BRIAN P. JENNY, Acting General Counsel.

ENVIRONMENTAL PROTECTION AGENCY

Consolidated DDT Hearings

Opinion and Order of the Administrator

Published herewith is my opinion and order issued June 14, 1972, concerning the registrations of products containing the insecticide DDT.

Done this 30th day of June 1972.

WILLIAM D. RUCKELSHAUS,
Administrator.

Stevens Industries, Inc. v. Environmental Protection Agency

OPINION OF THE ADMINISTRATOR


This hearing represents the culmination of approximately 3 years of intensive administrative inquiry into the uses of DDT. Part I sets forth the background of those proceedings and Part II contains a discussion of the evidence and law and my factual conclusions. I am persuaded for reasons set forth in Part III of this opinion that the long-range risks of continued use of DDT for cotton and most other crops is unacceptable and outweighs any benefits. Cancellation for all uses of DDT for crop production is now required by a cease and desist order.

DDT not canceled in 1963 were canceled.

FB Notice 71-1. And on Mar. 18, 1971, notices of cancellation were issued for all registered uses of TDE, a DDT metabolite. FB Notice 71-8.

Under FIFRA a registrant is entitled to either a public hearing or a scientific advisory committee or both to review findings. Pending completion of that review, a registrant is allowed to continue shipment and sale of his product.

Unless specified, discussion of DDT in this opinion applies to TDE. DDT has three major breakdown products: TDE, DDE, and DDD. Separate registrations exist for TDE (DDT).

There has been some controversy over DDT's status. The agency has virtually stopped registration of DDT and the insecticide does not have an EPA registration. For the above reason, it appears that DDT is now a scheduled chemical.

The groups are: National Agricultural Chemicals Association; National Audubon Society; The Sierra Club; and West Michigan Environmental Action Council. As already noted, the Secretary of Agriculture, in addition to being a party-registrant by virtue of registrations held by his Plant Regulation Division, has appeared as an intervener.

The following uses are involved: For cotton; for military use on clothing; for pepper and pimentos; for fresh market corn; for peanuts; for cabbage, collard greens, and broccoli; for tomatoes, for lettuce; for potatoes, for sweet potatoes; for tomatoes; for fresh market corn; for peanuts; for cabbage, collard greens, and broccoli; for tomatoes, for lettuce; for potatoes, for sweet potatoes; for tomatoes; and for fresh market corn.

DDT not canceled in 1963 were canceled.

FB Notice 71-1. And on Mar. 18, 1971, notices of cancellation were issued for all registered uses of TDE, a DDT metabolite. FB Notice 71-8.

Under FIFRA a registrant is entitled to either a public hearing or a scientific advisory committee or both to review findings. Pending completion of that review, a registrant is allowed to continue shipment and sale of his product.

Unless specified, discussion of DDT in this opinion applies to TDE. DDT has three major breakdown products: TDE, DDE, and DDD. Separate registrations exist for TDE (DDT).

There has been some controversy over DDT's status. The agency has virtually stopped registration of DDT and the insecticide does not have an EPA registration. For the above reason, it appears that DDT is now a scheduled chemical.

The groups are: National Agricultural Chemicals Association; National Audubon Society; The Sierra Club; and West Michigan Environmental Action Council. As already noted, the Secretary of Agriculture, in addition to being a party-registrant by virtue of registrations held by his Plant Regulation Division, has appeared as an intervener.

The following uses are involved: For cotton; for military use on clothing; for pepper and pimentos; for fresh market corn; for peanuts; for cabbage, collard greens, and broccoli; for tomatoes, for lettuce; for potatoes, for sweet potatoes; for tomatoes, for fresh market corn; for peanuts; for cabbage, collard greens, and broccoli; for tomatoes, for lettuce; for potatoes, for sweet potatoes; for tomatoes; for fresh market corn.
The Pesticides Office and Environmental Defense Fund (EDF) filed exceptions to the Examiners report, challenging his application of the so-called "risk and benefits" standard of FIFRA. On May 2, 1972, the Judicial Officer ordered the record closed and set a trial on the administrative appeal. The report, at my direction, is attached below. The Examiner has found, as a matter of fact, to prove that DDT is a hazard to aquatic and terrestrial wildlife and that the benefits accruing from DDT usage are marginal, given the availability of alternative insemi-cides and pest management programs, and also the fact that crops produced with DDT are in ample supply. The testimony and exhibits include numerous reports of expert scientists who have described observed effects of DDT in the environment and the laboratory.

Group Petitioners and the U.S. Department of Agriculture (USDA) seek to discredit the Agency's case (FEDERAL REGISTER, Vol. 37, No. 130, Mar. 29, 1972), to which the record of the case of DDT has compiled throughout the years, and point to the negative findings of epidemiological and human feeding studies carried out over the years on industrial workers and volunteers exposed to concentrated levels of DDT far in excess to which any individual is exposed. Proponents of continued registration have also introduced expert testimony to the effect that DDT's chronic toxicity to man or animals has not been established by adequate proof. The registrants have also stated that laboratory data, as to effects of exaggerated doses of DDT, can provide a meaningful basis for extrapolating effects on man or the environment. In the alternative, Group Petitioners and USDA have attempted to prove that DDT is effective and that its use is more desirable than the organophosphates which are more acutely toxic and in the case of fish and wildlife inhibit reproduction or growth, and in the case of birds, that once stored or consumed, DDT may be toxic to both animals and humans. The testimony and evidence bear on the assumption that they are unaffected by overall levels of use, and do not address the specific case of the relationship between risk and overall use.

III. - Analysis of evidence - 1. Risks - Health effects and environmental properties. There is no dispute on this record that DDT, when properly used, is a non-acute chemical that persists in soil and the aquasphere: (2) that once un­leashed, given the availability of alternative insemi-cides and pest management programs, the benefits accruing from DDT usage are marginal, given the availability of alternative insemi-cides and pest management programs, and also the fact that crops produced with DDT are in ample supply. The testimony and exhibits include numerous reports of expert scientists who have described observed effects of DDT in the environment and the laboratory.

Group Petitioners and the U.S. Department of Agriculture (USDA) seek to discredit the Agency's case (FEDERAL REGISTER, Vol. 37, No. 130, Mar. 29, 1972), to which the record of the case of DDT has compiled throughout the years, and point to the negative findings of epidemiological and human feeding studies carried out over the years on industrial workers and volunteers exposed to concentrated levels of DDT far in excess to which any individual is exposed. Proponents of continued registration have also introduced expert testimony to the effect that DDT's chronic toxicity to man or animals has not been established by adequate proof. The registrants have also stated that laboratory data, as to effects of exaggerated doses of DDT, can provide a meaningful basis for extrapolating effects on man or the environment. In the alternative, Group Petitioners and USDA have attempted to prove that DDT is effective and that its use is more desirable than the organophosphates which are more acutely toxic and in the case of fish and wildlife inhibit reproduction or growth, and in the case of birds, that once stored or consumed, DDT may be toxic to both animals and humans. The testimony and evidence bear on the assumption that they are unaffected by overall levels of use, and do not address the specific case of the relationship between risk and overall use.

III. - Analysis of evidence - 1. Risks - Health effects and environmental properties. There is no dispute on this record that DDT, when properly used, is a non-acute chemical that persists in soil and the aquasphere: (2) that once unleashed, given the availability of alternative insemi-cides and pest management programs, the benefits accruing from DDT usage are marginal, given the availability of alternative insemi-cides and pest management programs, and also the fact that crops produced with DDT are in ample supply. The testimony and exhibits include numerous reports of expert scientists who have described observed effects of DDT in the environment and the laboratory.

Group Petitioners and the U.S. Department of Agriculture (USDA) seek to discredit the Agency's case (FEDERAL REGISTER, Vol. 37, No. 130, Mar. 29, 1972), to which the record of the case of DDT has compiled throughout the years, and point to the negative findings of epidemiological and human feeding studies carried out over the years on industrial workers and volunteers exposed to concentrated levels of DDT far in excess to which any individual is exposed. Proponents of continued registration have also introduced expert testimony to the effect that DDT's chronic toxicity to man or animals has not been established by adequate proof. The registrants have also stated that laboratory data, as to effects of exaggerated doses of DDT, can provide a meaningful basis for extrapolating effects on man or the environment. In the alternative, Group Petitioners and USDA have attempted to prove that DDT is effective and that its use is more desirable than the organophosphates which are more acutely toxic and in the case of fish and wildlife inhibit reproduction or growth, and in the case of birds, that once stored or consumed, DDT may be toxic to both animals and humans. The testimony and evidence bear on the assumption that they are unaffected by overall levels of use, and do not address the specific case of the relationship between risk and overall use.
Group Petitioners argue that the testimony of the experts, particularly in regard to the long-term effects of DDT on man and on the basis now available, I cannot be shown to support the conclusion that DDT causes damage to wildlife species. Group Petitioners also take refuge under a number of laboratory experiments. The petition-registrants' assertion that there is no evidence of declining aquatic or avian populations, even if actually true, is not in contradiction to the evidence. It does not refute the basic proposition that DDT causes damage to wildlife species. Group Petitioners argue that only one toxic substance in an polluted environment, and thus, whatever its laboratory effects, it is not possible to weigh damage to natural systems from the agent of damage in nature, does not reded DDT, but only underscores the magnitude of effort that will be necessary for cleaning up the environment. The present state of knowledge is no basis to resolve the question of the long-range effects of exposure to a low dose of a chemical. It may take many years before adverse effects would take place. Diseases like cancer have an extended latency period. Mutagenic effects will be apparent only in future generations. Lab tests, Dr. Green, and the evidence presented by the Agency's Pathologists Office demonstrates the adverse impact of DDT on fish and wildlife. Several witnesses testified to the fact that DDT is a potent threat to man and birds, reporting lethal or subacute effects on aquatic and avian life exposed in DDT-treated areas. Laboratory evidence is not proof of the acute or subacute effects and chronic effects of DDT on avian animal species and suggest that DDT impairs their reproduction.

Group Petitioners also take refuge under a broad canopy of data—human feeding studies and epidemiological studies—and support it with the increasingly familiar argument that exposure to any substance in sufficient quantities may cause cancer. None of the feeding studies carried out with DDT have been designed adequately to detect carcinogenicity, and given the latency period of cancer, the entire undertaking may have to be carried out for a much longer period. Statistical population samples for epidemiological studies are subject to sampling error and given the latency period for cancer and the long-term exposure of the general population, results from one group exposed to low doses and higher doses of DDT, adequate control may not be established. This "everything is cancerous argument" fails because it ignores the fact that not all chemicals fed to animals in equimolar or equally toxic doses have produced the same tumorigenic results.

b. Environmental effects. The case against DDT is a long-range hazard to man's health. The evidence presented by the Agency's Pathologists Office and that presented by the National Cancer Institute fed 120 compounds to two strains of mice. DDT was one of 11 compounds to produce an elevated incidence of diseases like cancer have an extended latency period. However, does not bear on the long-term effects of DDT, nor did the Surgeon General express himself on it. In general terms the Surgeon General stated: "We have before adverse effects would take place. Diseases like cancer have an extended latency period. Mutagenic effects will be apparent only in future generations. Lab tests, Dr. Green, and the evidence presented by the Agency's Pathologists Office demonstrates the adverse impact of DDT on fish and wildlife. Several witnesses testified to the fact that DDT is a potent threat to man and birds, reporting lethal or subacute effects on aquatic and avian life exposed in DDT-treated areas. Laboratory evidence is not proof of the acute or subacute effects and chronic effects of DDT on avian animal species and suggest that DDT impairs their reproduction.

Group Petitioners also take refuge under a broad canopy of data—human feeding studies and epidemiological studies—and support it with the increasingly familiar argument that exposure to any substance in sufficient quantities may cause cancer. None of the feeding studies carried out with DDT have been designed adequately to detect carcinogenicity, and given the latency period of cancer, the entire undertaking may have to be carried out for a much longer period. Statistical population samples for epidemiological studies are subject to sampling error and given the latency period for cancer and the long-term exposure of the general population, results from one group exposed to low doses and higher doses of DDT, adequate control may not be established. This "everything is cancerous argument" fails because it ignores the fact that not all chemicals fed to animals in equimolar or equally toxic doses have produced the same tumorigenic results.

b. Environmental effects. The case against DDT is a long-range hazard to man's health. The evidence presented by the Agency's Pathologists Office and that presented by the National Cancer Institute fed 120 compounds to two strains of mice. DDT was one of 11 compounds to produce an elevated incidence of diseases like cancer have an extended latency period. However, does not bear on the long-term effects of DDT, nor did the Surgeon General express himself on it. In general terms the Surgeon General stated: "We have before adverse effects would take place. Diseases like cancer have an extended latency period. Mutagenic effects will be apparent only in future generations. Lab tests, Dr. Green, and the evidence presented by the Agency's Pathologists Office demonstrates the adverse impact of DDT on fish and wildlife. Several witnesses testified to the fact that DDT is a potent threat to man and birds, reporting lethal or subacute effects on aquatic and avian life exposed in DDT-treated areas. Laboratory evidence is not proof of the acute or subacute effects and chronic effects of DDT on avian animal species and suggest that DDT impairs their reproduction.

Group Petitioners also take refuge under a broad canopy of data—human feeding studies and epidemiological studies—and support it with the increasingly familiar argument that exposure to any substance in sufficient quantities may cause cancer. None of the feeding studies carried out with DDT have been designed adequately to detect carcinogenicity, and given the latency period of cancer, the entire undertaking may have to be carried out for a much longer period. Statistical population samples for epidemiological studies are subject to sampling error and given the latency period for cancer and the long-term exposure of the general population, results from one group exposed to low doses and higher doses of DDT, adequate control may not be established. This "everything is cancerous argument" fails because it ignores the fact that not all chemicals fed to animals in equimolar or equally toxic doses have produced the same tumorigenic results.

b. Environmental effects. The case against DDT is a long-range hazard to man's health. The evidence presented by the Agency's Pathologists Office and that presented by the National Cancer Institute fed 120 compounds to two strains of mice. DDT was one of 11 compounds to produce an elevated incidence of diseases like cancer have an extended latency period. However, does not bear on the long-term effects of DDT, nor did the Surgeon General express himself on it. In general terms the Surgeon General stated: "We have before adverse effects would take place. Diseases like cancer have an extended latency period. Mutagenic effects will be apparent only in future generations. Lab tests, Dr. Green, and the evidence presented by the Agency's Pathologists Office demonstrates the adverse impact of DDT on fish and wildlife. Several witnesses testified to the fact that DDT is a potent threat to man and birds, reporting lethal or subacute effects on aquatic and avian life exposed in DDT-treated areas. Laboratory evidence is not proof of the acute or subacute effects and chronic effects of DDT on avian animal species and suggest that DDT impairs their reproduction.

Group Petitioners also take refuge under a broad canopy of data—human feeding studies and epidemiological studies—and support it with the increasingly familiar argument that exposure to any substance in sufficient quantities may cause cancer. None of the feeding studies carried out with DDT have been designed adequately to detect carcinogenicity, and given the latency period of cancer, the entire undertaking may have to be carried out for a much longer period. Statistical population samples for epidemiological studies are subject to sampling error and given the latency period for cancer and the long-term exposure of the general population, results from one group exposed to low doses and higher doses of DDT, adequate control may not be established. This "everything is cancerous argument" fails because it ignores the fact that not all chemicals fed to animals in equimolar or equally toxic doses have produced the same tumorigenic results.
also testify in the record to the effect that method paralyzed these pests more quickly than the DDT-toxaphene formula. Nor are the testimony and exhibits that show cotton infections develop more rapidly than those for noncrop uses. Alternatives also demonstrate that organophosphates are less acutely toxic to aquatic life, although different compounds have different toxicities. The effect of organophosphates on non-target terrestrial life can, unlike the effects of DDT, also be minimized by prudent use. Application of nesting areas for rare or extinct birds can be avoided.

2. Other crop and produce uses. The testimony of registrants and the registered alternatives, primarily organophosphates, exist for all other crops and ornamental plants. These uses exist for such crops as cotton to control bollworms on sweet potatoes to control weevils, on heavy corn borers infestations of sweet potato, and perhaps onions. The effect of organophosphates in treated areas, and consequently toxicities. The effect of organophosphates is not surprising. The Public Health Service testified that there are no longer the chemical of choice for the DDT target vector. As for mice, warfarin is used effectively, and fumigation and nonchemical means are available for control. Furthermore, the testimony of the agricultural operators that use DDT in this country for 2 years for moths targeting and pest that was associated with cotton have been difficult to determine to what extent applications are for health purposes or for nuisance prevention.

With respect to all of these uses, both for the burden of return to the farm owner of the use. Application of nesting areas for rare or extinct birds can be avoided.

4. Noncrop uses. In addition to the registrations for use on crops and in nurseries, several registrations for noncrop use are also in effect. Admissions to the insidious health and safety is the burden of return to the farm owner of the use. Application of nesting areas for rare or extinct birds can be avoided.

C. Weight to be accorded the examiner's opinion. In reaching the factual conclusions presented here, it is important to be mindful of Group Petitioner's argument, stated in their briefs and at oral argument, that the Hearing Examiner's finding, to the extent, is based upon the testimony of his view to resolve contradictions in testimony based on evidence.

Nowhere does the record fail to show that his conclusions were based on credibility choices. Whatever extra weight, then, that may be given to testimony, in the light of the Hearings' evidence to put those in the case, the basic scientific and. The burden of proof is on the proponent of cancellation, burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

4. The only evidence as to the amount of DDT used for these purposes was given by C. Fowler, who said the total used by the military for bat and mite control is approximately 100,000 pounds. The burden of proof is on the proponent of cancellation, burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

2. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

5. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

6. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

7. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

8. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

9. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

10. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

11. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

12. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

13. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

14. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

15. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

16. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

17. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

18. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

19. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

20. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

21. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

22. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

23. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

24. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

25. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

26. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

27. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

28. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

29. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

30. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

31. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

32. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

33. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

34. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

35. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

36. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

37. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

38. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

39. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

40. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

41. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

42. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

43. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

44. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

45. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.

46. The burden of proof is on the party to establish the existence of a chemical in any amount, not to establish the existence of a chemical in any amount.
gender the risks from widespread use of the chemical. Under no circumstances, therefore, should we show the nondesirability (or risks) of the alternative if they disagree with the staff judgment of this Agency.

Application of risk-benefit to crop uses of DDT. The Agency and EDP have established that DDT is toxic to nontarget insects and animals; persistent, mobile, and transfe-

rerable and that it builds up in the food chain. No label directions for use can completely prevent these hazards. In short, they have established at the very least the risk of unknown. That risk is compounded when a field is treated, as is the case with DDT, man and animals tend to accumulate and store the chemical. These facts alone constitute risks that are unjustified where apparently safer alternatives exist to achieve the same benefit. Where, however, there is a demonstrated laboratory relationship between the chemical and health or quarantine programs fall into a

third layer. And once the record shows the nondesirability (or risks) of the alternative, they cannot avoid the risk of his own negligence by exposing third parties and the environment to a long-term hazard.

As to banning all crop uses of DDT are hereby canceled except for application to onions for control of cutworm, weevils on stored potatoes, and peppers in the field. The Agency staff established, as well, the existence of acceptable substitutes for all crop uses of DDT except on onions and sweet potatoes in storage and green peppers. Registrants attempted but failed to surmount the evidence of established risks and the existence of substitutes by arguing that the buildup of DDT in the environment and its misuse resulted from past uses and misuses. There is, however, no persuasive evidence of record to show that DDT can be used safely for all uses in question, given the method of application, will not result in continuing dispersal and buildup in the environment and thus present a continuing threat to the environment resulting from past use. The Department of Agriculture has, for its part, emphasized DDT's low acute toxicity in comparison to that of alternative chemicals and thus tried to make the risk and benefit considerations dependent on the continued use of DDT. While the acute toxicity of methyl parathion must, in the short run, be taken into account, it does not justify continued use of DDT on a long-term basis. Where a chemical can be safely used if label directions are followed, a producer cannot avoid the risk of his own negligence by exposing third parties and the environment to a long-term hazard.

To ban and, therefore, cancel the use of DDT on an application-by-application basis for health and quarantine purposes, the benefits will be maximized in the sense that no real harm remains.

V. I turn now to the disposition of these docket in light of the foregoing principles. At the outset it should be noted that some judicial authorities have emphasized the Agency's duty to use its "flexibility, in both final decisions and suspension orders, to differentiate between uses of the product." (EDF v. EPA (opinion of Judge Leventhal, supra, at 20), and reminded us that "creative adaptability is the keynote of a workable regulatory process.")

C. Application of risk-benefit to noncrop uses. There remains the question of the desirability of the use of DDT on and around homes and public and private property and the proper timing of cancellation of other uses in light of the short-run danger of switching to the use of organophosphates without providing training.

G. Given the alternatives for mothproofing and control of bees and most witnesses agreed that the use of DDT by other nations in their health control programs. As we said in our DDT statement of March 1971, "this Agency will not prescribe to regulate the use of DDT in other countries."

VII. Indeed, the PIERA does not apply to exports. Section 7 (U.C.C., section 151 (1965)).

While it may also exist for use in public health quarantine programs and, in most instances, DDT is no longer the yeoman chemical, I believe that it would be unwisdom appropriate to consider the same chemical for the choice of one or two chemicals. Like a physician, the public official must have an

ample arsenal for the combat of disease and infestation. I cannot, however, be indifferent to the fact that the record suggests that "health and quarantine" uses have, in the past, apparently included misuses. Nor can I be complacent about unsupervised use for these purposes by the individual homeowner. I am, accordingly, required to label which will restrict indiscriminate use of DDT for a wide variety of purposes under this Hammond decision. In the order accompanying this opinion, and is designed to restrict shipment of DDT only to U.S. Government officials and State and Health departments who will be irrevocably as to the most effective means for control and mindful of the risks of using DDT. To test on an application-by-application basis for health and quarantine purposes, the benefits will be maximized in the sense that no real harm remains.

The Department of Agriculture has, for its part, emphasized DDT's low acute toxicity in comparison to that of alternative chemicals and thus tried to make the risk and benefit considerations dependent on the continued use of DDT. While the acute toxicity of methyl parathion must, in the short run, be taken into account, it does not justify continued use of DDT on a long-term basis. Where a chemical can be safely used if label directions are followed, a producer cannot avoid the risk of his own negligence by exposing third parties and the environment to a long-term hazard.

The pre-ent evidence concerning use of DDT to control cutworm infestations in the Del Marva Peninsula. The record shows that about 10,500 pounds of DDT are used regularly as a ground application for prophylactic pur-

ples, Selvins, githion, and phosphamidon can, however, be used at less than 30 percent infestation. Del Marva, presents less than 5 percent the native sweet peppers and other crops can be profitably produced. The Agency staff has conceded in its April 15 brief in support of its decision that the benefits of registration are to the use of DDT "comes closest—of all the uses in these certain conditions." (Brief, at 93.)

The use of DDT in Topoade, a prescription drug, is regulated by both the Food and Drug Administration and this Agency. The alternative to Zina is use of DDT to control cutworm is less clear cut. Apparently cutworm infestations in the North are sporadic and localizable. While it would appear that other chemicals could be used to control cutworm infestations on

The use of DDT in Topoade, a prescription drug, is regulated by both the Food and Drug Administration and this Agency. The alternative to Zina is use of DDT to control cutworm is less clear cut. Apparently cutworm infestations in the North are sporadic and localizable. While it would appear that other chemicals could be used to control cutworm infestations on
It is recognized as a policy of common law
and also of Federal environmental legisla
tion to afford affected producers a transi
tional period for implementing new re
quirements.

36 Not all of the possible substitutes for
DDT are equally safe, such as fluc
donal, chlordane, aldrin, dieldrin,
chlororochlorocarbons, malathion,
and, if misused, is dangerous to applicators.

37 As in a recognized policy of common
law and also of Federal environmental legisla
tion to afford affected producers a transi
tional period for implementing new re
quirements.

38 Not all of the possible substitutes for
DDT are equally effective, such as fluc
donal, chlordane, aldrin, dieldrin,
chlororochlorocarbons, malathion,
and, if misused, is dangerous to applicators.

39 While not all of the possible substitutes for
DDT are equally effective, such as fluc
donal, chlordane, aldrin, dieldrin,
chlororochlorocarbons, malathion,
and, if misused, is dangerous to applicators.
B. Ultimate finding:

DDT presents a carcinogenic risk.

IV. BENEFITS

A. Basic finding:

1. DDT is useful for the control of certain cotton insect pests.
2. Cotton pests are becoming resistant to DDT.
3. Methyl parathion and other organophosphate chemicals are effective for the control of cotton pests.

B. Ultimate finding:

DDT is considered useful as a moth-proofing agent.

C. Responsible scientists believe tumor induction in mice is a valid warning of possible carcinogenic properties.

D. Responsible scientists believe tumor induction in mice is a valid warning of possible carcinogenic properties.

E. There is no adequate human epidemiological data on the carcinogenicity of DDT, nor is it likely that it can be obtained.

F. Not all chemicals show the same tumor-inducing properties in laboratory tests on animals.

NOTICES

13375

2. An opportunity to train users will minimize the accidents and keep down the number of accidents.

VII. GENERAL FINDINGS

A. No directions for use of DDT, even if followed, can over the long run completely eliminate DDT's injury to man or other vertebrate animals.
B. No warning or caution for use of DDT, even if followed, can over the long run completely prevent injuries in man and other vertebrate animals.
C. The present total volume of use of DDT in this country for all purposes is an unacceptable risk to man and his environment.
D. The use of DDT in controlled situations in limited amounts may present less risk than usage in greater amounts, but still contaminates the environment.
E. The public health program and quarantine uses of DDT by officials, when deemed necessary, can be judged on an application-by-application basis by professionals.
F. A particular official use, in an isolated instance, may be important.

CONCLUSIONS OF LAW

1. DDT formulations when labeled with directions for use for the protection of these crops named in finding (1) G and for use on bats, mice, and fabrics are "misbranded," within the meaning of section 2(a)(2) (e), (d), and (e) of FIFRA, 7 U.S.C. section 135.
2. DDT when labeled with directions for use by and distribution to only U.S. Public Health Service officials for control of vector diseases, for use by and distribution to the Public Health Service, USDA, and military for quarantine use, in process of drugs to be dispensed only on authorization by a certified medical doctor along with the caution printed in bold type "Use for any purpose not specified or not in accordance with directions and use by unauthorized persons is disapproved by the Federal Government: This substance is harmful to the environment," is not "misbranded."

ANNOUNCER'S ORDER REGARDING DDT

Order. Before the Environmental Protection Agency, in regard; Stevens Industries, Inc., et al. (Consolidated DDT Hearing). I.P. & R. Dobbs No. 53 et al.

In accordance with the foregoing opinion, said petitioners, or any of them, or any use of DDT on cotton, beans (snap, lima, and dry), peanuts, cabbage, cauliflower, broccoli, cucumbers, tomatoes, fresh market corn, egg plants, in commercial greenhouses, for moth-proofing and control of bats and rodents has been canceled as of December 31, 1972.

Use of DDT for control of weeds on stored sweet potatoes, green poppies in the D. Matta Peninsulas and cacao on palms are canceled unless within 30 days users or registrants move to supplement the record in accordance with Part V of my opinion of today. In such event the order shall be stayed, pending the completion of the record.

B. Before the Environmental Protection Agency, in regard; Stevens Industries, Inc., et al. (Consolidated DDT Hearing).

In accordance with the foregoing opinion, said petitioners, or any of them, or any use of DDT on cotton, beans (snap, lima, and dry), peanuts, cabbage, cauliflower, broccoli, cucumbers, tomatoes, fresh market corn, egg plants, in commercial greenhouses, for moth-proofing and control of bats and rodents has been canceled as of December 31, 1972.

Use of DDT for control of weeds on stored sweet potatoes, green poppies in the D. Matta Peninsulas and cacao on palms are canceled unless within 30 days users or registrants move to supplement the record in accordance with Part V of my opinion of today. In such event the order shall be stayed, pending the completion of the record.
merce or within the District of Columbia or any American territory after December 31, 1972, unless its label bears in a prominent fashion in bold type and capital letters, in a manner satisfactory to the Pesticides Regulation Division, the following language:

(1) For use by and distribution to only U.S. Public Health Service Officers or by or on approval by the U.S. Public Health Service to other Health Service Officers for control of vector diseases;

(2) For use by and distribution to the USDA or Military for Health Quarantine Use;

(3) For use in the formulation for prescription drugs for controlling body lice; (4) or in drug; for use in controlling body lice—to be dispensed only by physicians.

Use by or distribution to unauthorized users or use for a purpose not specified hereon or not in accordance with directions is disapproved by the Federal Government.

This substance is harmful to the environment.

The Pesticides Regulation Division may require such other language as it considers appropriate.

This label may be adjusted to reflect the terms and conditions for shipment for use on green peppers in Del Marva, cutworms on potatoes, etc.

Hearings

On January 17, 1972, HNG Oil Co. is engaged in the sales of natural gas in interstate commerce for resale for ultimate public convenience and necessity, as a result of a certificate issued by the Commission on the basis of the application and exhibits thereto submitted in support of the authorization sought herein. The application and exhibits thereto support the public convenience and necessity.

At a hearing held on June 31, 1972, the Commission on its own motion received and made a part of the record in this proceeding all evidence including the application and exhibits thereto submitted in support of the authorization sought herein and upon consideration of the record the Commission finds:

1. HNG Oil Co. is engaged in the sales of natural gas in interstate commerce for resale for ultimate public convenience and necessity, as a result of a certificate issued by the Commission on the basis of the application and exhibits thereto submitted in support of the authorization sought herein.

2. The sales of natural gas made by Roden, as hereinbefore described and as more fully described in the applications in this proceeding, are made in interstate commerce subject to the jurisdiction of the Commission and are, therefore, a "natural gas company" within the meaning of the Natural Gas Act as hereinafter found by the Commission.

3. The sales of natural gas made by Roden, as hereinbefore described and as more fully described in the application in this proceeding, are made in interstate commerce subject to the jurisdiction of the Commission and are, therefore, a "natural gas company" within the meaning of the Natural Gas Act as hereinafter found by the Commission.

4. Applicant is able and willing properly to do the acts and to perform the service proposed and to conform to the provisions of the Natural Gas Act and the applicable rules, regulations, and orders of the Commission.

5. Applicant is able and willing properly to do the acts and to perform the service proposed and to conform to the provisions of the Natural Gas Act and the applicable rules, regulations, and orders of the Commission.

6. It is necessary and appropriate in carrying out the provisions of the Natural Gas Act that the small producer certificate of public convenience and necessity to Houston Natural Gas Producing Co. as listed in Appendix A hereto should be amended as hereinafter ordered.

7. It is necessary and appropriate in carrying out the provisions of the Natural Gas Act that the small producer certificate of public convenience and necessity to Houston Natural Gas Producing Co. as listed in Appendix A hereto should be amended as hereinafter ordered.

8. It is necessary and appropriate in carrying out the provisions of the Natural Gas Act that the small producer certificate of public convenience and necessity to Houston Natural Gas Producing Co. as listed in Appendix A hereto should be amended as hereinafter ordered.

9. It is necessary and appropriate in carrying out the provisions of the Natural Gas Act that the small producer certificate of public convenience and necessity to Houston Natural Gas Producing Co. as listed in Appendix A hereto should be amended as hereinafter ordered.

10. It is necessary and appropriate in carrying out the provisions of the Natural Gas Act that the small producer certificate of public convenience and necessity to Houston Natural Gas Producing Co. as listed in Appendix A hereto should be amended as hereinafter ordered.

The Commission orders:

A certificate of public convenience and necessity is hereby issued to HNG Oil Co. in Docket No. CS93-28 et al., on April 19, 1969, and sealed for filing insofar as it pertains to the termination of the certificate of public convenience and necessity to Houston Natural Gas Producing Co. previously made by Roden, as hereinbefore described and as more fully described in the applications and in the tabulation herein.

The certificate granted in paragraph (A) above is not transferable and shall be effective only so long as applicant continues the acts or operations hereby authorized in accordance with the provisions of the Natural Gas Act and the applicable rules, regulations, and orders of the Commission.