Branch. *Closed Systems Director's Memo*. January 2, 1998.

92. Department of Health and Human Services, Centers for Disease Control and Prevention. National Institute for

Occupational Safety and Health. 2004. *NIOSH Alert: Preventing Occupational Exposures to Antioplastic and Other Hazardous Drugs in Health Care Settings*. DHHS (NIOSH) Publication Number 2004-165.

93. Minnesota Department of Health. "Medical Screening Web site: Physiologic effects of respirator use." Retrieved November 17, 2010. Calvert, G M and Higgins, S A. "Using Surveillance Data to Promote Occupational Health and Safety Policies and Practices at the State Level: a Case Study." *Am J Ind Med* 53, no. 2 (2010): 188-193.

94. California Department of Pesticide Regulation. *California Code of Regulations*. Title 3. Food and Agriculture. Division 6. Pesticides and Pest Control Operations; Section 6720-6746.

95. Washington State Department of Labor and Industries. "Cholinesterase Monitoring Web site." Retrieved March 15, 2011. <http://www.lni.wa.gov/Safety/Topics/AtoZ/Cholinesterase/>.

96. Washington State Department of Labor and Industries. Division of Occupational Safety and Health. 2009. *Cholinesterase Monitoring of Pesticide Handlers in Agriculture: 2009 Report*.

97. Washington State Department of Labor and Industries. Division of Occupational Safety and Health. January 2007. *Cholinesterase Monitoring of Pesticide Handlers in Agriculture: Report to the Legislature*.

98. U.S. Environmental Protection Agency. Office of Pesticide Programs. "Pesticide Reregistration Status for Organophosphates Web site." Retrieved May 10, 2011. [http://www.epa.gov/pesticides/reregistration/status\\_op.htm](http://www.epa.gov/pesticides/reregistration/status_op.htm).

99. Washington State Department of Health. *Pesticide Incident Reporting and Tracking Review Panel 2005 Annual Report*. December 2005.

100. Washington State Department of Health. *Pesticide Incident Reporting and Tracking Review Panel Annual Report*. May 2007.

101. Washington State Department of Labor and Industries. 2003. *Benefit-Cost Determination: Cholinesterase Monitoring in Agriculture*. WAC 296-307-148.

102. Association of Farmworker Opportunity Programs. 2011. *Dangerous Exposure: Farmworker Children and Pesticides*. Health and Safety Programs Annual Report, Vol. 1.

103. Eskenazi, B, Bradman, A and Castorina, R. "Exposures of Children to Organophosphate Pesticides and their Potential Adverse Health Effects." *Environ Health Perspect Environ Health Perspect* 107, Suppl. 3 (1999): 409-419.

104. Jones, A and Smith, L. *Letter to Kevin Keaney, Branch Chief, Certification & Worker Protection Branch, U.S. Environmental Protection Agency, Comments regarding Issue Paper, "Making the Regulatory Requirements for Certified Crop Advisors, Crop Advisor Employees & Aerial Apps."* On behalf of National Alliance of Independent Crop Consultants, Certified Crop Advisors. 2006.

105. U.S. Environmental Protection Agency. *Agricultural Worker Protection*

*Standard Training and Notification (Proposed Rule)*. EPA ICR No. 2491.01 and OMB Control No. 2070-NEW. 2013.

106. U.S. Environmental Protection Agency. *Agricultural Worker Protection Standard Training and Notification*. EPA ICR number 1759.07 and OMB Control No. 2070-0148. 2013.

## XXII. FIFRA Review Requirements

Under FIFRA section 25(a), EPA has submitted a draft of the proposed rule to the Secretary of the Department of Agriculture and the appropriate Congressional Committees. Their comments on this proposed rule and EPA's responses are located in the docket for this rulemaking.

The Science Advisory Panel waived its review of this proposal on February 7, 2013.

## XXIII. Statutory and Executive Order Reviews

*A. Executive Order 12866: Regulatory Planning and Review; and, Executive Order 13563: Improving Regulation and Regulatory Review*

Under Executive Order 12866 (58 FR 51735; October 4, 1993), this action is a "significant regulatory action" because it may raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order. Accordingly, EPA submitted this proposed rulemaking to the Office of Management and Budget (OMB) for review under Executive Orders 12866 and 13563 (76 FR 3821; January 21, 2011), and any changes made in response to OMB recommendations have been documented in the public docket for this action.

Each of the WPS provisions is intended to do one of the following: (1) Inform farm workers and pesticide handlers about the hazards and risks from pesticides they use or with which they come into contact in the workplace, (2) protect workers and handlers from occupational exposure to pesticides and the potential adverse effects, or (3) mitigate the potential adverse effects of unavoidable pesticide exposure, including accidents. Within these categories, EPA evaluated the costs and benefits of alternative requirements and is proposing a set of requirements that, in combination, is expected to achieve substantial benefits at minimum cost. In addition, EPA prepared an analysis of the potential costs and benefits associated with this proposed action, titled "Economic Analysis of Proposed Revisions to the Worker Protection Standard" (Ref. 1). A copy of the analysis is available in the

docket for this action and is briefly summarized here.

EPA estimates the incremental cost of the proposed revisions to be between about \$62.1 million and \$72.9 million annually. These costs are almost entirely borne by farms that hire labor and use pesticides, which account for about 25 percent of all crop farms in the United States. Commercial pesticide handling establishments, which contract to apply pesticides on farms, may see an incremental cost of \$170 to \$190 per year per firm. The cost to individual farms will depend on the number and type of employees employed. EPA estimates that larger farms will incur costs of \$340 to \$400 per year. Smaller operations are estimated to incur costs between \$130 and \$150 per year, which amounts to less than 0.1 percent of average annual revenue.

The incremental cost to employ a worker is estimated to be less than \$5 per year, which would not be expected to have an impact on employment. The incremental cost to employ a pesticide handler is estimated to be about \$60 per year, which represents 0.3 percent of the total cost of a part-time employee, a marginal increase that would not be expected to have an impact on job availability.

The benefits of the proposed rule would accrue to agricultural workers, pesticide handlers and, indirectly due to reduced take-home pesticide exposure, to their families. The revised rule is expected to substantially mitigate the potential for adverse health effects (both acute and chronic) for these workers and handlers from occupational exposures to pesticides.

It is difficult to quantify a specific level of risk and project the risk reduction that will result from this rulemaking, because workers and handlers are potentially exposed to a wide range of pesticides with different toxicities and risks; however, the proposed changes to the WPS are designed to reduce occupational exposure to all pesticides. EPA believes there is sufficient evidence in the peer-reviewed literature to suggest reducing pesticide exposure would result in a benefit to public health through reduced acute and chronic illness.

Overall, the weight of evidence suggests that the proposed requirements would result in long-term health benefits to agricultural workers and pesticide handlers. EPA is not able to estimate the dollar value of the benefits that accrue from reducing chronic exposure to pesticides but there are well-documented associations between pesticide exposure and certain cancer and non-cancer chronic health effects in

the peer-reviewed literature. The proposed requirements provide benefits to the 2.3 million workers and pesticide handlers, not only by reducing their daily risk of pesticide exposures but also by improving quality of life throughout their lives, resulting in a lower cost of healthcare and a healthier society. Many of the changes to current WPS requirements specifically mitigate the potential for workers to transport pesticide residues home to their families. Thus, the proposed requirements are expected to reduce children's exposure to pesticides. The agency believes the unquantified benefits to children of workers and handlers are great, and reducing exposure to pesticides could translate into fewer sick days, fewer days missed of school, improved capacity to learn, and better long-term health. Parents and caregivers reap benefits by having healthier families, fewer missed workdays, and better quality of life, as well.

EPA does estimate a value of avoided acute incidents as a result of the proposed rule, although this estimate is biased downward by an unknown degree for several reasons. First, pesticide incidents, like many illnesses and accidents, are underreported because sufferers may not seek medical care, cases may not be correctly diagnosed, and correctly diagnosed cases may not be filed with the central reporting database. Second, our approach only measures avoided medical costs and lost wages, not the willingness to pay to avoid possible symptoms due to pesticide exposure, which could be substantially higher. Just the small amount EPA is able to monetize accrues to be between \$1.2 million and \$2.8 million annually. The effect of underreporting can be significant. If only 25% of poisonings are reported (within the range of estimates in the literature), the quantified estimated benefits of the rule would be about \$11.4 million annually. This conservative estimate only includes the avoided costs in medical care and lost productivity to workers and handlers. It does not include quantification of the reduction in chronic effects of pesticide exposure to workers and handlers, reduced effects of exposure including developmental impacts, to children and pregnant workers and handlers, or willingness to pay to avoid symptoms of pesticide exposure.

Because the proposed changes to the requirements for protection of workers and handlers apply to many different pesticides in many different situations, EPA is not able to quantify the benefits

expected to accrue from reducing chronic exposure to pesticides; however, well-documented associations between pesticide exposure and certain cancer and non-cancer chronic health effects exist in peer-reviewed literature. EPA conducted a "break even" analysis to demonstrate the potential benefits that would result from reducing a very small number of chronic illnesses that have well-documented associations with pesticide exposure. Under this analysis, avoiding only 53 total cases of non-Hodgkin's lymphoma, prostate cancer, Parkinson's disease, lung cancer, bronchitis, and asthma (under 0.8% of total cases among workers) would bridge the gap between the estimated benefits from reducing acute incidents and the cost of the rule, about \$63.7 million. Overall, the weight of evidence suggests that the proposed requirements would result in long term health benefits to agricultural workers and pesticide handlers, not only by reducing their daily risk of pesticide exposures, but also by improving quality of life throughout their lives, resulting in a lower cost of health care and a healthier society.

In addition, changes to the current WPS requirements, namely improved training on reducing pesticide residues brought from the treated area to the home on workers and handlers' clothing and bodies and establishing a minimum age for handlers and early entry workers, other than those covered by the immediate family exemption, specifically mitigate the potential for children to be exposed to pesticides directly and indirectly. The unquantified benefit to adolescent workers and handlers, as well as children of workers and handlers is great; reducing exposure to pesticides could translate into fewer sick days, fewer days missed of school, improved capacity to learn, and better long-term health. Parents and caregivers reap benefits by having healthier families, fewer missed workdays, and better quality of life.

#### *B. Paperwork Reduction Act (PRA)*

The information collection requirements in this proposed rule have been submitted for approval to OMB under the PRA, 44 U.S.C. 3501 *et seq.* EPA has prepared an Information Collection Request (ICR) document to replace the existing approved ICR. The new ICR document, which is titled "Agricultural Worker Protection Standard Training and Notification (Proposed Rule)" and is identified by EPA ICR No. 2491.01 and OMB Control No. 2070-NEW, has been placed in the docket for this proposed rule (Ref. 105).

Responses to the proposed amendments would be mandatory.

The information activities related to the current WPS requirements are already approved by OMB in an ICR entitled, "Worker Protection Standard Training and Notification" (EPA ICR No. 1759; OMB Control No. 2070-0148) (Ref 106). The proposed rule replacement ICR addresses the information collection requirements contained in the current regulations as well as in the amendments identified in this proposed rule. The amendments include:

- Increasing the amount of training handlers and workers receive.
- Establishing a minimum age for pesticide handlers and workers engaged in early-entry activities.
- Increasing recordkeeping responsibilities of the agricultural employers and handler employers.

The replacement ICR addresses adjustments to the estimated number of respondents, time for activities, and wage rates related to the current regulatory requirements as approved under OMB Control No. 2070-0148. In addition, the replacement ICR addresses program changes related to the proposed amendments, including modifications to restrictions in field entry activities during restricted entry intervals; increased hazard communications; increased training (for both workers and handlers); provisions for information during emergency assistance; and recordkeeping for respirator requirements and for workers performing early entry activities. The estimated annual burden approved by OMB under OMB Control No. 2070-0148 is 1,776,131 hours. The total estimated annual respondent burden being proposed in the replacement ICR is 8,316,993 hours, a net increase of 6,540,862 hours.

The estimated burden represents the total to comply with the full WPS, including all proposed revisions and those that are unchanged by this proposal. This differs from the estimated incremental cost of the proposal, which only considers the net cost of the proposed revisions.

The burdens of the various activities range from 30 seconds per respondent for workers to provide acknowledgements to their employers to an hour per respondent for handler training. This estimate includes third-party WPS training and notification requirements. Burden is defined at 5 CFR 1320.3(b).

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB

control number. The OMB control numbers for EPA's regulations in 40 CFR are listed in 40 CFR part 9.

Any comments on the Agency's need for information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, should be directed to the public docket for this proposed rule, under Docket ID Number EPA-HQ-OPP-2011-0184. See **ADDRESSES** section at the beginning of this notice for where to submit comments to EPA. In addition, please submit a copy of your comments on the ICR directly to OMB at the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street NW., Washington, DC 20503, Attention: Desk Office for EPA. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after March 19, 2014, a comment to OMB is best assured of having the full effect if OMB receives it by April 18, 2014. The final will address any comments received regarding the information collection requirements contained in this proposal.

### C. Regulatory Flexibility Act (RFA)

The RFA, 5 U.S.C. 601 *et seq.*, generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. EPA estimates the rule will affect over 300,000 small farms, nurseries, and greenhouses, and several hundred small commercial entities that are contracted to apply pesticides. EPA expects the impacts to be less than 0.1% of the annual value of sales or revenues for the average small entity. EPA calculates the impact of the rule as the percent of sales revenue. Only the very smallest farms, with average sales of less than \$4,500 per year, may face impacts above one percent of sales. The number of entities that may be impacted in excess of one percent of sales could be over 40,000, given the number of small-small establishments. However, this is likely an overestimate of the number of farms impacted as it does not account for the nearly 5,000 small-small farms in California that would face impacts well below the national average. Please refer to the Economic Assessment, Table 5.4-3. "Small Business Impacts, WPS Farms making pesticide applications" for further details of the assessment.

Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of the proposed rule on small entities, small entity is defined in accordance with the RFA as:

1. A small business as defined by the Small Business Administration's (SBA) regulations at 13 CFR 121.201. The SBA's definitions typically are based upon either a sales or an employment level, depending on the nature of the industry.

2. A small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000.

3. A small organization that is any not-for-profit enterprise that is independently owned and operated and is not dominant in its field.

Pursuant to section 605(b) of the RFA, 5 U.S.C. 601 *et seq.*, the Agency hereby certifies that this action will not have a significant adverse economic impact on a substantial number of small entities. The factual basis for the Agency's determination is presented in the small entity impact analysis prepared as part of the economic analysis for this proposed rule and a copy of which is available in the docket for this rulemaking (Ref. 18). The following is a brief summary of the factual basis for this certification.

Although not required by the RFA to convene a Small Business Advocacy Review (SBAR) Panel for this particular proposed rule because EPA has ultimately determined that this proposal would not have a significant economic impact on a substantial number of small entities, EPA convened a SBAR Panel to obtain advice and recommendations from small entities representatives potentially subject to the proposed rule's requirements. EPA's subsequent small business analysis demonstrates that there will not be a significant impact on a substantial number of small entities. Nevertheless, a Panel consisting of the following four individuals was convened:

- EPA's Small Business Advocacy Chairperson,
- Director of the Field and External Affairs Division of EPA's Office of Pesticide Programs,
- Administrator of the Office of Information and Regulatory Affairs within the Office of Management and Budget, and
- Acting Chief Counsel for Advocacy of the Small Business Administration.

The Panel was convened to consider revisions to two related rules, which were being revised by EPA's Office of Pesticide Programs: Worker Protection

Standard for Agricultural Pesticides; and Certification of Pesticide Applicators.

The Worker Protection Standard applies to the following agricultural establishments engaged in the production of agricultural commodities: farms, forests, nurseries, and greenhouses.

Since many agricultural establishments are small entities, the WPS would potentially impact a large number of small entities. After extensive research from several sources, including the National Agricultural Statistics Service, state pesticide usage data, the Bureau of Labor Statistics, and internet research, EPA assembled a list of industries that could be affected by the regulation. EPA then reviewed qualifications for small and large entities. The number of entities by industry is listed in the Final Report of the SBAR Panel for the two rules (Ref. 18).

In January 2008, EPA began an informal outreach process to potential Small Entity Representatives (SERs, representatives of the small entities who may be subject to the requirements of the proposed rule) as part of the pre-SBAR panel planning process. SERs participate in the process to ensure that EPA hears the concerns and suggestions of small entities. EPA contacted States, agricultural extension agents, and organizations known to represent affected small business, such as grower associations, and various pest control industry associations to ask them to submit the names of potential SERs. EPA looked for representatives from differing types of businesses involved in pesticide application and/or different crops or agricultural commodities. EPA also sought to have representatives from a number of geographic areas of the nation.

In February 2008, EPA sent an email to the 20 potential SERs identified by that point and provided background on the proposed changes and a description of the SBAR Panel Process. EPA held an informal outreach meeting on June 30, 2008. The SBAR Panel convened on September 4, 2008. The Panel decided to add one additional SER, for a total of 21, prior to the Panel meeting with the SERs. The Panel held a formal panel outreach meeting/teleconference with SERs on September 25, 2008. Two weeks before the panel outreach meeting EPA sent materials to each of the SERs via email. A list of all materials shared with the SERs before the outreach meeting is contained in the pre-proposed rule portion of the docket for this action.

The outreach meeting was held to solicit feedback from the SERs on their suggestions for the upcoming rulemaking. EPA asked the SERs to provide feedback on ideas under consideration for the proposed rulemaking and to respond to questions regarding their experience with the implementation of the current WPS. Specifically, the Panel asked the SERs to provide any alternate solutions to the potential proposals presented by EPA that would provide flexibility or would decrease the economic impact on small entities while still accomplishing the goal of improved safety. The Agency received written comments from SERs which are Appendix B to the Panel's Report.

The Panel evaluated the assembled materials and small entity comments and prepared a report for the Agency's consideration titled: "Small Business Advocacy Review Panel on EPA's Planned Revision to Two Related Rules: Worker Protection Standard for Agricultural Pesticides; and Certification of Pesticide Applicators." A copy of the Panel report is included in the docket for this proposed rule.

The SBAR Panel recommended that as part of the proposal for revising the Worker Protection Standard in 40 CFR part 170, EPA specifically request comments on the following regulatory flexibility options:

a. *Oral notifications.* The Panel recommended that EPA permit oral notifications without posted notifications for those pesticide applications with REIs of 48 hours or less. EPA is proposing and also requesting comments on allowing oral notification for products with REIs of 48 hours or less, unless the pesticide label specifically requires both oral and posted notification.

b. *Annual training.* The Panel recommended that EPA consider ways to reduce the burden of annual training for workers and handlers on entities with fewer than 10 employees if they maintain written documentation that: (1) There has been no worker turnover, (2) no new or different pesticides have been applied, and (3) all workers and handlers were previously trained on the establishment. EPA is proposing annual training for all workers and handlers regardless of the number of employees and requesting comment on this recommendation.

c. *Grace period.* The Panel recommended that EPA consider programmatic flexibilities for small entities related to the grace period before employers must be trained. For example, consider collaboration between the Agency and states to

increase the use of training verification programs to reduce the need for unnecessary retraining and use of the grace period. EPA is proposing a 2 day grace period and training verification records. EPA is also requesting comments on making mandatory the current optional training verification program and flexibility for small entities.

d. *Shower facilities.* The Panel recommended that EPA limit consideration of shower facilities to establishments with permanent mixing-loading sites. EPA is not proposing to require showers on any establishment. EPA is requesting comments from the public on an alternative requirement for employers to provide showers at permanent mixing-loading sites.

The Agency invites comments on all aspects of the proposal and its impacts on small entities.

#### *D. Unfunded Mandates Reform Act (UMRA)*

Title II of UMRA, 2 U.S.C. 1531–1538, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. This proposed rule does not contain a federal mandate that may result in expenditures of \$100 million or more for state, local, and tribal governments, in the aggregate, or the private sector in any 1 year. The total estimated cost of the proposed rule is between \$65 million and \$75 million per year, with most requirements on agricultural employers, who would bear most of the cost. Thus, this proposed rule is not subject to the requirements of sections 202 or 205 of UMRA. This proposed rule is also not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments.

#### *E. Executive Order 13132: Federalism*

This action does not have federalism implications. It would not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132 (64 FR 43255, August 10, 1999).

Although this action does not have federalism implications, EPA worked extensively with state partners when considering revisions to the existing regulations. As discussed in Unit V.B., EPA has solicited feedback from states in a number of ways. The two primary avenues through which EPA sought

state comments were the National Assessment of EPA's Pesticide Worker Safety Program (National Assessment) and the Pesticide Program Dialogue Committee workgroup on proposed changes to the Worker Protection Standard and Certification Rule.

The Agency initiated the National Assessment of EPA's Pesticide Worker Safety Program (National Assessment) in 2000. Through this process, EPA convened stakeholder meetings in Texas, California, and Florida. States participated substantially throughout the National Assessment. State regulators served on workgroups related to specific areas of change (pesticide safety training, hazard communication, and train-the-trainer programs). States provided feedback to EPA about the strengths and weaknesses of the rule as implemented and made suggestions for improving the protections and enforceability of the WPS. Recommendations from States and other stakeholders were included in the "Report on the National Assessment of EPA's Pesticide Worker Safety Program" (Ref. 17).

In 2006, during the initial stages of the framing of this proposal, EPA's Federal Advisory Committee, the Pesticide Program Dialogue Committee (PPDC), formed a workgroup to provide feedback to EPA on different areas for change. The workgroup had over 70 members representing a wide range of stakeholders, including State representatives. EPA shared with the workgroup suggestions for regulatory change identified through the National Assessment and solicited comments. The workgroup convened for a series of meetings and conference calls to get more information on specific parts of the regulation and provided its thoughts to the Agency. States provided comments individually and through the Association of American Pesticide Control Officials. Comments from the PPDC workgroup members have been compiled into a single document and posted in the docket.

In the spirit of the Order, and consistent with EPA policy to promote communications between the Agency and State and local governments, EPA specifically solicits comment on this proposed rule from State and local officials.

#### *F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments*

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). The proposed rule would not regulate tribal governments directly;

agricultural employers are the directly affected entities. Thus, Executive Order 13175 does not apply to this action.

EPA specifically solicits additional comment on this proposed action from tribal officials.

*G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks*

This action is not subject to Executive Order 13045 (62 FR 19885, April 23, 1997) because it is not economically significant as defined by Executive Order 12866. However, EPA believes that the environmental health or safety risks addressed in this proposed rule have a disproportionate effect on children.

Children face the risk of pesticide exposure from work in pesticide-treated areas, from the use of pesticides near their homes, and from residues of pesticides brought home by family members after a day of working with pesticides or in pesticide-treated areas. The proposed rule is intended to reduce these exposures and risks. By establishing a minimum age for certain pesticide-related activities in agriculture, children would receive less exposure to pesticides that may lead to chronic or acute pesticide-related illness. Another proposal to reduce risk to children is training workers and handlers on the risks presented by take-home pesticide exposure and how best to reduce it.

Like the Department of Labor's regulations that implement the FLSA, the proposed rule seeks to regulate the ages at which children can work in agriculture, at least for certain activities. The proposed rule would establish a minimum age of 16 for pesticide handlers and for early-entry workers, except those working on an establishment owned by an immediate family member. Since children in agriculture are at such great risk, EPA feels that they warrant special consideration in light of the Executive Order on children's health. EPA expects that many of the proposed changes would mitigate or eliminate many risks faced by youths.

The public is invited to submit comments or identify peer-reviewed studies and data that assess effects of early life exposure to pesticides.

*H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use*

This action is not a "significant energy action" as defined in Executive Order 13211 (66 FR 28355; May 22, 2001), because it is not likely to have a

significant adverse effect on the supply, distribution, or use of energy. The revisions to part 170 are intended to improve the standards of protection offered to agricultural workers, and do not affect the use of oil, coal, or electricity.

*I. National Technology Transfer and Advancement Act (NTTAA)*

Section 12(d) of the NTTAA, Public Law 104-113, 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

EPA considered adopting the American National Standards Institute Standard for eye flushing in the event of ocular contamination, which calls for a minimum of 1.5 liter (0.4 gallons) per minute of flushing fluid, such as water, for 15 minutes (ANSI Z358.1-2009). EPA adopted this standard only at permanent mixing loading sites on agricultural establishments, rather than for all handler eye flush decontamination because the Agency believes it would be impractical for employers to achieve at non-permanent sites. EPA is requesting comments on the incorporation of this standard into the regulation.

*J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations*

Executive Order 12898 (59 FR 7629; February 16, 1994) establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

EPA has determined that this proposed rule would not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it increases the level of

environmental protection for all affected populations without having any disproportionately high and adverse human health or environmental effects on any population, including any minority or low-income population. In fact, the population of agricultural workers and handlers that the rule seeks to protect is comprised primarily of minority and low-income individuals. As reviewed in Unit IV. A., the farmworker community, due to occupation, economic status, health, language and other sociodemographic characteristics, faces an increased risk of pesticide exposure which this rulemaking seeks to reduce through improving communication and protections.

The Agency engaged with stakeholders from affected communities extensively in the development of this rulemaking, in order to obtain meaningful involvement of all parties. EPA believes that the proposed changes would improve the health of agricultural workers and handlers by, among other things, increasing the frequency of training, enhancing training content to include ways to minimize pesticide exposure to children and in the home, adding posting of treated areas near worker and handler housing to prevent accidental entry, and establishing a minimum age for pesticide handlers and early-entry workers.

**List of Subjects in 40 CFR Part 170**

Environmental protection, Pesticides, Agricultural worker, Pesticide handler, Employer, Farms, Forests, Nurseries, Greenhouses, Worker protection standard.

Dated: February 20, 2014.

**Gina McCarthy,**  
Administrator.

Therefore, it is proposed that 40 CFR chapter I, subchapter E, part 170 is revised to read as follows:

**PART 170—WORKER PROTECTION STANDARD**

Sec.

**Subpart A—General Provisions**

- 170.1 Scope and purpose.
- 170.3 Applicability of this part.
- 170.5 Definitions.
- 170.7 Effective date.
- 170.9 Agricultural employer duties.
- 170.11 Pesticide information requirements on agricultural establishments.
- 170.13 Commercial pesticide handler employer duties.
- 170.15 Prohibited actions.
- 170.17 Violations of this part.

**Subpart B—Requirements for Protection of Agricultural Workers**

- 170.101 Training requirements for workers.  
 170.103 Establishment-specific information for workers.  
 170.105 Entry restrictions associated with pesticide applications.  
 170.107 Worker entry restrictions after pesticide applications.  
 170.109 Oral and posted notification of worker entry restrictions.  
 170.111 Worker decontamination supplies.

**Subpart C—Requirements for Protection of Agricultural Pesticide Handlers**

- 170.201 Training requirements for handlers.  
 170.203 Knowledge of labeling, application-specific, and establishment-specific information for handlers.  
 170.205 Requirements during applications to protect handlers, workers, and other persons.  
 170.207 Personal protective equipment.  
 170.209 Handler decontamination supplies.

**Subpart D—Exemptions and Exceptions**

- 170.301 Exemptions.  
 170.303 Exceptions for entry by workers during restricted-entry intervals.  
 170.305 Agricultural employer responsibilities to protect workers entering treated areas during a restricted-entry interval.  
 170.307 Exceptions to personal protective equipment requirements specified on pesticide product labeling.  
 170.309 Exception to training requirements for workers.

**Authority:** 7 U.S.C. 136w.

**Subpart A—General Provisions****§ 170.1 Scope and purpose.**

This regulation is intended to reduce the risks of illness or injury to workers and handlers resulting from occupational exposures to pesticides used in the production of agricultural plants on agricultural establishments. It requires agricultural employers and commercial pesticide handler employers to provide specific information and protections to workers and handlers when pesticides are used on agricultural establishments in the production of agricultural plants. It also requires pesticide handlers to wear the label-specified clothing and personal protective equipment when performing pesticide handler activities, and to take measures to protect workers and other persons during pesticide applications.

**§ 170.3 Applicability of this part.**

(a) This regulation applies whenever a pesticide product bearing a label requiring compliance with this part is used in a manner directly related to the production of agricultural plants on an agricultural establishment that employs workers or handlers.

(b) This regulation does not apply when a pesticide product bearing a label

requiring compliance with this part is used on an agricultural establishment in any of the following circumstances:

(1) As part of government-sponsored public pest control programs of which the owner, agricultural employer and handler employer have no control, such as mosquito abatement and Mediterranean fruit fly eradication programs.

(2) On plants other than agricultural plants, which may include plants in home fruit and vegetable gardens and home greenhouses, and permanent plantings for ornamental purposes, such as plants that are in ornamental gardens, parks, public or private landscaping, lawns or other grounds that are intended only for aesthetic purposes or climatic modification.

(3) For control of vertebrate pests, unless directly related to the production of an agricultural plant.

(4) As attractants or repellents in traps.

(5) On the harvested portions of agricultural plants or on harvested timber.

(6) For research uses of unregistered pesticides.

(7) On pasture and rangeland where the forage will not be harvested for hay.

(8) In a manner not directly related to the production of agricultural plants, including, but not limited to structural pest control and control of vegetation in non-crop areas.

**§ 170.5 Definitions.**

Terms used in this part have the same meanings they have in the Federal Insecticide, Fungicide, and Rodenticide Act, as amended. In addition, the following terms, when used in this part, shall have the following meanings:

*Agricultural employer* means any person who is an owner of, or is responsible for the management or condition of an agricultural establishment, and who employs any worker or handler.

*Agricultural establishment* means any farm, forest operation, or nursery engaged in the outdoor or enclosed space production of agricultural plants.

*Agricultural plant* means any plant, or part thereof, grown, maintained, or otherwise produced for commercial production.

*Authorized representative* means a person designated by the worker or handler, orally or in writing, to request and obtain any information that the employer is required to provide upon request to the worker or handler.

*Chemigation* means the application of pesticides through irrigation systems.

*Closed system* means a system for mixing or loading pesticides that

encloses the pesticide during removal of the pesticide from its original container and transfer, mixing, or loading of the pesticide product, mixtures or dilutions, and any rinse solution, if applicable, into a new container or application equipment, in such a manner that prevents the pesticide and any pesticide mixture or use dilution from contacting handlers or other persons before, during and after the transfer, except for negligible release associated with normal operation of the system.

*Commercial pesticide handler employer* means any person, other than an agricultural employer, who employs any handler to perform handler activities on an agricultural establishment.

*Commercial pesticide handling establishment* means any enterprise, other than an agricultural establishment, that provides pesticide handler or crop advising services to agricultural establishments.

*Commercial production* means growing, maintaining or otherwise producing agricultural plants for sale or trade, for research or experimental purposes, or for use in their entirety in another location. Commercial production includes producing agricultural plants for use by the agricultural employer or agricultural establishment instead of purchasing the agricultural plants.

*Crop advisor* means any person who is assessing pest numbers, damage, pesticide distribution, or the status or requirements of agricultural plants.

*Early entry* means entry by a worker into a treated area on the agricultural establishment after a pesticide application is complete, but before any restricted-entry interval for the pesticide has expired.

*Employ* means to obtain, directly or through a labor contractor, the services of a person in exchange for a salary or wages, including piece-rate wages, without regard to who may pay or who may receive the salary or wages. It includes obtaining the services of a self-employed person, an independent contractor, or a person compensated by a third party.

*Enclosed cab* means a cab with a nonporous barrier that totally surrounds the occupant(s) of the cab and prevents dermal contact with pesticides that are being applied outside of the cab.

*Enclosed space production* means production of an agricultural plant in a structure or space that is covered in whole or in part and that is large enough to permit a person to enter.

*Entry-restricted area* means the area from which workers or other persons

must be excluded during and after the pesticide application.

*Farm* means any agricultural establishment, other than a nursery or forest operation, engaged in the outdoor or enclosed production of agricultural plants.

*Forest operation* means an agricultural establishment engaged in the outdoor production of any agricultural plant to produce any wood fiber or timber products.

*Fumigant* means any pesticide product that is a vapor or gas, or forms a vapor or gas upon application, and whose pesticidal action is achieved through the gaseous or vapor state.

*Hand labor* means any agricultural activity performed by hand or with hand tools that cause a worker to have substantial contact with plants, plant parts, or soil and other surfaces that may contain pesticide residues.

*Handler* means any person, including a self-employed person, who is employed by an agricultural employer or commercial pesticide handler employer and performs any of the following activities:

- (1) Mixing, loading, or applying pesticides;
- (2) Disposing of pesticides;
- (3) Handling opened containers of pesticides; emptying, triple-rinsing, or cleaning pesticide containers according to pesticide product labeling instructions; or disposing of pesticide containers that have not been cleaned. The term does not include any person who is only handling unopened pesticide containers or pesticide containers that have been emptied or cleaned according to pesticide product labeling instructions;
- (4) Acting as a flagger;
- (5) Cleaning, adjusting, handling, or repairing the parts of mixing, loading, or application equipment that may contain pesticide residues;
- (6) Assisting with the application of pesticides;
- (7) Entering an enclosed space after the application of a pesticide and before the inhalation exposure level listed in the labeling has been reached or one of the ventilation criteria established by § 170.105(b)(3) or the labeling has been met to operate ventilation equipment, monitor air levels, or adjust or remove coverings used in fumigation;
- (8) Entering a treated area outdoors after application of any soil fumigant during the label-specified entry restricted period to adjust or remove coverings used in fumigation, such as tarpaulins;
- (9) Performing tasks as a crop advisor during any pesticide application or restricted-entry interval, or before the

inhalation exposure level listed in the pesticide product labeling has been reached or one of the ventilation criteria established by § 170.105(b)(3) or the pesticide product labeling has been met.

*Handler employer* means any person who is self-employed as a handler or who employs any handler.

*Immediate family* is limited to the spouse, parents, stepparents, foster parents, father-in-law, mother-in-law, children, stepchildren, foster children, sons-in-law, daughters-in-law, grandparents, grandchildren, brothers, sisters, brothers-in-law, and sisters-in-law.

*Labor contractor* means a person who employs workers or handlers to perform tasks on an agricultural establishment for an agricultural employer or a commercial pesticide handler employer.

*Nursery* means any agricultural establishment engaged in the outdoor or enclosed space production of any agricultural plant to produce cut flowers or foliage, ferns, plants, or seedlings that will be used in part or their entirety in another location. Such plants include, but are not limited to, flowering and foliage plants or trees; tree seedlings; live Christmas trees; vegetable, fruit, and ornamental transplants; and turf grass produced for sod.

*Outdoor production* means production of an agricultural plant in an outside open space or area that is not enclosed or covered in any way.

*Owner* means any person who has a present possessory interest (e.g., fee, leasehold, rental, or other) in an agricultural establishment. A person who has both leased such agricultural establishment to another person and granted that same person the right and full authority to manage and govern the use of such agricultural establishment is not an owner for purposes of this part.

*Personal protective equipment* means devices and apparel that are worn to protect the body from contact with pesticides or pesticide residues, including, but not limited to, coveralls, chemical-resistant suits, chemical-resistant gloves, chemical-resistant footwear, respirators, chemical-resistant aprons, chemical-resistant headgear, and protective eyewear.

*Restricted-entry interval* means the time after the end of a pesticide application during which entry into the treated area is restricted.

*Safety data sheet* has the same meaning as the definition at 29 CFR 1900.1200(c).

*Treated area* means any area to which a pesticide is being directed or has been directed.

*Use, as in "to use a pesticide"* means any of the following—

(1) Pre-application activities, including, but not limited to:  
(i) Arranging for the application of the pesticide;

(ii) Mixing and loading the pesticide;  
(iii) Making necessary preparations for the application of the pesticide, including responsibilities related to worker notification, training of workers or handlers, providing decontamination supplies, providing pesticide information, use and care of personal protective equipment, providing emergency assistance, and heat stress management.

(2) Application of the pesticide.

(3) Post-application activities intended to reduce the risks of illness and injury resulting from handlers' and workers' occupational exposures to pesticide residues during and after the restricted-entry interval, including responsibilities related to worker notification, training of workers or early entry workers, providing decontamination supplies, providing pesticide information, use and care of personal protective equipment, providing emergency assistance, and heat stress management.

(4) Other pesticide-related activities, including, but not limited to, transporting or storing pesticides that have been opened, cleaning equipment, and disposing of excess pesticides, spray mix, equipment wash waters, pesticide containers, and other pesticide-containing materials.

*Worker* means any person, including a self-employed person, who is employed and performs activities directly relating to the production of agricultural plants on an agricultural establishment.

*Worker housing area* means any place or area of land on or near an agricultural establishment where housing or space for housing is provided for workers or handlers by an agricultural employer, owner, labor contractor, or any other person responsible for the recruitment or employment of agricultural workers.

#### § 170.7 Effective date.

The effective date for this part shall be [effective date 60 calendar days after the promulgated rule is transmitted for Congressional review per FIFRA 25(a)(4)].

#### § 170.9 Agricultural employer duties.

Agricultural employers must:  
(a) Ensure that any pesticide applied on an agricultural establishment is used in a manner consistent with the pesticide product labeling, including the requirements of this part.

(b) Ensure that each worker and handler subject to this part receives the protections required by this part.

(c) Ensure that any handler, and any worker performing early entry activities, is at least 16 years old.

(d) Provide to each person, including labor contractors, who supervises any workers or handlers, information and directions sufficient to ensure that each worker and handler receives the protections required by this part. Such information and directions must specify the tasks for which the supervisor is responsible in order to comply with the provisions of this part.

(e) Require each person, including labor contractors, who supervises any workers or handlers, to provide sufficient information and directions to each worker and handler to ensure that they can comply with the provisions of this part.

(f) *Provide emergency assistance.* If there is reason to believe that a person who is or has been employed by an agricultural establishment to perform tasks related to the production of agricultural plants, has been poisoned or injured by exposure to pesticides as a result of his or her employment on the agricultural establishment, the agricultural employer must do all of the following, within 30 minutes after learning of the possible poisoning or injury:

(1) Make available to that person transportation from the agricultural establishment, including any worker housing area on the establishment, to an operating emergency medical facility.

(2) Provide to that person or treating medical personnel all of the following information for each pesticide product to which that person might have been exposed:

(i) Copies of the applicable safety data sheet and the label for the pesticide product, or alternatively, a copy of the applicable safety data sheet for the product and the product name, EPA registration number, active ingredients, antidote, and first aid and medical treatment information from the pesticide product labeling.

(ii) The circumstances of application or use of the pesticide on the agricultural establishment.

(iii) The circumstances that could have resulted in exposure to the pesticide.

(g) Ensure that workers or other persons employed by the agricultural establishment do not clean, repair, or adjust pesticide application equipment, unless trained as a handler under § 170.201. Before allowing any person not directly employed by the agricultural establishment to clean, repair, or adjust equipment that has been used to mix, load, transfer, or apply pesticides, the agricultural

employer must provide all of the following information to such persons:

(1) That pesticide application equipment may be contaminated with pesticides.

(2) The potentially harmful effects of exposure to pesticides.

(3) Procedures for handling pesticide application equipment and for limiting exposure to pesticide residues.

(4) Personal hygiene practices and decontamination procedures for preventing pesticide exposures and removing pesticide residues.

(h) Provide pesticide information in accordance with § 170.11 if workers or handlers are on the establishment and within the last 30 days a pesticide product bearing a label requiring compliance with this part has been used, or a restricted-entry interval for such pesticide has been in effect on the establishment.

(i) Ensure that before a handler uses any equipment for mixing, loading, transferring, or applying pesticides, the handler is instructed in the safe operation of such equipment.

(j) Ensure that, before each day of use, equipment used for mixing, loading, transferring, or applying pesticides is inspected for leaks, clogging, and worn or damaged parts, and any damaged equipment is repaired or replaced.

(k) Ensure that whenever handlers employed by a commercial pesticide handler establishment will be on an agricultural establishment, the handler employer is provided information about, or is aware of, the specific location and description of any entry restricted areas, or treated areas where a restricted-entry interval is in effect, and any restrictions on entering those areas.

#### **§ 170.11 Pesticide information requirements on agricultural establishments.**

(a) *Pesticide Safety Information.* Whenever pesticide information is required to be provided under § 170.9(h), pesticide safety information must be displayed on the agricultural establishment in accordance with this paragraph (a).

(1) *Content.* The pesticide safety information must be conveyed in a manner that workers and handlers can understand and must include all of the following points:

(i) Avoid getting on the skin or into the body any pesticides that may be on or in plants, soil, irrigation water, tractors, and other equipment, on used personal protective equipment, or drifting from nearby applications.

(ii) Wash before eating, drinking, using chewing gum or tobacco, or using the toilet.

(iii) Wear work clothing that protects the body from pesticide residues (long-sleeved shirts, long pants, shoes and socks, and a hat or scarf).

(iv) Wash or shower with soap and water, shampoo hair, and put on clean clothes after work.

(v) Wash work clothes separately from other clothes before wearing them again.

(vi) Wash immediately in the nearest clean water if pesticides are spilled or sprayed on the body. As soon as possible, shower, shampoo hair, and change into clean clothes.

(vii) Follow directions about keeping out of treated or entry-restricted areas.

(viii) The name, address, and telephone number of the nearest operating emergency medical care facility.

(ix) After [date 2 years after effective date of the final rule specified in § 170.7], the pesticide safety information must also include the name, address, and telephone number of the state or tribal lead agency responsible for pesticide enforcement, and instructions to employees to seek medical attention as soon as possible if they believe they have been poisoned or injured by pesticides.

(2) *Changes to pesticide safety information.* If there are any changes to the information in §§ 170.11(a)(1)(viii) or 170.11(a)(1)(ix), the agricultural employer must promptly update the pesticide safety information display.

(3) *Location.* The pesticide safety information must be displayed at a place on the agricultural establishment where workers and handlers are likely to pass by or congregate and it can be readily seen and read. The pesticide safety information must also be displayed anywhere that decontamination supplies must be provided on the agricultural establishment pursuant to §§ 170.111 or 170.209.

(4) *Accessibility.* Workers and handlers must be allowed access to the pesticide safety information at all times when the information is required to be displayed.

(5) *Legibility.* The pesticide safety information must remain legible at all times when the information is required to be displayed.

(b) *Keeping and providing information about pesticides used on the agricultural establishment—(1) Content and timing.* Whenever pesticide information is required to be provided under § 170.9(h), the agricultural employer must maintain copies of the pesticide product labeling and the safety data sheet for the pesticide product(s) applied and record all of the following information no later than the end of the

work day that the application takes place:

(i) The name, EPA registration number, and active ingredient(s) of the pesticide product applied.

(ii) The crop or site treated and the location and description of the treated area.

(iii) The date(s) and times the application started and ended.

(iv) The end date and duration of the restricted-entry interval.

(2) *Record Retention and Accessibility.* The agricultural employer must maintain the pesticide information described in § 170.11(b)(1) on the agricultural establishment for 2 years after the date of expiration of any restricted-entry interval, and make the information available to any worker(s), handler(s), or their authorized representative(s) upon request during normal work hours.

#### **§ 170.13 Commercial pesticide handler employer duties.**

Commercial pesticide handler employers must:

(a) Ensure that any pesticide applied on an agricultural establishment is used in a manner consistent with the pesticide product labeling, including the requirements of this part.

(b) Ensure each handler subject to this part receives the protections required by this part.

(c) Ensure that any handler is at least 16 years old.

(d) Provide to each person, including labor contractors, who supervises any handlers, information and directions sufficient to ensure that each handler receives the protections required by this part. Such information and directions must specify the tasks for which the supervisor is responsible in order to comply with the provisions of this part.

(e) Require each person, including labor contractors, who supervises any handlers, to provide sufficient information and directions to each handler to ensure that the handler can comply with the provisions of this part.

(f) Ensure that before any handler uses any equipment for mixing, loading, transferring, or applying pesticides, the handler is instructed in the safe operation of such equipment.

(g) Ensure that, before each day of use, equipment used for mixing, loading, transferring, or applying pesticides is inspected for leaks, obstructions, and worn or damaged parts, and any damaged equipment is repaired or is replaced.

(h) Ensure that whenever a handler who is employed by a commercial pesticide handling establishment will be on an agricultural establishment, the

handler is provided information about, or is aware of, the specific location and description of any entry restricted areas, or treated areas where a restricted-entry interval is in effect, and the restrictions on entering those areas.

(i) Provide the agricultural employer all of the following information before the application of any pesticide on an agricultural establishment:

(1) Specific location(s) and description of the area(s) to be treated.

(2) The date(s) and start and estimated end times of application.

(3) Product name, EPA registration number, and active ingredient(s).

(4) Restricted-entry interval.

(5) Whether posting and oral notification are required under § 170.109.

(6) Any restrictions or use directions on the pesticide product labeling that must be followed for protection of workers, handlers, or other persons during or after application.

(j) Ensure if there are any changes to the information provided in § 170.13(i), that the agricultural employer is provided updated information within 2 hours after completing the application. Changes to the estimated application end time of less than 1 hour do not require notification.

(k) *Provide emergency assistance.* If there is reason to believe that a person who is or has been employed by the commercial pesticide handling establishment to perform tasks related to the production of agricultural plants, has been poisoned or injured by exposure to pesticides as a result of that employment, the commercial pesticide handler employer must do all of the following, within 30 minutes after learning of the possible poisoning or injury:

(1) Make available to that person transportation from the commercial pesticide handling establishment, or any agricultural establishment on which that person may be working, to an operating emergency medical facility.

(2) Provide to that person or treating medical personnel all of the following information for each pesticide product to which that person might have been exposed:

(i) Copies of the applicable safety data sheet and the label for the pesticide product, or alternatively, a copy of the applicable safety data sheet for the pesticide product and the product name, EPA registration number, active ingredients, antidote, and first aid and medical treatment information listed on the pesticide product labeling.

(ii) The circumstances of application or use of the pesticide(s).

(iii) The circumstances that could have resulted in exposure to the pesticide(s).

(l) Ensure that persons employed by the commercial pesticide handling establishment do not clean, repair, or adjust pesticide application equipment, unless trained as a handler under § 170.201. Before allowing any person not directly employed by the commercial pesticide handling establishment to clean, repair, or adjust equipment that has been used to mix, load, transfer, or apply pesticides, the commercial pesticide handler employer must provide all of the following information to such persons:

(1) That pesticide application equipment may be contaminated with pesticides.

(2) The potentially harmful effects of exposure to pesticides.

(3) Procedures for handling pesticide application equipment and for limiting exposure to pesticide residues.

(4) Personal hygiene practices and decontamination procedures for preventing pesticide exposures and removing pesticide residues.

#### **§ 170.15 Prohibited actions.**

No agricultural employer, commercial pesticide handler employer, or other person involved in the use of a pesticide to which this part applies, shall intimidate, threaten, coerce, or discriminate against any worker or handler for attempting to comply with this part, or because the worker or handler has made a complaint, testified, assisted, or participated in any manner in an investigation, proceeding, or hearing concerning compliance with this part. Any such intimidation, threat, coercion, or discrimination violates FIFRA section 12(a)(2)(G), 7 U.S.C. 136j(a)(2)(G).

#### **§ 170.17 Violations of this part.**

(a) Under FIFRA section 12(a)(2)(G), it is unlawful for any person “to use any registered pesticide in a manner inconsistent with its labeling.” When this part is referenced on a label, users must comply with all of its requirements, except those that are inconsistent with product-specific instructions on the pesticide product labeling.

(b) A person who has a duty under this part, as referenced on the pesticide product labeling, and who fails to perform that duty, violates FIFRA section 12(a)(2)(G) and is subject to a civil penalty under section 14. A person who knowingly violates section 12(a)(2)(G) is subject to section 14 criminal sanctions.

(c) FIFRA section 14(b)(4) provides that a person is liable for a penalty under FIFRA if another person employed by or acting for that person violates any provision of FIFRA. The term “acting for” includes both employment and contractual relationships, including, but not limited to, labor contractors.

(d) The requirements of this part, including the decontamination requirements, must not, for the purposes of section 653(b)(1) of Title 29 of the U.S. Code, be deemed to be the exercise of statutory authority to prescribe or enforce standards or regulations affecting the general sanitary hazards addressed by the OSHA Field Sanitation Standard, 29 CFR 1928.110, or other agricultural non-pesticide hazards.

### Subpart B—Requirements for Protection of Agricultural Workers

#### § 170.101 Training requirements for workers.

(a) *General requirement.* Before any worker performs any task in a treated area on an agricultural establishment where within the last 30 days a pesticide product bearing a label requiring compliance with this part has been used, or a restricted-entry interval for such pesticide has been in effect, the agricultural employer must ensure that each worker has been trained in accordance with this section within the last 12 months, except as provided in paragraph (b) of this section and in § 170.309 of this part.

(b) *Exceptions.* The following workers need not be trained under this section:

(1) A worker who is currently certified as an applicator of restricted use pesticides under part 171 of this chapter.

(2) A worker who has satisfied the handler training requirements of § 170.201.

(3) A worker who is certified or licensed as a crop advisor by a program acknowledged as appropriate in writing by EPA or the state or tribal agency responsible for pesticide enforcement, provided that a requirement for such certification or licensing is pesticide safety training that includes all the topics set out in § 170.201(c)(2) and (3).

(c) *Training programs.* (1) Pesticide safety training must be presented to workers either orally from written materials or audio-visually, at a location that is reasonably free from distraction and conducive to training. All training materials must be EPA-approved. The training must be presented in a manner that the workers can understand, such as through a translator. A person that meets the trainer requirements of

§ 170.101(c)(4) must be present during the entire training program to conduct the training and must respond to workers' questions.

(2) The training must include, at a minimum, all of the following topics:

(i) Agricultural employers are required to provide workers with information and protections designed to reduce work-related pesticide exposures and illnesses. This includes providing pesticide safety training, pesticide safety and application information, decontamination supplies, and emergency medical assistance, and notifying workers of restrictions during applications and on entering pesticide treated areas.

(ii) How to recognize and understand the meaning of the field warning sign used for notifying workers of restrictions on entering pesticide treated areas on the establishment.

(iii) How to follow directions and/or signs about keeping out of entry-restricted or pesticide treated areas.

(iv) Where and in what form pesticides may be encountered during work activities and potential sources of pesticide exposure on the agricultural establishment. This includes that pesticide residues may be on or in plants, soil, irrigation water, tractors, application equipment, or used personal protective equipment and that pesticides may drift through the air from nearby applications.

(v) Potential hazards from toxicity and exposure that pesticides present to workers and their families, including acute and chronic effects, delayed effects, and sensitization.

(vi) Potential hazards from chemigation and drift.

(vii) Routes through which pesticides can enter the body.

(viii) Signs and symptoms of common types of pesticide poisoning.

(ix) Emergency first aid for pesticide injuries or poisonings.

(x) Routine and emergency decontamination procedures, including emergency eye flushing techniques.

(xi) Wash immediately in the nearest clean water if pesticides are spilled or sprayed on the body and as soon as possible, shower, shampoo hair, and change into clean clothes.

(xii) How and when to obtain emergency medical care.

(xiii) When working near pesticides or in pesticide treated areas, wear work clothing that protects the body from pesticide residues and wash hands before eating, drinking, using chewing gum or tobacco, or using the toilet.

(xiv) Wash or shower with soap and water, shampoo hair, and change into clean clothes as soon as possible after

working near or in pesticide treated areas.

(xv) Potential hazards from pesticide residues on clothing.

(xvi) Wash work clothes before wearing again.

(xvii) Wash work clothes separately from other clothes.

(xviii) Do not take pesticides or pesticide containers used at work to your home.

(3) After [date 2 years after effective date of the final rule specified in § 170.7] if EPA has announced availability of training materials that comply with the requirements of § 170.101(c)(2)(i)–(xviii) and § 170.101(c)(3)(i)–(ix) in the **Federal Register** by [date 18 months after effective date specified in § 170.7], or 180 days after EPA announces availability of training materials that comply with the requirements of § 170.101(c)(2)(i)–(xviii) and § 170.101(c)(3)(i)–(ix) in the **Federal Register** if announced after [date 18 months after effective date specified in § 170.7], the training must also include all of the following:

(i) Agricultural employers are required to provide workers with pesticide hazard information.

(ii) Agricultural employers must not allow or direct any worker to mix, load or apply pesticides or assist in the application of pesticides unless the worker has been trained as a handler.

(iii) There are minimum age restrictions and notification requirements for early entry activities.

(iv) Potential hazards to children and pregnant women from pesticide exposure.

(v) Keep children and nonworking family members away from pesticide treated areas.

(vi) Remove work boots or shoes before entering home.

(vii) After working near or in pesticide treated areas, remove work clothes and wash or shower before physical contact with children or family members.

(viii) How to report suspected pesticide use violations to the state or tribal agency responsible for pesticide enforcement.

(ix) Agricultural employers are prohibited from intimidating, threatening, coercing, or discriminating against any worker for attempting to comply with the requirements of this part, or because the worker has made a complaint, testified, assisted, or participated in any manner in an investigation, proceeding, or hearing pursuant to this part.

(4) The person who conducts the training must meet one of the following:



(v) Eleven hours with no ventilation followed by 2 hours of passive ventilation.

(vi) Twenty-four hours with no ventilation.

(4) The following Table 2 applies to paragraphs (b)(1), (2), and (3) of this section.

TABLE 2—ENTRY-RESTRICTED AREAS DURING ENCLOSED SPACE PRODUCTION PESTICIDE APPLICATIONS

A. When a pesticide is applied:	B. Workers and other persons, other than appropriately trained and equipped handlers, are prohibited in:	C. Until:	D. After the expiration of time specified in column C, the area subject to the restricted-entry interval is:
(1) As a fumigant. ....	Entire enclosed space plus any adjacent structure or area that cannot be sealed off from the treated area.	The ventilation criteria of paragraph (b)(3) of this section are met.	No post-application entry restrictions required by §170.107 after criteria in column C are met.
(2) As a (i) Smoke, or (ii) Mist, or (iii) Fog, or (iv) Aerosol.	Entire enclosed space .....	The ventilation criteria of paragraph (b)(3) of this section are met.	Entire enclosed space.
(3) Not in (1) or (2) of this table, and for which a respiratory protection device is required for application by the product label.	Entire enclosed space .....	The ventilation criteria of paragraph (b)(3) of this section are met.	Treated area.
(4) Not in (1), (2), or (3) of this table, and: (i) From a height of greater than 12 in. from the planting medium, or (ii) As a fine spray (droplet median diameter of 101–200 microns), or (iii) Using a spray pressure greater than 40 psi.	Treated area plus 25 feet in all directions of the treated area, but not outside the enclosed space.	Application is complete .....	Treated area.
(5) Otherwise. ....	Treated area .....	Application is complete .....	Treated area.

**§ 170.107 Worker entry restrictions after pesticide applications.**

(a) After the application of any pesticide in outdoor production on an agricultural establishment, the agricultural employer must not allow or direct any worker to enter or to remain in the treated area before the restricted-entry interval specified on the pesticide labeling has expired and all treated area warning signs have been removed, except for early entry activities permitted by § 170.303.

(b) After the application of any pesticide in enclosed space production, the agricultural employer must not allow or direct any worker to enter or to remain in the areas specified in column D in Table 2 under § 170.105(b)(4), before the restricted-entry interval specified on the pesticide labeling has expired and all treated area warning signs have been removed, except for early entry activities permitted by § 170.303.

(c) When two or more pesticides are applied at the same time, the applicable restricted-entry interval is the longest of the applicable restricted-entry intervals.

**§ 170.109 Oral and posted notification of worker entry restrictions.**

(a) *General Requirement.* The agricultural employer must notify workers of all entry restrictions required

by §§ 170.105 and 170.107 in accordance with this section.

(1) *Type of notification required—(i) Outdoor production applications.* If a pesticide with product labeling that requires a restricted-entry interval greater than 48 hours is applied in outdoor production, the agricultural employer must notify workers of the application by posting warning signs in accordance with paragraph (b) of this section. If the product labeling of the pesticide requires a restricted-entry interval equal to or less than 48 hours, the agricultural employer must notify workers of the application either by posting warning signs in accordance with paragraph (b) of this section or by providing workers with an oral warning in accordance with paragraph (c) of this section.

(ii) *Enclosed space production applications.* If a pesticide with product labeling that requires a restricted-entry interval greater than 4 hours is applied in enclosed space production, the agricultural employer must notify workers of the application by posting warning signs in accordance with paragraph (b) of this section. If the product labeling of the pesticide requires a restricted-entry interval equal to or less than 4 hours, the agricultural employer must notify workers of the

application either by posting warning signs in accordance with paragraph (b) of this section or by providing workers with an oral warning in accordance with paragraph (c) of this section.

(iii) *Double notification.* If the pesticide product labeling has a statement requiring both the posting of treated areas and oral notification to workers, the agricultural employer must post signs in accordance with paragraph (b) of this section and must also provide oral notification of the application to the worker in accordance with paragraph (c) of this section.

(2) *Exceptions.* Notification need not be given to a worker if the agricultural employer can ensure that one of the following is met:

(i) From the start of the application in enclosed space production until the end of the application and during any restricted-entry interval, no workers will enter the entire enclosed space.

(ii) The only worker(s) for which notification is required were also involved in the application of the pesticide as handlers, and they are aware of all information required by paragraph (c)(1) of this section.

(iii) From the start of the application in outdoor production until the end of the application and during any restricted-entry interval, no worker(s) will enter, work in, remain in, or pass

through on foot the treated area or any area within 1/4 mile of the treated area on the agricultural establishment.

(b) *Requirements for posted warning signs.* When posting is required, the agricultural employer must, unless otherwise prescribed by the label, ensure that the warning sign(s) conforms to the requirements of this paragraph. When several contiguous areas are to be treated with pesticides on a rotating or sequential basis, the entire area may be posted. Worker entry, other than entry permitted by § 170.303 of this part, is prohibited for the entire area while the signs are posted.

(1) *General.* The warning signs must meet all of the following requirements:

(i) Be one of the three sizes specified in this paragraph (b) and comply with the posting placement and spacing requirements applicable to that sign size.

(ii) Be posted prior to but no earlier than 24 hours before the scheduled application of the pesticide.

(iii) Remain posted throughout the application and any restricted-entry interval.

(iv) Be removed or covered within 3 days after the end of the application or any restricted-entry interval, whichever is later, but under no circumstances shall the signs remain posted and uncovered when worker entry is permitted, other than entry permitted by § 170.303 of this part.

(v) Remain visible and legible during the time they are required to be posted.

(2) *Content.* (i) The warning sign must have a white background. The words "DANGER" and "PELIGRO," plus "PESTICIDES" and "PESTICIDAS," must be at the top of the sign, and the words "Entry Restricted" and "Entrada Restringida" must be at the bottom of the sign. Letters for all words must be clearly legible. An octagon containing an upraised hand on the left and a stern face on the right must be near the center of the sign. The inside of the octagon must be red, except that the hand and a large portion of the face must be in white. The length of the hand must be at least twice the height of the smallest letters. The length of the face must be only slightly smaller than the hand. Additional information such as the name of the pesticide and the date of application may appear on the warning sign if it does not detract from the size and appearance of the sign or change the meaning of the required information. An example of a warning sign meeting these requirements, other than the size and color requirements, follows:



(ii) The agricultural employer may replace the Spanish portion of the warning sign with an alternative non-English language if that alternative language is the language read by the largest group of workers at that agricultural establishment who do not read English. The alternative language sign must be in the same format as the original sign and conform to all other requirements of paragraph (b)(2)(i) of this section.

(iii) Until [date 2 years after effective date of the final rule specified in § 170.7], a warning sign meeting the following requirements may be substituted for the warning sign specified in paragraph (b)(i) of this section. The warning sign must have a background color that contrasts with red. The words "DANGER" and "PELIGRO," plus "PESTICIDES" and "PESTICIDAS," shall be at the top of the sign, and the words "KEEP OUT" and "NO ENTRE" shall be at the bottom of the sign. Letters for all words must be clearly legible. A circle containing an upraised hand on the left and a stern face on the right must be near the center of the sign. The inside of the circle must be red, except that the hand and a large portion of the face must be in a shade that contrasts with red. The length of the hand must be at least twice the height of the smallest letters. The length of the face must be only slightly smaller than the hand. Additional information such as the name of the pesticide and the date of application may appear on the warning sign if it does not detract from the appearance of the sign or change the meaning of the required information. An example of a warning sign meeting these requirements, other

than the size and color requirements, follows:



(3) *Size and posting.* (i) The standard sign must be at least 14 inches by 16 inches with letters at least 1 inch in height.

(ii) When posting treated areas in outdoor production using the standard sign, the signs must be visible from all reasonably expected points of worker entry to the treated area, including at least each access road, each border with any worker housing area within 100 feet of the treated area, and each footpath and other walking route that enters the treated area. Where there are no reasonably expected points of worker entry, signs must be posted in the corners of the treated area or in any other location affording maximum visibility.

(iii) When posting treated areas in enclosed space production using the standard sign, the signs must be posted so they are visible from all reasonably expected points of worker entry to the treated area including each aisle or other walking route that enters the treated area. Where there are no reasonably expected points of worker entry to the treated area, signs must be posted in the corners of the treated area or in any other location affording maximum visibility.

(iv) If a smaller warning sign is used with "DANGER" and "PELIGRO" in letters at least 7/8 inch in height and the remaining letters at least 1/2 inch in height and a red octagon at least 3 inches in diameter containing an upraised hand and a stern face, the signs must be posted no farther than 50 feet apart around the perimeter of the treated area in addition to the locations specified in paragraphs (b)(3)(ii) or (b)(3)(iii) of this section.

(v) If a smaller sign is used with “DANGER” and “PELIGRO” in letters at least 7/16 inch in height and the remaining letters at least 1/4 inch in height and a red octagon at least one and a half inches in diameter containing an upraised hand and a stern face, the signs must be posted no farther than 25 feet apart around the perimeter of the treated area in addition to the locations specified in paragraphs (b)(3)(ii) or (b)(3)(iii) of this section.

(vi) A sign with “DANGER” and “PELIGRO” in letters less than 7/16 inch in height or with any words in letters less than 1/4 inch in height or a red octagon smaller than one and a half inches in diameter containing an upraised hand and a stern face is not permitted.

(c) *Oral warnings*—(1) *Requirement*. The agricultural employer must provide oral warnings to workers in a manner that the workers can understand. If a worker is on the premises when an application will occur, the warning must be given before the application begins. Otherwise, the warning must be given at the beginning of the worker’s first work period during which the application is taking place or the restricted-entry interval for the pesticide is in effect. The warning must include all of the following:

(i) The location(s) and description of the entry-restricted area(s) and the treated area(s).

(ii) The dates and times during which entry is restricted.

(iii) Instructions not to enter the entry-restricted area during application, and not to enter the treated area until the restricted-entry interval has expired.

#### **§ 170.111 Worker decontamination supplies.**

(a) *Requirement*. The agricultural employer must provide decontamination supplies in accordance with this section for any worker on an agricultural establishment who is performing an activity in an area where a pesticide was applied and who contacts anything that has been treated with the pesticide, including, but not limited to, soil, water, and plants.

(b) *General conditions*. The decontamination supplies required in paragraph (a) of this section must include 1 gallon of water per worker for routine washing and emergency eye flushing, soap, and single-use towels. The supplies must meet all of the following requirements:

(1) *Water*. At all times when this part requires agricultural employers to make water available to workers, the agricultural employer must ensure that it is of a quality and temperature that

will not cause illness or injury when it contacts the skin or eyes or if it is swallowed. When water stored in a tank is to be used for mixing pesticides, it must not be used for decontamination or eye flushing, unless the tank is equipped with properly functioning valves or other mechanisms that prevent movement of pesticides into the tank, such as anti-backflow siphon devices, one-way or check valves, or an air gap sufficient to prevent contamination.

(2) *Soap and single-use towels*. The agricultural employer must provide soap and single-use towels for drying in quantities sufficient to meet the workers’ needs. Hand sanitizing gels and liquids or wet towelettes do not meet the requirement for soap. Wet towelettes do not meet the requirement for single-use towels.

(c) *Timing*. (1) If any pesticide with a restricted-entry interval greater than 4 hours was applied, the decontamination supplies must be provided from the time workers first enter the treated area until at least 30 days after the restricted-entry interval expires.

(2) If the only pesticides applied in the treated area are products with a restricted-entry interval of 4 hours or less, the decontamination supplies must be provided from the time workers first enter the treated area until at least 7 days after the restricted-entry interval expires.

(d) *Location*. (1) The decontamination supplies must be located together and be reasonably accessible to and not more than 1/4 mile from where workers are working.

(2) Where workers are working more than 1/4 mile from the nearest place of vehicular access, the soap, single-use towels, clean change of clothing, and water may be at the nearest place of vehicular access.

(3) The decontamination supplies must be outside any treated area.

### **Subpart C—Requirements for Protection of Agricultural Pesticide Handlers**

#### **§ 170.201 Training requirements for handlers.**

(a) *General requirement*. Before any handler performs any handler activity involving a pesticide product bearing a label requiring compliance with this part, the handler employer must ensure that the handler has been trained in accordance with this section within the last 12 months, except as provided in paragraph (b) of this section.

(b) *Exceptions*. The following persons need not be trained under this section:

(1) A handler who is currently certified as an applicator of restricted

use pesticides under part 171 of this chapter.

(2) A handler who is certified or licensed as a crop advisor by a program acknowledged as appropriate in writing by EPA or the state or tribal agency responsible for pesticide enforcement, provided that a requirement for such certification or licensing is pesticide safety training that includes all the topics set out in § 170.201(c)(2) and (3).

(c) *Training programs*. (1) Pesticide safety training must be presented to handlers either orally from written materials or audio-visually, at a location that is reasonably free from distraction and conducive to training. All training materials must be EPA-approved. The training must be presented in a manner that the handlers can understand, such as through a translator. A person that meets the handler trainer requirements of § 170.201(c)(4) must be present during the entire training program to conduct the training and must respond to handlers’ questions.

(2) The pesticide safety training materials must include, at a minimum, all of the following:

(i) All the topics required by § 170.101(c)(2).

(ii) Information on proper application and use of pesticides.

(iii) Handlers must follow all pesticide labeling and use directions.

(iv) Format and meaning of all information contained on pesticide labels and in labeling.

(v) Need for and appropriate use and removal of all personal protective equipment.

(vi) How to recognize, prevent, and provide first aid treatment for heat-related illness.

(vii) Safety requirements for handling, transporting, storing, and disposing of pesticides, including general procedures for spill cleanup.

(viii) Environmental concerns, such as drift, runoff, and wildlife hazards.

(ix) Handlers must not apply pesticides in a manner that results in contact with workers or other persons.

(x) Handler employers are required to provide handlers with information and protections designed to reduce work-related pesticide exposures and illnesses. This includes providing, cleaning, maintaining, storing, and ensuring proper use of all required personal protective equipment; providing decontamination supplies; and providing specific information about pesticide use and labeling information.

(3) After [date 2 years after effective date of final rule specified in § 170.7] if EPA has announced availability of training materials that comply with the

requirements of § 170.201(c)(2)(i)–(x) and § 170.201(c)(3)(i)–(iv) in the **Federal Register** by [date 18 months after effective date specified in § 170.7], or 180 days after EPA announces availability of training materials that comply with the requirements of § 170.201(c)(2)(i)–(x) and § 170.201(c)(3)(i)–(iv) in the **Federal Register** if announced after [date 18 months after effective date specified in § 170.7], the training materials must also include all of the following:

(i) Handlers must cease or suspend a pesticide application if workers or other persons are in the treated area or the entry-restricted area.

(ii) Handlers must be at least 16 years of age.

(iii) Handler employers must ensure handlers have received respirator fit-testing, training and medical evaluation if they are required to wear a respirator.

(iv) Handler employers must post treated areas as required by this rule.

(v) All the topics specified in § 170.101(c)(3).

(4) The person who conducts the training must meet one of the following:

(i) Be certified as an applicator of restricted use pesticides under part 171 of this chapter.

(ii) Be designated as a trainer of certified applicators or pesticide handlers by EPA or the state or tribal agency responsible for pesticide enforcement.

(iii) Have completed an EPA-approved pesticide safety train-the-trainer program for handler trainers.

(d) **Recordkeeping.** (1) Handler employers must maintain records of training for handlers employed by their establishment for 2 years from the date of the training. The records must be maintained on the establishment and must include all of the following information:

(i) The trained handler's printed name and signature.

(ii) The trained handler's date of birth.

(iii) The date of the training.

(iv) Information identifying which EPA-approved training materials were used.

(v) The trainer's name and documentation showing that the trainer met the requirements of § 170.201(c)(4) at the time of training.

(vi) The handler employer's name.

(2) For each handler trained, the handler employer must provide a record of the training to the handler that contains the information required under § 170.201(d)(1).

**§ 170.203 Knowledge of labeling, application-specific, and establishment-specific information for handlers.**

(a) **Knowledge of labeling and application-specific information.** (1) The handler employer must ensure that before any handler performs any handler activity involving a pesticide product bearing a label requiring compliance with this part, the handler either has read the pesticide product labeling or has been informed in a manner the handler can understand of all labeling requirements and use directions necessary for proper use of the pesticide.

(2) The handler employer must ensure that the handler has access to the product labeling at all times during handler activities.

(3) The handler employer must ensure that the handler is aware of requirements for any entry-restricted areas as described in § 170.105.

(b) **Knowledge of establishment-specific information—(1) Requirement.** Before any handler performs any pesticide handler activity on an agricultural establishment where within the last 30 days a pesticide product bearing a label requiring compliance with this part has been used, or a restricted-entry interval for such pesticide has been in effect, the handler employer must ensure that the handler has been informed of establishment-specific information in accordance with this paragraph (b). The establishment-specific information must be provided orally, in a manner the handler can understand.

(2) **Content.** The establishment-specific information must include all of the following:

(i) The location of pesticide safety information required by § 170.11(a).

(ii) The location of pesticide application and hazard information required by § 170.11(b).

(iii) The location of decontamination supplies required by § 170.209.

**§ 170.205 Requirements during applications to protect handlers, workers, and other persons.**

(a) **Contact with workers and other persons.** The handler employer and the handler must ensure that no pesticide is applied so as to contact, directly or through drift, any worker or other person, other than an appropriately trained and equipped handler located on the establishment.

(b) **Suspending applications.** After [date 2 years after effective date of final rule specified in § 170.7], the handler performing the application must immediately stop or suspend a pesticide application if any worker or other

person, other than an appropriately trained and equipped handler, is in the treated area or entry-restricted area.

(c) **Handlers using highly toxic pesticides.** The handler employer must ensure that any handler who is performing any handler activity with a pesticide product that has the skull-and-crossbones symbol on the front panel of the pesticide product label is monitored visually or by voice communication at least every 2 hours.

(d) **Fumigant applications in enclosed space production.** The handler employer must ensure all of the following:

(1) That any handler who enters an entry-restricted area described in Table 2 of § 170.105, maintains continuous visual or voice contact with another handler stationed immediately outside of the enclosed space.

(2) That the handler stationed outside the enclosed space has immediate access to and uses the personal protective equipment required by the fumigant labeling for handlers, in the event that entry becomes necessary for rescue.

**§ 170.207 Personal protective equipment.**

(a) **Handler responsibilities.** Any person who performs handler activities involving a pesticide product bearing a label requiring compliance with this part must use the clothing and personal protective equipment specified on the pesticide product labeling for use of the product.

(b) **Employer responsibilities for providing personal protective equipment.** The handler employer must provide to the handler the personal protective equipment required by pesticide product labeling in accordance with this section. The handler employer must ensure that the personal protective equipment is clean and in proper operating condition. For the purposes of this section, long-sleeved shirts, short-sleeved shirts, long pants, short pants, shoes, and socks are not considered personal protective equipment, even though pesticide labeling may require such work clothing to be worn.

(1) When “chemical-resistant” personal protective equipment is specified by the pesticide product labeling to be worn, it must be made of material that the manufacturer has declared, in writing, to be chemical resistant.

(2) When “waterproof” personal protective equipment is specified by the pesticide product labeling to be worn, it must be made of material that allows no measurable movement of water or aqueous solutions through the material during ordinary conditions of use.

(3) When a “chemical-resistant suit” is specified by the pesticide product labeling to be worn, it must be a loose-fitting, one- or two-piece chemical-resistant garment that covers, at a minimum, the entire body except head, hands, and feet.

(4) When “coveralls” are specified by the pesticide product labeling to be worn, they must be loose-fitting, one- or two-piece garments that cover, at a minimum, the entire body except head, hands, and feet.

(5) Gloves must be the type specified on the pesticide product labeling.

(i) Gloves made of leather, cotton, or other absorbent materials may not be worn while performing handler activities unless gloves made of these materials are listed as acceptable for such use on the pesticide product labeling.

(ii) Separable glove liners may be worn beneath chemical-resistant gloves, unless the pesticide product labeling specifically prohibits their use.

Separable glove liners are defined as separate glove-like hand coverings, made of lightweight material, with or without fingers. Work gloves made from lightweight cotton or poly-type material are considered to be glove liners if worn beneath chemical-resistant gloves. Separable glove liners may not extend outside the chemical-resistant gloves under which they are worn. Chemical-resistant gloves with non-separable absorbent lining materials are prohibited.

(iii) If used, separable glove liners must be discarded immediately after a total of no more than 10 hours of use or within 24 hours of when first put on, whichever comes first. The liners must be replaced immediately if directly contacted by pesticide. Used glove liners must not be reused. Contaminated liners must be disposed of in accordance with any federal, state, or local regulations.

(6) When “chemical-resistant footwear” is specified by the pesticide product labeling to be worn, one of the following types of footwear must be worn:

- (i) Chemical-resistant shoes.
- (ii) Chemical-resistant boots.
- (iii) Chemical-resistant shoe coverings worn over shoes or boots.

(7) When “protective eyewear” is specified by the pesticide product labeling to be worn, one of the following types of eyewear must be worn:

- (i) Goggles.
- (ii) Face shield.
- (iii) Safety glasses with front, brow, and temple protection.
- (iv) Full-face respirator.

(8) When a “chemical-resistant apron” is specified by the pesticide product labeling to be worn, an apron that covers the front of the body from mid-chest to the knees must be worn.

(9) The respirator specified by the pesticide product labeling must be used. Whenever a respirator other than a dust/mist filtering respirator is required by the pesticide product labeling, the handler employer must ensure that the requirements of paragraphs (b)(9)(i) through (iii) of this section are met before the handler performs any pesticide handler activity where the respirator is required to be worn. The handler employer must maintain for 2 years, on the establishment, records documenting the completion of the requirements of paragraphs (b)(9)(i) through (iii) of this section.

(i) Handler employers must provide handlers with fit-testing using the respirator specified on the pesticide product labeling in a manner that conforms to the provisions of 29 CFR 1910.134.

(ii) Handler employers must provide handlers with training in the use of the respirator specified on the pesticide product labeling in a manner that conforms to the provisions of 29 CFR 1910.134.

(iii) Handler employers must provide handlers with a medical evaluation by a physician or other licensed health care professional that conforms to the provisions of 29 CFR 1910.134 to ensure the handler’s physical ability to safely wear the respirator specified on the pesticide product labeling.

(10) When “chemical-resistant headgear” is specified by the pesticide product labeling, it must be either a chemical-resistant hood or a chemical-resistant hat with a wide brim.

(c) *Use of personal protective equipment.* (1) The handler employer must ensure that personal protective equipment is used correctly for its intended purpose and is used according to the manufacturer’s instructions.

(2) The handler employer must ensure that, before each day of use, all personal protective equipment is inspected for leaks, holes, tears, or worn places, and any damaged equipment is repaired or discarded.

(d) *Cleaning and maintenance.* (1) The handler employer must ensure that all personal protective equipment is cleaned according to the manufacturer’s instructions or pesticide product labeling instructions before each day of reuse. In the absence of any such instructions, it must be washed thoroughly in detergent and hot water.

(2) If any personal protective equipment cannot be cleaned properly,

the handler employer must render the personal protective equipment unusable and dispose of it in accordance with any applicable federal, state, and local regulations. Coveralls or other absorbent materials that have been drenched or heavily contaminated with a pesticide that has the signal word “DANGER” or “WARNING” on the label must not be reused.

(3) The handler employer must ensure that contaminated personal protective equipment is kept separately and washed separately from any other clothing or laundry.

(4) The handler employer must ensure that all washed personal protective equipment is dried thoroughly before being stored or reused.

(5) The handler employer must ensure that all clean personal protective equipment is stored separately from personal clothing and apart from pesticide-contaminated areas.

(6) The handler employer must ensure that when dust/mist filtering respirators are used, they are replaced when one of the following conditions is met:

(i) When breathing resistance becomes excessive.

(ii) When the filter element has physical damage or tears.

(iii) According to manufacturer’s recommendations or pesticide product labeling, whichever is more frequent.

(iv) In the absence of any other instructions or indications of service life, at the end of 8 hours of cumulative use.

(7) The handler employer must ensure that when gas- or vapor-removing respirators are used, the gas- or vapor-removing canisters or cartridges are replaced before further respirator use when one of the following conditions is met:

(i) At the first indication of odor, taste, or irritation.

(ii) When breathing resistance becomes excessive.

(iii) According to manufacturer’s recommendations or pesticide product labeling instructions, whichever is more frequent.

(iv) In the absence of any other instructions or indications of service life, at the end of 8 hours of cumulative use.

(8) The handler employer must inform any person who cleans or launders personal protective equipment of all the following:

(i) That such equipment may be contaminated with pesticides.

(ii) The potentially harmful effects of exposure to pesticides.

(iii) The correct way(s) to clean personal protective equipment and to protect themselves when handling such equipment.

(iv) Proper decontamination and personal hygiene practices.

(9) The handler employer must ensure that handlers have a place(s) away from pesticide storage and pesticide use areas where they may do all of the following:

(i) Store personal clothing not in use.

(ii) Put on personal protective equipment at the start of any exposure period.

(iii) Remove personal protective equipment at the end of any exposure period.

(10) The handler employer must not allow or direct any handler to wear home or to take home personal protective equipment contaminated with pesticides.

(e) *Heat-related illness.* Where a pesticide label requires the use of personal protective equipment for a handler activity, the handler employer must take appropriate measures to prevent heat-related illness.

#### § 170.209 Handler decontamination supplies.

(a) *Requirement.* The handler employer must provide decontamination supplies in accordance with this section for any handler that is performing any handler activity or removing personal protective equipment at the place for changing required by § 170.207(d)(9).

(b) *General conditions.* The decontamination supplies required in paragraph (a) of this section must include: at least 3 gallons of water per handler for routine hand washing, emergency eye flushing, and washing the entire body in case of an emergency; soap; single-use towels; and clean clothing for use in an emergency. The decontamination supplies must meet all of the following requirements:

(1) *Water.* At all times when this section requires handler employers to make water available to handlers, the handler employer must ensure that it is of a quality and temperature that will not cause illness or injury when it contacts the skin or eyes or if it is swallowed. When water stored in a tank is to be used for mixing pesticides, it must not be used for decontamination or eye flushing, unless the tank is equipped with properly functioning valves or other mechanisms that prevent movement of pesticides into the tank, such as anti-backflow siphon devices, one-way or check valves, or an air gap sufficient to prevent contamination.

(2) *Soap and single-use towels.* The handler employer must provide soap and single-use towels for drying in quantities sufficient to meet the handlers' needs. Hand sanitizing gels and liquids or wet towelettes do not

meet the requirement for soap. Wet towelettes do not meet the requirement for single-use towels.

(3) *Clean change of clothing.* The handler employer must provide one clean change of clothing, such as coveralls, for use in an emergency.

(c) *Location.* The decontamination supplies must be located together outside of any treated area, and be reasonably accessible to and not more than 1/4 mile from each handler during the handler activity.

(1) *Exception for mixing sites.* For mixing activities, decontamination supplies must be at the mixing site.

(2) *Exception for pilots.* Decontamination supplies for a pilot who is applying pesticides aerially must be in the aircraft or at the aircraft loading site.

(3) *Exception for handling pesticides in remote areas.* Where handler activities are performed more than 1/4 mile from the nearest place of vehicular access, the soap, single-use towels, clean change of clothing, and water may be at the nearest place of vehicular access.

(4) *Exception for treated areas.* The decontamination supplies must be outside any treated area or area subject to a restricted-entry interval, unless all of the following conditions are met:

(i) The soap, single-use towels, and clean change of clothing are protected from pesticide contamination in closed containers.

(ii) The water is protected from pesticide contamination in closed containers.

(d) *Emergency eyeflushing.* If the product label requires protective eyewear for handlers, the following requirements apply.

(1) To provide for emergency eyeflushing, the handler employer must provide at least 1 pint of water per handler in portable containers that are immediately available to each handler who is performing activities for which the pesticide labeling requires protective eyewear.

(2) A system capable of delivering at least 1.5 liters (0.4 gallons) of water per minute for 15 minutes must be provided at all permanent pesticide mixing and loading sites when the label requires protective eyewear for mixing, loading, or applying.

### Subpart D—Exemptions and Exceptions

#### § 170.301 Exemptions.

(a) *Exemption for owners of agricultural establishments and their immediate families.* (1) On any agricultural establishment that is wholly

owned by an individual, or where all of the owners of the establishment are members of the same immediate family, the owner(s) of the establishment are not required to provide the protections of the following provisions to themselves or members of their immediate family when they are performing handling tasks or tasks related to the production of agricultural plants that would otherwise be covered by this part on their own agricultural establishment.

(i) § 170.9(c).

(ii) § 170.9(f) through (j).

(iii) § 170.11.

(iv) § 170.101.

(v) § 170.103.

(vi) § 170.109.

(vii) § 170.111 and 170.209.

(viii) § 170.201.

(ix) § 170.203.

(x) § 170.205(c) and (d).

(xi) § 170.207(c) through (e).

(xii) § 170.305(a) through (c) and (e) through (k).

(2) The owners of agricultural establishments must provide all of the applicable protections required by this part for any employees or other persons on the establishment that are not members of their immediate family.

(b) *Certified crop advisors.* The requirements of §§ 170.9(e), 170.203(a), 170.207 and 170.209 of this part do not apply to certified crop advisors provided the application is complete and all of the following conditions are met:

(1) The crop advisor is certified or licensed as a crop advisor by a program acknowledged as appropriate in writing by EPA or a state or tribal agency responsible for pesticide enforcement.

(2) The certification or licensing program requires pesticide safety training that includes all the information in § 170.201(c)(2) and (3).

(3) The crop advisor who enters a treated area during a restricted-entry interval only performs crop advising tasks while in the treated area.

#### § 170.303 Exceptions for entry by workers during restricted-entry intervals.

An agricultural employer may direct workers to enter treated areas where a restricted-entry interval is in effect to perform certain activities as provided in this section, and provided that the agricultural employer ensures that the worker is at least 16 years old and all of the applicable conditions of this section and § 170.305 of this part are met.

(a) *Exception for activities with no contact.* A worker may enter a treated area during a restricted-entry interval if the agricultural employer ensures that all of the following conditions are met:

(1) The worker will have no contact with anything that has been treated with the pesticide to which the restricted-entry interval applies, including, but not limited to, soil, water, air, or surfaces of plants. This exception does not allow workers to perform any activities that involve contact with treated surfaces even if workers are wearing personal protective equipment.

(2) No such entry is allowed until any inhalation exposure level listed in the pesticide product labeling has been reached or any ventilation criteria required by § 170.105(b)(3) or the pesticide product labeling have been met.

(b) *Exception for short-term activities.* A worker may enter a treated area during a restricted-entry interval for short-term activities, if the agricultural employer ensures that all of the following requirements are met:

(1) No hand labor activity is performed.

(2) The time in treated areas where a restricted-entry interval is in effect does not exceed 1 hour in any 24-hour period for any worker.

(3) No such entry is allowed during the first 4 hours after the application ends.

(4) No such entry is allowed until any inhalation exposure level listed in the pesticide product labeling has been reached or any ventilation criteria required by § 170.105(b)(3) or the pesticide product labeling have been met.

(c) *Exception for an agricultural emergency.* (1) An agricultural emergency means a sudden occurrence or set of circumstances which the agricultural employer could not have anticipated and over which the agricultural employer has no control, and which requires entry into a treated area during a restricted-entry interval, when no alternative practices would prevent or mitigate a substantial economic loss. A substantial economic loss means a loss in profitability greater than that which would be expected based on the experience and fluctuations of crop yields in previous years. Only losses caused by the agricultural emergency specific to the affected site and geographic area are considered. Losses resulting from mismanagement cannot be included when determining whether a loss is substantial.

(2) A worker may enter a treated area where a restricted-entry interval is in effect in an agricultural emergency to perform tasks necessary to mitigate the effects of the agricultural emergency, including hand labor tasks, if the

agricultural employer ensures that all the following criteria are met:

(i) EPA, the state department of agriculture, or the state or tribal agency responsible for pesticide enforcement declares the existence of circumstances that could cause an agricultural emergency on that agricultural establishment.

(ii) The agricultural employer determines that the agricultural establishment is subject to the circumstances that result in an agricultural emergency meeting the criteria of paragraph (c)(1) of this section.

(iii) If the labeling of any pesticide product applied to the treated area requires workers to be notified of the location of treated areas by both posting and oral notification, then the agricultural employer must ensure that no individual worker spends more than 4 hours out of any 24-hour period in treated areas where such a restricted-entry interval is in effect.

(d) *Exceptions for limited contact and irrigation activities.* A worker may enter a treated area during a restricted-entry interval for limited contact or irrigation activities, if the agricultural employer ensures that all of the following requirements are met:

(1) No hand labor activity is performed.

(2) No worker is allowed in the treated area for more than 8 hours in a 24-hour period.

(3) No entry is allowed during the first 4 hours after the application ends.

(4) No such entry is allowed until any inhalation exposure level listed in the pesticide product labeling has been reached or any ventilation criteria required by § 170.105(b)(3) or the pesticide product labeling have been met.

(5) The task is one that, if not performed before the restricted-entry interval expires, would cause substantial economic loss, and there are no alternative tasks that would prevent substantial loss.

(6) With the exception of irrigation tasks, the need for the task could not have been foreseen.

(7) The worker has no contact with pesticide-treated surfaces other than minimal contact with feet, lower legs, hands, and forearms.

(8) The label of the product that was applied does not require both posting and oral notification.

**§ 170.305 Agricultural employer responsibilities to protect workers entering treated areas during a restricted-entry interval.**

If an agricultural employer directs a worker to perform activities in a treated

area where a restricted-entry interval is in effect, all of the following requirements must be met:

(a) Prior to early entry, the agricultural employer must inform each early entry worker with the information in paragraphs (a)(1) through (9) of this section. The information must be provided orally in a manner that the worker can understand.

(1) Date of the entry.

(2) Location of early entry area.

(3) Pesticide(s) applied.

(4) Dates and times that the restricted-entry interval begins and ends.

(5) Which exception in § 170.303 is the basis for the early entry, and a description of tasks that may be performed under the exception.

(6) Whether contact with treated surfaces is permitted under the exception.

(7) Amount of time the worker is allowed to remain in the treated area.

(8) Personal protective equipment required by the pesticide product labeling for early entry.

(9) Location of the pesticide safety information and the location of the decontamination supplies required by §§ 170.11(a)(1) and 170.11(d).

(b) The agricultural employer must maintain on the agricultural establishment for 2 years a record of the information provided to early entry workers under paragraph (a) of this section, along with the printed name, date of birth, and signature of each early entry worker who received the information.

(c) Prior to early entry, the agricultural employer must ensure that each worker either has read the pesticide product labeling or has been informed, in a manner that the worker can understand, of all labeling requirements and statements related to human hazards or precautions, first aid, and user safety.

(d) The agricultural employer must ensure that each worker who enters a treated area during a restricted-entry interval is provided the personal protective equipment specified in the pesticide product labeling for early entry workers. The agricultural employer must ensure that the worker uses the personal protective equipment as intended according to manufacturer's instructions and follows any other requirements on the pesticide product labeling regarding early entry. Personal protective equipment must conform to the standards in § 170.207(b)(1) through (8).

(e) The agricultural employer must maintain the personal protective equipment in accordance with § 170.207(d)(1) through (8).

(f) The agricultural employer must ensure that no worker is allowed or directed to wear personal protective equipment, without implementing measures sufficient to prevent heat-related illness and that each worker is instructed in the prevention, recognition, and first aid treatment of heat-related illness.

(g) The agricultural employer must not allow or direct any worker to wear home or to take home employer-provided personal protective equipment contaminated with pesticides.

(h) During any early entry activity, the agricultural employer must provide decontamination supplies in accordance with § 170.209, except the decontamination supplies must be outside any area being treated with pesticides or subject to a restricted-entry interval, unless the decontamination supplies would otherwise not be reasonably accessible to those workers.

(i) If the pesticide product labeling of the product applied requires protective eyewear, the agricultural employer must provide at least 1 pint of water per worker in portable containers that are immediately available to each worker who is performing early entry activities for emergency eyeflushing.

(j) At the end of any early entry activities the agricultural employer must provide, at the site where the workers remove personal protective equipment, soap, single-use towels and at least 3 gallons of water per worker so that the workers may wash thoroughly.

**§ 170.307 Exceptions to personal protective equipment requirements specified on pesticide product labeling.**

(a) *Body protection.* (1) A chemical-resistant suit may be substituted for coveralls, and any requirement for an additional layer of clothing beneath the coveralls is waived.

(2) A chemical-resistant suit may be substituted for coveralls and a chemical-resistant apron.

(b) *Boots.* If chemical-resistant footwear with sufficient durability and a tread appropriate for wear in rough terrain is not obtainable, then leather boots may be worn in such terrain.

(c) *Gloves.* If chemical-resistant gloves with sufficient durability and suppleness are not obtainable, then during activities with plants with sharp thorns, leather gloves may be worn over chemical-resistant glove liners. However, once leather gloves are worn for this use, thereafter they must be worn only with chemical-resistant liners and they must not be worn for any other use.

(d) *Closed systems.* (1) When pesticides are being mixed or loaded

using a closed system as defined in § 170.5 that meets all of the criteria in paragraph (d)(2) of this section, and the handler employer meets the requirements of paragraph (d)(3) of this section, the following exceptions to labeling-specified personal protective equipment are permitted:

(i) Handlers using a closed system to mix or load pesticides with a signal word of “DANGER” or “WARNING” may substitute a long-sleeved shirt, long pants, shoes and socks, chemical-resistant apron, protective eyewear, and any protective gloves specified on the labeling for handlers for the labeling-specified personal protective equipment.

(ii) Handlers using a closed system to mix or load pesticides other than those specified in paragraph (d)(1)(i) of this section may substitute protective eyewear, long-sleeved shirt, long pants, and shoes and socks for the labeling-specified personal protective equipment.

(2) The exceptions of paragraph (d)(1) of this section apply only where the closed system meets all of the following criteria:

(i) The pesticide must be removed from its original shipping container and transferred through connecting hoses pipes, and/or couplings that are sufficiently tight to prevent exposure of any person to the concentrate, use dilution, or rinse solution.

(ii) All hoses, piping, tanks, and connections used in conjunction with a closed system must be of a type appropriate for the pesticide being used and, the pressure and vacuum of the system.

(iii) All sight gauges must be protected against breakage. Sight gauges must be equipped with valves so the pipes to the sight gauge can be shut off in case of breakage or leakage.

(iv) The closed system must adequately measure the pesticide being used. Measuring devices must be accurately calibrated to the smallest unit in which the material is being weighed or measured.

(v) The movement of a pesticide concentrate beyond a pump by positive pressure must not exceed 25 pounds per square inch (psi) of pressure.

(vi) A probe must not be removed from a container except when the pesticide is used without dilution and the container has been emptied or the container is emptied and the inside, as well as the probe, have been rinsed in accordance with § 170.307(d)(2)(viii).

(vii) Shut-off devices must be installed on the exit end of all hoses and at all disconnect points to prevent the pesticide from leaking when the transfer

is stopped and the hose is removed or disconnected. If the hose carried pesticide concentrate and has not been rinsed in accordance with § 170.307(d)(2)(viii), a dry break coupler that will minimize pesticide loss to not more than two milliliters per disconnect must be installed at the disconnect point. If the hose carried a pesticide use dilution or rinse solution, a reversing action pump or a similar system that will empty the hose may be used as an alternative to a shutoff device.

(viii) When the pesticide is to be diluted for use, the closed system must provide for adequate rinsing of containers that have held less than 60 gallons of a liquid pesticide. Rinsing must be done with a medium, such as water, that contains no pesticide. The system must be capable of spray-rinsing the inner surfaces of the container and the rinse solution must go into the pesticide mix tank or applicator vehicle via the closed system. The system must be capable of rinsing the probe, if used, and all hoses, measuring devices, etc. A minimum of 15 psi of pressure must be used for rinsing. The rinsing must be continued until minimum of 10 gallons or one-half of the container volume, whichever is less, has been used. The rinse solution must be removed from the pesticide container concurrently with introduction of the rinse medium. Pesticide containers must be protected against excessive pressure during the container rinse operation. The maximum container pressure must not exceed five psi.

(ix) Each commercially produced closed system or component to be used with a closed system must be sold with complete instructions consisting of a functional operating manual and a decal(s) covering the basic operation. The decal(s) must be placed in a prominent location on the system. The system must include specific directions for cleaning and maintenance of the system on a scheduled basis and information on any restrictions or limitations relating to the system, such as pesticides that are incompatible with materials used in the construction of the system, types (or sizes) of containers or closures that cannot be handled by the system, any limits on ability to correct or over measurement of a pesticide, or special procedures or limitations on the ability of the system to deal with partial containers

(3) The exceptions of paragraph (d)(1) of this section apply only where the handler employer has satisfied the requirements of § 170.13 and all of the following conditions:

(i) The written operating instructions for the closed system must be available

at the mixing or loading site and must be made available to any handlers who use the system and for inspection by authorized officials.

(ii) The handler employer must assure that any handler operating the closed system is trained in its use and operates the closed system in accordance with the manufacturer's written operating instructions.

(iii) The closed system must be cleaned and maintained as specified in the manufacturer's written operating instructions and as needed to make sure the system functions properly. If the system is not a commercially produced system it must be maintained on a regular basis.

(iv) A record of the cleaning and maintenance must be maintained on the establishment for 2 years.

(v) All personal protective equipment specified in the pesticide product labeling is immediately available to the handler for use in an emergency.

(vi) The handler employer ensures that protective eyewear is worn when using closed systems operating under pressure.

(e) *Enclosed cabs.* (1) If a handler applies a pesticide from inside an enclosed cab, and if the conditions listed in paragraph (e)(2) of this section are met, handlers may substitute a long-sleeved shirt, long pants, shoes, and socks for the labeling-specified personal protective equipment.

(2) All of the applicator personal protective equipment required by the pesticide product labeling must be immediately available and stored in an enclosed container, such as a plastic bag, to prevent contamination. Handlers must wear chemical-resistant gloves in addition to any personal protective equipment required by the pesticide product labeling for applicators, if they exit the cab within a treated area during application or when a restricted-entry interval is in effect. Once personal protective equipment is worn in a treated area, it must be removed before reentering the cab.

(f) *Aerial applications*—(1) *Use of gloves.* Chemical-resistant gloves must be worn when entering or leaving an aircraft that may be contaminated by pesticide residues. In the cockpit, the gloves must be kept in an enclosed container, such as a plastic bag, to prevent contamination of the inside of the cockpit.

(2) *Open cockpit.* Handlers occupying an open cockpit must use the personal protective equipment specified in the pesticide product labeling for use during application, except that chemical-resistant footwear need not be worn. A helmet may be substituted for

chemical-resistant headgear. A helmet with a face shield lowered to cover the face may be substituted for protective eyewear.

(3) *Enclosed cockpit.* Handlers occupying an enclosed cockpit may substitute a long-sleeved shirt, long pants, shoes, and socks for labeling-specified personal protective equipment.

(g) *Crop advisors.* Crop advisors entering treated areas while a restricted-entry interval is in effect may wear the personal protective equipment specified on the pesticide labeling for early entry activities instead of the personal protective equipment specified on the pesticide labeling for handler activities, provided that all of the following conditions are met:

(1) The application has been complete for at least 4 hours.

(2) No such entry is allowed until any inhalation exposure level listed in the pesticide product labeling has been reached or any ventilation criteria required by § 170.105(b)(3) or the pesticide product labeling have been met.

#### **§ 170.309 Exception to training requirements for workers.**

An agricultural employer may allow or direct a worker to perform tasks in a treated area on an agricultural establishment for up to two days without training the worker in accordance with § 170.101 provided the agricultural employer ensures all of the conditions of this section are met.

(a) The worker is trained in accordance with § 170.101 before the third day of working in a treated area on the establishment.

(b) The worker will not enter a treated area on the agricultural establishment while any restricted-entry interval is in effect.

(c) The worker is provided with a copy of a pesticide information sheet that contains all of the points and information listed in § 170.309(e)(1) through (15) prior to conducting any tasks in a treated area, and that same information is communicated to the worker orally in a manner the worker understands.

(d) The agricultural employer must maintain on the agricultural establishment for a period of 2 years a record of the information provided to the worker under § 170.309(c), along with the printed name of the worker, date of birth, the date the information was provided, the employer's name, and employer's phone number or phone number of the establishment, and signature of the worker affirming that he or she has been provided a copy of the

information sheet required by § 170.309(c), has had the information communicated to him or her orally in a manner the worker understands, and has understood the information.

(e) Pesticide information sheets required by § 170.309(c) must convey the following points and information:

(1) Agricultural employers are required to provide workers with information and protections designed to reduce work-related pesticide exposures and illnesses, including the following:

(i) Employers are required to provide pesticide safety information to workers before being asked to work in pesticide treated areas if they have not received full pesticide safety training.

(ii) Employers are required to provide the full pesticide safety training to workers before their third day of work in pesticide treated areas.

(iii) Employers are required to provide pesticide safety information, pesticide hazard information for products used on the establishment, decontamination supplies, emergency medical assistance, and notification to workers of restrictions during applications and on entering pesticide treated areas.

(2) Agricultural employers must inform workers how to recognize and understand the meaning of the posted warning signs used for notifying workers of restrictions on entering pesticide treated areas on the establishment. Workers must follow employer directions and/or signs about keeping out of entry restricted or pesticide treated areas.

(3) Agricultural employers must not allow or direct any worker who has not received full pesticide safety training and additional early entry worker training to work in any area that is currently under a restricted-entry interval. Employers must comply with minimum age restrictions and notification requirements in order to direct workers to perform early-entry activities.

(4) Agricultural employers must not allow or direct any worker to mix, load, or apply pesticides or assist in the application of pesticides unless the worker has been trained as a handler.

(5) Agricultural employers are prohibited from intimidating, threatening, coercing, or discriminating against any worker for the purposes of interfering with any attempt to comply with the requirements of this part, or because the worker has made a complaint, testified, assisted, or participated in any manner in an investigation, proceeding, or hearing pursuant to this part.

(6) There are potential sources of pesticide exposure on agricultural

establishments and pesticides and/or pesticide residues may be encountered during work activities. Pesticide residues may be on or in plants, soil, irrigation water, tractors, application equipment, or used personal protective equipment. Pesticides can also drift through air from nearby applications. Maintain a safe distance from nearby pesticide applications and leave the area immediately if pesticide sprays are contacting you.

(7) Pesticides can cause illness or injury if they enter your body. Pesticides can enter the body by getting them on your skin or in your eyes, by swallowing them, or by breathing in their vapors.

(8) There are potential hazards from toxicity and exposure that pesticides present to workers, including acute and chronic illnesses and effects, delayed effects, and sensitization.

(9) There are potential hazards to children and pregnant women from pesticide exposure.

(10) When working near pesticides or in pesticide treated areas wear work clothing that protects the body from pesticide residues and always wash hands before eating, drinking, using chewing gum or tobacco, or using the toilet.

(11) Wash or shower with soap and water, shampoo hair, and change into clean clothes as soon as possible after working near or in pesticide treated areas.

(12) There are potential hazards from the pesticide residues that may be on work clothing. Wash work clothes before wearing them again, and always wash work clothes separately from other clothes.

(13) Pesticides may cause skin rashes or hurt your eyes, nose or throat. Pesticides can make you feel sick in different ways, such as headache or

dizziness, muscles pain or cramps, nausea or vomiting, sweating, drooling, fatigue, or trouble breathing.

(14) Wash immediately in the nearest clean water if pesticides are spilled or sprayed on the body. Shower, shampoo hair, and change into clean clothes as soon as possible. If a pesticide gets in your eyes, hold them open and rinse with a gentle stream of cool water. Rinse eyes for 15 minutes.

(15) If you or someone you work with gets sick while working, tell your employer right away. If you suspect you have been injured or made ill from pesticides, get medical help as soon as possible. If you have been injured from pesticides while working, your employer must provide emergency transportation from the establishment to a nearby medical facility and provide information about the pesticide or pesticides that may have made you sick.

[FR Doc. 2014-04761 Filed 3-18-14; 8:45 am]

**BILLING CODE 6560-50-P**